MUSINA LOCAL MUNICIPALITY

CIDB Class Grading 6CE or Higher

TENDER NO.: 17- 2023/24

FOR

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

PROCUREMENT DOCUMENT:

MAY 2024

NAME OF TENDERER: _____

TENDER SUM (VAT Incl.): _____

CSD NUMBER: _____

CLOSING DATE: 21 June 2024

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EXPANDED PUBLIC WORKS PROGRAMME
CONTRIBUTING TO A NATION AT WORK

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MUSINA LOCAL MUNICIPALITY

T1.1 Tender Notice and Invitation to Tender (*White Pages*)

VERY IMPORTANT NOTICE ON DISQUALIFICATIONS:

The Musina Local Municipality will consider no Bid unless it meets the following responsiveness criteria:

Administrative compliance

Tax Compliant Status Pin Issued
Proof of Receipt of payment for tender document (Receipt / Internet payment). Only applicable to those who purchased the document
Rates & Tax Account (Municipal Bill): Certifies copy of municipal rates and taxes statement of account not older than three months for all directors and for the company.
CIDB Grading of 6CE or higher
Attach CSD Report
Letter of Good standing from Workman's Compensation
Letter of Good standing from UIF
Certified ID copies of all members / owners / shareholders / Trustees
Certified copies of CC or Company registration Certificate
Certified copy of 3yrs Audited Financial Statements of company
All other documents as indicated in the General Conditions Document
All pages must be initialed including drawings

- THE USE OF CORRECTION FLUID (TIPPEX) WILL AUTOMATICALLY INVALIDATE YOUR BID

- Bidders must attach the Statement of Municipal Rates on the municipality letterhead not older than 3 months for the company and all directors (if the Statement of Municipal Rates is not in

the name of bidder and all directors' affidavit from SAPS must be attached) or letter from Traditional Authority not older than 3 months for the company and all directors or a lease agreement for the company and all directors.

- The bid will be rejected if any municipal rates and taxes or municipal service charges owed by that bidder or any of its directors to the Municipality or Municipal entity, or to any other Municipality or Municipal entity are in arrears for more than three months (90 days)

- **Recovery of rates in arrears from tenants and occupiers**
- **Late bids shall not be admitted for consideration.**
- **Incase of JV , contract will be signed with the partner with highest grade**

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Bidders are hereby invited to bid for the following projects:

Tender No.	Description of Services	CIDB Requirement	Closing Date	Tender Document Price	Enquiries (Office Hours)
17-2023/24	Contractor for Construction of Enhancing of Security Features in Main Building and Old Traffic Office	6CE or higher	21 June 2024 @11:00	R 1 583.29 or can alternatively be downloaded for free from e-Tender Publication Portal or on Musina Municipality website	Mr Nemudzivhadi M 063 686 7546 mukondelelin@musina.gov.za

Musina Local Municipality shall adjudicate Tenders in accordance with the Supply Chain Management Policy and the Preferential Procurement Policy Framework Act, 2000 and its Regulations.

Tender documents containing the Conditions of Tender will be available from the Cashier, Musina Civic Centre, 21 Irwin Street, **as from Friday, 24 May 2024**, **upon a non-refundable fee as indicated above, during office hours (Monday to Friday from 8:00am to 15:00pm) OR can alternatively be downloaded for free from e-Tender Publication Portal (www.etenders.gov.za) or on Musina Municipality website (www.musina.gov.za)**

Prospective bidders are required to submit fully completed, priced, signed and initialled bid documents in a sealed envelope marked with the **"Bid number and description"**. The bid document must be deposited in the designated Tender box located at the reception area of Musina Local Municipality Civic Centre, 21 Irwin Street, not later than the closing date and time. **NB. All prescribed supporting documents as specified in the bid document must be attached**. No late, faxed or telephonic bids will be accepted. Tenders/Bids will remain valid for 90 (ninety) day

The municipality reserves the right to negotiate further conditions and requirements with the successful Tenderer. Musina Local Municipality is not compelled to accept the lowest or any bid.

All Responsive Bids will be evaluated on the 80/20 Preference Points System as prescribed by the Preferential Procurement Regulations, 2022.

All queries regarding the bids must be submitted in writing by email to the relevant contact person as indicated above. Supply chain queries can be emailed to:marys@musina.gov.za.

Civic Centre, Irwin Street, Musina, 0900.

TN Tshiwanammbi
Municipal Manager

T1.2 TENDER DATA (*Pink Pages*)

The conditions of tender are the Standard Conditions of Tender as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement (Jan 2009) as published in Government Gazette No: 31823, Board Notice 11 of 2008 of 30 February 2009. (See www.cidb.org.za).

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.

Clause Number	
F.1.1	**The Employer is:** Musina Local Municipality
F.1.2	The Tender documents issued by the Employer comprise the following documents: **THE TENDER** **Part T1 : Tendering Procedures** 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: Agreements and Contract Data** C1.1 Form of offer and acceptance C1.2 Contract Data C1.3 Performance guarantee C1.4 OHS **Part C2: Pricing Data** C2.1 Pricing Instructions C2.2 Bill of Quantities **Part C3: Scope of Work** C3 Scope of Work **Part C4: Site Information** C4 Site Information

F1.3	**Interpretation** 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 tender conditions.
F.1.4	**The Employer is:**
	Musina Local Municipality Private Bag X 611 Musina 0900
F.1.5.1	**Reject or accept** The Employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such a cancellation and rejection, but will give written reasons for such action upon written request to do so.
F.2.1	**Eligibility** Only those tenderers who satisfy the following criteria are eligible to submit tenders:
F.2.1	Only those Tenderers who are registered with the CIDB, or are 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 **6CE or higher** class construction work, are eligible to have their tenders evaluated. Joint Ventures are eligible to submit tenders provided that: 1. every member of the joint venture is registered with the CIDB; 2. the e lead partner has a contractor grading designation in the **6CE** OR **higher** class of construction work; and 3. 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 **6CE or higher** class of construction work or a value determined in accordance with Regulation 25 (1B) of 25 (7A) of the Construction Industry Development Regulations. Only tenderers who employ staff which satisfy EPWP requirements are eligible to

	submit tenders. The Tenderer must have a staff member who has completed, or, is registered for training towards, the NQF level 5 unit standard "Develop and Promote Labour Intensive Construction Strategies".
F.2.2	**Compensation of tendering** Accept that 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 satisfy requirements.
F.2.3	**Check documents** Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.
F.2.4	**Confidentiality and copyright** 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.
F.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.
F2.6	**Acknowledge Addenda** Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension of the closing time stated in the tender data, in order to take the addenda into account.
F.2.10	**Pricing the tender** State the rates and prices in Rand.
F.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. Erasures and the use of masking fluid are prohibited.
F.2.12	**Alternative tender offers** Alternative offers may be submitted only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. The alternative tender offer is to be submitted with the main tender offer together with a schedule that compares the requirements of the tender documents with the alternative requirements the tenderer proposes. Acceptance of an alternative tender offer will mean acceptance in principle of the

	offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.
F2.13.3	Tender offer communicated on paper shall be submitted as an original.
F.2.13.5	The Employer's address for delivery of Tender offers and identification details to be shown on each Tender offer package are:
	CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE (MUSINA LOCAL MUNICIPALITY)
	Closing date and time: Closing date: **21 June 2024** Closing Time: **11H00**
	Location of Tender box: Reception area of Musina Local Municipality Civic Centre, 21 Irwin Street
	Physical address: Musina Local Municipality, 21 Irwin Street
F.2.13.9	Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.
F.2.14	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.
F2.15	The closing time for submission of tender offers is as mentioned in F.2.13.5 above and as stated in the Tender Notice and Invitation to Tender.
F.2.16	The Tender offer validity period is **90 Days**.
F.2.18	The tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the Labour-Intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.
F2.20	The tenderer is required to submit a Performance Guarantee from an approved insurer within **14** days from appointment. A format is included in Part C1.3 of this document. The tenderer is to submit to the employer 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.
F.2.23	The tenderer is required to submit with his tender: (1) an original valid Tax Clearance Certificate issued by the South African Revenue Services; and (2) An original or certified copy of the Company / CC Registration. In case of Joint Venture – both companies / cc to submit registration documentation. (3) In case of Joint Venture – the Joint Venture Agreement.

F.3.4	The time and location for opening of the Tender offers are: Closing date: **21 June 2024** Closing Time: **11H00** Location: **Musina Local Municipality Civic Centre, 21 Irwin Street**
F3.9.1	Replace the contents of the clause with the following: Check responsive tender offers for arithmetical errors, correcting them in the following manner: Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern. If a bill of quantities (or schedule of rates) 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 will be corrected. 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 a bills of quantities applies) to achieve the tendered total of the prices. Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of his arithmetical errors in the manner described above.

T1.3: Standard Conditions of Tender (*Pink Pages*)

The Standard Conditions of Tender that shall govern, shall be the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity as published in CIDB Board Notice 86 of 2010 and as published in Government Gazette No 33239 of 28 May 2010 as amended and supplemented by the Tender Data in Part T1.2.

The complete extract entitled “Annex F” is bound hereafter into this volume, and may not have been edited where found in electronic format by any tender document compiler or tenderer. However, where differences between the original published edition and the edition bound in this document are evident, the original published edition shall govern.

Annex F
(normative)

Standard Conditions of Tender

Note: 1 These Standard Conditions of Tender are identical to that contained In Annex F of *SANS* 294: *2004, Construction Procurement Processes, Procedures and Methods.*

2 Annex E of *SANS* 294, *Construction Procurement Processes, Procedures and Methods,* and SAICE's Practice Manual #1, *The use of South African National Standards in Construction Procurement* , provide guidance on referencing these Standard Conditions of Tender in procurement documents.

F.1 General

F.1.1 Actions

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 F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently.

F.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

F.1.3 Interpretation

F.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.

F.1.3.2 These conditions of tender, the tender data and tender schedules which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.

F.1.3.3 For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

a) Comparative offer means the tenderer's financial offer after the factors of non-firm prices, all unconditional discounts and any other tendered parameters that will affect the value of the financial offer have been taken into consideration

b) 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; and

c) 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 quality (functionality) means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.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 read, copied and recorded. Writing 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.

F.1.5 The employer's right to accept or reject any tender offer

F.1.5.1 The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection, but will give written reasons for such action upon written request to do so.

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

F.2 Tenderer's obligations

F.2.1 Eligibility

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.

F.2.2 Cost of tendering

Accept that 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 satisfy requirements.

F.2.3 Check documents

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

F.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.

F.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.

F.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.

F.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@) are stated in the tender data.

F.2.8 Seek clarification

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

F.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.

F.2.10 Pricing the tender offer

F.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 14 days before the closing time stated in the tender data.

F2.10.2Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.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

F.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.

F.2.11 Alterations to documents

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. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

F.2.12.1 Submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. The alternative tender offer is to be submitted with the main tender offer together with a schedule that compares the requirements of the tender documents with the alternative requirements the tenderer proposes.

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

F.2.13 Submitting a tender offer

F.2.13.1 Submit a tender offer to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

F.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 in Black ink.

F.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.

F.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.

F.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.

F.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.

F.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.

F.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.

F.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.

F.2.15 Closing time

F.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. Proof of posting shall not be accepted

as proof of delivery. The employer shall not accept tender offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the tender data.

F.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.

F.2.16 Tender offer validity

F.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.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period.

F.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 F.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.

F.2.18 Provide other material

F.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.

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

F.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.

F.2.20 Submit securities, bonds, policies, etc.

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.

F.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.

F.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to clarification

Respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.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 seven 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 drew documents.

F.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.

F.3.4 Opening of tender submissions

F.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.

F.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, the total of his prices, preferences claimed and time for completion, if any, for the main tender offer only.

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

F.3.5 Two-envelope system

F.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.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advice 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 quality evaluation more than the minimum number of points for quality stated in the tender
data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Nondisclosure

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.

F.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.

F.3.8 Test for responsiveness

F.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.

F.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) 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.

F.3.9 Arithmetical errors

F.3.9.1 Check responsive tender offers for arithmetical errors, correcting them in the following manner:

a) Where there is a discrepancy between the amounts in figures and in words, the amount in figures shall govern.

b) If bills of quantities (or schedule of quantities or schedule of rates) 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.

c) 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.

F.3.9.2 Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of his arithmetical errors in the manner described in F.3.9.1.

F.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.

F.3.11 Evaluation of tender offers

F.3.11.1 General

Evaluate tender offers using the tender evaluation method that is indicated in the Tender Data and described below:

Method 1 : Financial offer	1) Rank tender offers from the most favourable to the least favourable comparative offer. 2) Recommend highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 2 : Financial offer and preferences	1) Score tender evaluation points for financial offer. 2) Confirm that tenderers are eligible for the preferences claimed and if so, score tender evaluation points for preferencing. 3) Calculate total tender evaluation points. 4) Rank tender offers from the highest number of tender evaluation points to the lowest. 5) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 3 : Financial offer and quality	1) Check compliance and submissions of all mandatory documents. 2) Score tender evaluation points for financial offer. 3) Calculate total tender evaluation points. 4) Rank tender offers from the highest number of tender evaluation points to the lowest.

	5) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 4 : Financial offer, quality and preferences	1) Check compliance and submissions of all mandatory documents. 2) Score tender evaluation points for financial offer. 3) Confirm that tenderers are eligible for the preferences claimed, and if so, score tender evaluation points for preferencing. 4) Calculate total tender evaluation points. 5) Rank tender offers from the highest number of tender evaluation points to the lowest. 6) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

Score financial offers, preferences and quality, as relevant, to two decimal places.

F.3.11.2 Scoring Financial Offers

Score the financial offers of remaining responsive tender offers using the following formula:

N_{FO}	= W, x A where:
N_{FO}	= the number of tender evaluation points awarded for the financial offer.
W_1	= the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
A	= a number calculated using either formulas 1 or 2 below as stated in the Tender Data.

Formula	**Comparison aimed at achieving**	**Option 1**	**Option 2**
1	Highest price or discount	$A = (1 + \frac{(P - Pm)}{Pm})$	A = P / Pm
2	Lowest price or percentage commission/fee	$A = (1 - \frac{(P - Pm)}{Pm})$	A = Pm / P

Where:

Pm = the comparative offer of the most favourable tender offer.

P = the comparative offer of tender offer under consideration.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

EVALUATION PROCESS AND CRITERIA

The following evaluation process and criteria will be used to evaluate all bids submitted:

1. Administrative Compliance – 1st Stage

1.1 All bids duly lodged will be examined to determine compliance with bidding requirements and conditions. Bids with obvious deviations from the requirements/conditions, will be eliminated from further evaluation.

1.2 **Critical Criteria**:

Evaluation of bids

Tax Compliance Status Pin
Proof of Receipt of payment for tender document (Receipt / Internet payment). Only applicable to those who purchased the document
Rates & Tax Account (Municipal Bill): Copy of municipal rates and taxes statement of account not older than three months for all directors and for the company
CIDB Grading of 6CE or higher
Attach CSD Report
Letter of Good standing from Workman's Compensation
Letter of Good standing from UIF
Certified ID copies of all members / owners / shareholders / Trustees
Certified copies of CC or Company registration Certificate
Certified copy of 3yrs Audited Financial Statements of company
All other documents as indicated in the General Conditions Document
All pages must be initialled including drawings

- THE USE OF CORRECTION FLUID (TIPPEX) WILL AUTOMATICALLY INVALIDATE YOUR BID

- Bidders must attach the Statement of Municipal Rates on the municipality letterhead not older than 3 months for the company and all directors (if the Statement of Municipal Rates is not in the name of bidder and all directors' affidavit from SAPS must be attached) or letter from Traditional Authority not older than 3 months for the company and all directors or a lease agreement for the company and all directors.

- The bid will be rejected if any municipal rates and taxes or municipal service charges owed by that bidder or any of its directors to the Municipality or Municipal entity, or to any other Municipality or Municipal entity are in arrears for more than three months (90 days)

- **Recovery of rates in arrears from tenants and occupiers**
- **Late bids shall not be admitted for consideration.**
- **Incase of JV , contract will be signed with the partner with highest grade**

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

EVALUATION CRITERIA

1. CONTRACTOR CAPABILITY

Mandatory requirement to assess bidders capability to execute the contract

Contractor to complete the tables below, and attach necessary documents as part of returnable documents.

Table 1: Company's reputation & references: (Civil engineering works experience)

No.	Target Goals: List reference with Details (civil engineering works)	Number of projects
1.	Minimum: R8m to R10m	
2.	R10,1m to R20m	
3.	R20,1m to R30m	
4.	More than R30	

NB: Please attach at least 4 appointment letters & completion certificates

Table 2: Personnel knowledge & experience:

No.	Target goals	Number of personnel
1.	N6 Certificate in Civil engineering	
2.	National diploma: civil engineering + 1 to 5 yrs. experience in civil engineering roads works/structures	
3.	National diploma: civil engineering with more than 5 yrs. experience in civil engineering roads works	
4.	Register with ECSA as a: Professional technician/Technologist/Engineer	

NB: Please attach the employment structure with CV's & certified copies of qualifications.

Table 3: Financial status

	Rating
Bank rating C or higher	Attach proof

NB: Attach Bank letter to confirm bank rating

Table 4: Plant & Equipments

Provide list of Plant & Equipment's which you own.

NB: Proof of ownership of plants must be submitted with tender.

2. EVALUATION OF BIDS

1st Stage: ADMINISTRATIVE COMPLIANCE

The bidders **comply administratively** in order to move to the next stage. The following documents must be attached to comply administratively.

Tax Compliance Status Pin
Proof of Receipt of payment for tender document (Receipt / Internet payment). Only applicable to those who purchased the document
Rates & Tax Account (Municipal Bill): Copy of municipal rates and taxes statement of account not older than three months for all directors and for the company
CIDB Grading of 6CE or higher
Attach CSD Report
Letter of Good standing from Workman's Compensation
Letter of Good standing from UIF
Certified ID copies of all members / owners / shareholders / Trustees
Certified copies of CC or Company registration Certificate
Certified copy of 3yrs Audited Financial Statements of company
All other documents as indicated in the General Conditions Document
All pages must be initialled including drawings

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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2nd stage: PRICING & SPECIFIC GOALS

The **80/20-point** system is adopted in this stage as the project is estimated as not more than **R50 000 000.00**. **80 points** will be for Price and **20 points** for Specific Goals

The **80/20** points will be as follows:

a) PRICE POINTS **(80 Points)**

Price Assessment	80 Points
SUB TOTAL - A	**80**

b) SPECIFIC GOALS **(20 Points)**

Designated groups	Number of points	Means of Verification/Required Document
Points for HDI status (At least 51% Black owned)	10	CSD Report and certified copy of Company Registration Documents
Points for 51% Women's Equity	4	CSD Report and certified copies of Identification Documents
Points for black person with Disability	3	CSD Report and certified copies of Identification Documents and Letter of confirmation from registered medical doctor (letter must have Practise number)
Points for 51% owned Youth firm	3	CSD Report and certified copies of Identification Documents
Form not completed or submitted	0	-
SUB TOTAL - B	**20**	
Failure to submit required documents will result in the bidder not qualifying for claiming preferential points.		

c) TOTAL POINTS = **Price Points**(a) **+ Specific Goals Points**(b)

TOTAL A + B	100

Note: Incase of JV , contract will be signed with the partner with highest grade

F.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.

F.3.13 Acceptance of tender offer

F.3.13.1 Accept tender offer only if the tenderer complies with the legal requirements stated in the Tender Data.

F.3.13.2 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful tenderer as described in the form of offer and acceptance.

F.3.14 Notice to unsuccessful tenderers

After the successful tenderer has acknowledged the employer's notice of acceptance, notify other tenderers that their tender offers have not been accepted.

F.3.15. Prepare contract documents

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,

c) Other revisions agreed between the employer and the successful tenderer, and

d) The schedule of deviations attached to the form of offer and acceptance, if any.

F.3.16 Issue final contract

Prepare and issue the final draft of contract documents to the successful tenderer for acceptance as soon as possible after the date of the employer's signing of the form of Offer and acceptance (including the schedule of deviations, if any). Only those documents that the conditions of tender require the tenderer to submit, after acceptance by the employer, shall be included.

F.3.17 Complete adjudicator's contract

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

F.3.18 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.

PART T2: LIST OF RETURNABLE DOCUMENTS (YELLOW PAGES)

The tenderer must complete the following returnable documents:

T2.1 RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION ... T.30

T2.1 A CERTIFICATE OF AUTHORITY T.30

T2.1 B CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING T.33

T2.1 C SCHEDULE OF PROPOSED SUBCONTRACTORS T.34

T2.1 D SCHEDULE OF PLANT AND EQUIPMENT T.35

T2.1 E SCHEDULE OF THE TENDERER'S EXPERIENCE T.36

T2.1 F RECORD OF ADDENDA TO TENDER DOCUMENTS T.37

T2.1 G DEVIATIONS OR QUALIFICATIONS BY THE TENDERER T.38

T2.1 H CONTRACTOR'S ESTABLISHMENT ON SITE T.39

T2.1 I CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS T.40

T2.1 J AUTHORISATION FOR DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL T.41

T2.1 K VALID TAX CLEARANCE CERTIFICATE (IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS, 2011 PUBLISHED IN GOVERNMENT GAZETTE, NO 34350, DATED 8 JUNE 2011) AND SARS PIN T.42

T2.1 L CERTIFIED COPY OF CERTIFICATE OF INCORPORATION (IF TENDERER IS A COMPANY) T.43

T2.1 M CERTIFIED COPY OF FOUNDING STATEMENT (IF TENDERER IS A CLOSED CORPORATION) T.44

T2.1 N CERTIFIED COPY OF PARTNERSHIP AGREEMENT (IF TENDERER IS A PARTNERSHIP) T.45

T2.1 O CERTIFIED COPY OF IDENTITY DOCUMENT (FOR THE DIRECTORS / SHAREHOLDERS) T.46

T2.1 P JOINT VENTURE AGREEMENT (IF TENDERER IS A JOINT VENTURE) ... T.47

T2.1 Q CERTIFIED COPY OF CIDB REGISTRATION CERTIFICATE T.48

T2.1 R ORIGINAL PROPERTY RATES AND TAXES CERTIFICATE OR COPY OF VALID LEASE AGREEMENT (IF RENTING) OF THE COMPANY T.49

T2.1 S ORIGINAL PROPERTY RATES AND TAXES CERTIFICATE OR COPY OF VALID LEASE AGREEMENT (IF RENTING) OF THE DIRECTORS / SHAREHOLDERS T.50

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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T2.1 T ORIGINAL BANK RATING CERTIFICATE / LETTER T.51

T2.1 U CERTIFIED COPIES OF CURRICULUM VITAE OF ALL SUPERVISORY AND SAFETY PERSONNEL T.52

T2.1 V PRO-FORMA CERTIFICATE OF INSURANCE COVER T.53

T2.1 W CERTIFICATE OF TENDERER'S CERTIFIED B-BBEE STATUS LEVEL OF CONTRIBUTOR (IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022) T.54

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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PART T2: LIST OF RETURNABLE DOCUMENTS (YELLOW PAGES)

T2.1 RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION

T2.1 A CERTIFICATE OF AUTHORITY

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

A Company	B Partnership	C Joint Venture	D Sole Proprietor	E Close Corporation

A. Certificate for company

I,……., chairperson of the board of directors of ……, hereby confirm that by resolution of the board (copy attached) taken on ……20….,Mr/Mrs…….acting in the capacity of……..,was authorised to sign all documents in connection with this tender and any contract resulting from it on behalf of the company.

As witness

1…….. ……

. Chairman

2…….. ……..

Date

B. Certificate of partnership

We, the undersigned, being the key partners in the business trading as……

hereby authorise Mr/Mrs……, acting in the capacity of……to sign all documents in connection with the tender for Contract……and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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NOTE: This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Mrs……..,authorised signatory of the company……, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract……and any other contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

NAME OF FIRM	ADDRESS	AUTHORISING SIGNATURE, NAME &CAPACITY
Lead Partner: CIDB Reg No: ……		Signature: …….. Name: …….. Designation: ……..
Lead Partner: CIDB Reg No: ……		Signature: …….. Name: …….. Designation: ……..
Lead Partner: CIDB Reg No: ……		Signature: …….. Name: …….. Designation: ……..
Lead Partner: CIDB Reg No: ……		Signature: …….. Name: …….. Designation: ……..

The Joint Venture agreement must be submitted with this document and must clearly state the percentage partnership, payment procedures and VAT payment percentages between the two parties.

Failure to affix the Joint Venture agreement as prescribed to this page shall result in this tender not being further considered for the award of the contract.

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D. Certificate for sole proprietor

I, ……., hereby confirm that I am the sole owner of the business trading as……...

As Witness:

1…….. ……

Signature: Sole owner

2……. …….

Date

E. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as……hereby authorise Mr/Mrs……

Acting in the capacity of……, to sign all documents in connection with the tender for Contract……and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

NOTE: This certificate is to be complete and signed by all the key members upon whom rests the direction of the affairs of the Close Corporation as a whole.

T2.1 B CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING

This is to certify that

……..……..(Tenderer)

of

……..……

(address)

……

was represented by the person(s) named below at the compulsory meeting held for all tenderers at ……(location) on……..(date), starting at……..

We acknowledge that the purpose of the meeting was to acquaint ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person(s) attending the meeting:

Name ……

Signature……

Capacity……...

Name……

Signature……

Capacity……...

Attendance of the above persons at the meeting is confirmed by the employer's representative/ Employer's Agent, namely:

Name……..

Signature……

Capacity……..

Date &Time……..……...

T2.1 C SCHEDULE OF PROPOSED SUBCONTRACTORS

We notify you that it is our intention to employ the following subcontractors for work in this contract.

If we are awarded a contract we agree that this notification does not change the requirement for us to submit the name of proposed subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

	Name and address of proposed Subcontractor	**Company Registration Number& CIDB Classification**	**Description of Work to be executed by Subcontractor**
1.			
2.			
3.			
4.			
5.			

Signed……. Date…….

Name…….. Position……

Tenderer…….

T2.1 D SCHEDULE OF PLANT AND EQUIPMENT

The following are lists of major items of relevant equipment that I/we presently own or lease and will have available for this contract or will acquire or hire for this contract is my/our tender is accepted. If found at any stage that the information is false and incorrect, the tender will not be further considered for the award of the contract.

(a) Details of major equipment that is owned by and immediately available for this contract.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major equipment that will be hired, or acquired for this contract if my/our tender is acceptable

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required

Signed…….. Date……

Name…… Position……..

Tenderer……....

T2.1 E SCHEDULE OF THE TENDERER'S EXPERIENCE

The following is a statement of similar work successfully executed by myself/ourselves in the last five years:

Employer, contact person and telephone number	Description of contract	Value of work Inclusive of VAT (Rand)	CIDB Classification	Date Completed

Signed……. Date ……..

Name……... Position…….

Tenderer……..

T2.1 F 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 of Details**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Attach additional pages if more space is required.

Signed……. Date ……..

Name……... Position……..

Tenderer……..

T2.1 G DEVIATIONS OR QUALIFICATIONS BY THE TENDERER

Note: Tenderers will be declared to be non-responsive should any proposed deviation or qualification, save for where alternative tender offers are permitted in terms of the Tender Data, in the employer's opinion:

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,

b) 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.

PAGE	DESCRIPTION

SIGNED ON BEHALF OF TENDERER: .....

T2.1 H CONTRACTOR'S ESTABLISHMENT ON SITE

Should the combined, extended total tendered for Items:

(a) Fixed Charge Items (SABS1200A-8.3)

(b) Time-Related Items (SABS1200A-8.4)

Shall not exceed a maximum of 15 % of the tender sum (excluding VAT).

Total tendered for above mentioned items expressed as a percentage of the tender sum (excluding VAT): .....% (insert percentage).

SIGNED ON BEHALF OF TENDERER: .....

T2.1 I CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS

TO: MUNICIPAL MANAGER, MUSINA LOCAL MUNICIPALITY

FROM: _____ (Name of Bidder)

FURTHER DETAILS OF BIDDER(S); DIRECTORS/SHAREHOLDERS/PARTNERS, ETC.

Directors/shareholders/Partner	Physical address of the Business	Municipal Account No.	Physical residential address of the Director/ Shareholder/ Partner	Municipal Account No.

NB: Please attach certified copy (Copies) of ID document(s) and proof of payment not older than 3 months

_____ _____

Signatory Date

Witnesses

1. _____ _____ _____

Full Names Signature Date

2. _____ _____ _____

Full Names Signature Date

T2.1 J AUTHORISATION FOR DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL

TO: MUNICIPAL MANAGER, MUSINA LOCAL MUNICIPALITY

FROM: _____(Name of the Bidder or Consortium)

I, _____ the undersigned, hereby authorise the Musina Local Municipality to deduct the full amount outstanding by the business organisation/Director/Shareholder/Partner, etc. from any payment due by us/me.

Signed at _____ Date_____ Month _____ 20_____

Print Name: _____

Signature: _____

Thus done and signed for and on behalf of the bidder/Contractor

_____	_____
Signatory	Date

Witnesses

1. _____	_____	_____
Full Names	Signature	Date
2. _____	_____	_____
Full Names	Signature	Date

T2.1 K VALID TAX CLEARANCE CERTIFICATE (in terms of the Preferential PROCUREMENT REGULATIONS, 2011 PUBLISHED IN GOVERNMENT GAZETTE, NO 34350, DATED 8 JUNE 2011) AND SARS PIN

Attach Tax Certificate / SARS pin & CSD

T2.1 L CERTIFIED COPY OF CERTIFICATE OF INCORPORATION (IF TENDERER IS A COMPANY)

Attach
Certificate

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.1 M CERTIFIED COPY OF FOUNDING STATEMENT (IF TENDERER IS A CLOSED CORPORATION)

Attach
Statement

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.1 N CERTIFIED COPY OF PARTNERSHIP AGREEMENT (IF TENDERER IS A PARTNERSHIP)

Attach Agreement

T2.1 O CERTIFIED COPY OF IDENTITY DOCUMENT (FOR THE DIRECTORS / SHAREHOLDERS)

Attach
Certified
ID Copies

T2.1 P JOINT VENTURE AGREEMENT (IF TENDERER IS A JOINT VENTURE)

Attach Agreement

T2.1 Q CERTIFIED COPY OF CIDB REGISTRATION CERTIFICATE

Attach
Certificate

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.1 R ORIGINAL PROPERTY RATES AND TAXES CERTIFICATE OR COPY OF VALID LEASE AGREEMENT (IF RENTING) OF THE COMPANY

Attach Certificate or Lease Agreement

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.1 S ORIGINAL PROPERTY RATES AND TAXES CERTIFICATE OR COPY OF VALID LEASE AGREEMENT (IF RENTING) OF THE DIRECTORS / SHAREHOLDERS

Attach Certificate or Lease Agreement

T2.1 T ORIGINAL BANK RATING CERTIFICATE / LETTER

Attach
Certificate
/ Letter

T2.1 U CERTIFIED COPIES OF CURRICULUM VITAE OF ALL SUPERVISORY AND SAFETY PERSONNEL

Attach
CV's

T2.1 V PRO-FORMA CERTIFICATE OF INSURANCE COVER

Attach
Certificate

T2.1 W CERTIFICATE OF TENDERER'S CERTIFIED B-BBEE STATUS LEVEL OF CONTRIBUTOR (IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022)

Attach Certificate

T2.2 MBD FORMS CHECKLIST

T2.2 A MBD1 ..... T.57

T2.2 B MBD 2..... T.60

T2.2 C MBD 3.1..... T.61

T2.2 D MBD 4..... T.62

T2.2 E MBD 5..... T.67

T2.2 F MBD 6.1..... T.69

T2.2 G MBD 6.2..... T.76

T2.2 H MBD 7.1..... T.80

T2.2 I MBD 8..... T.82

T2.2 J MBD 9..... T.84

T2.2 MBD FORMS CHECKLIST

☐	MBD 1: INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING
☐	MBD 2: TAX CLEARANCE CERTIFICATE REQUIREMENTS
☐	MBD 3.1: PRICING SCHEDULE – FIRM PRICES
☐	MBD 4: DECLARATION OF INTEREST
☐	MBD 5: DECLARATION FOR PROCUREMENT ABOVE 10 MILLION
☐	MBD 6.1: PREFERENCE POINTS CLAIM FORM
☐	MBD 7.1: CONTRACT FORM – PURCHASE OF GOODS / WORKS
☐	MBD 8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES
☐	MBD 9: CERTIFICATE OF INDEPENDENT BID DETERMINATION

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.2 A MBD1

PART A

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE MUSINA LOCAL MUNICIPALITY					
BID NUMBER:	**17-2023/24**	CLOSING DATE:	**21 June 2024**	CLOSING TIME:	**11H00**
DESCRIPTION:	CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS)*

Tender Box at the Musina Local Municipality Civic Centre **21 Irwin Street** **MUSINA, 0900** **Limpopo Province**					
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELL PHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		**OR**	CSD No:	

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No	B-BBEE STATUS LEVEL SWORN AFFIDAVIT	☐ Yes ☐ No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]			
ARE YOU THE ACCREDITED REPRESENTATIVE **IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS OFFERED		**TOTAL BID PRICE**	**R**
SIGNATURE OF BIDDER	……	**DATE**	
CAPACITY UNDER WHICH THIS BID IS SIGNED			

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**
DEPARTMENT	Musina Local Municipality - Supply Chain Management (SCM)	Musina Local Municipality -Programme Management Unit (PMU)
CONTACT PERSON	M Siziba	M Nemudzivhadi
TELEPHONE NUMBER	(015) 534 6191	(015) 534 6100
FACSIMILE NUMBER	(015) 534 2513	(015) 534 2513
E-MAIL ADDRESS	Marys@musina.gov.za	Mukondelelin@musina.gov.za

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

PART B

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 RE-TYPED) OR ONLINE**
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, 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 TAXPAYER'S 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 PART B:3.
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.

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……

DATE:……...

T2.2 B MBD 2

TAX CLEARANCE CERTIFICATE REQUIREMENTS

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

1 In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

2 SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3 The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.

4 In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

5 Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

6 Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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T2.2 C MBD 3.1

PRICING SCHEDULE – FIRM PRICES

(PURCHASES)

NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder……	Bid Number……..…..
Closing Time ……. …..	Closing Date ……..

OFFER TO BE VALID FOR……DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)

- Required by: …….
- At: ……
- Brand and Model (if applicable) …….
- Country of Origin …….
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) …….
- Period required for delivery ……*Delivery: Firm/Not firm
- Delivery basis …….

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** “all applicable taxes” includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

*Delete if not applicable

T2.2 D MBD 4.

DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state[1], or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorized representative declare his/her position in relation to the evaluating/adjudicating authority where-

   - The bidder is employed by the state; and/or
   - The legal person on whose behalf the bidding document is signed, has a relationship with persons/ a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

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

   2.1. Full Name of bidder or his or her representative:……

   2.2. Identity Number:…….....

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

   2.4. Company registration number:……

   2.5. Tax Reference Number:…….

   2.6. VAT Registration Number:……

   2.6.1 The names of all directors/ trustees/ shareholders/ members, their individual identity numbers, tax reference numbers and, if applicable, employee/ persal numbers must be indicated in paragraph 3 below.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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1"State" means –

a. Any national or provincial department, national or provincial public entity or constitution within the meaning of Public Finance Management Act, 1999 (Act No. 1 of 1999);

b. Any municipality or municipal entity;

c. Provincial legislature;

d. National Assembly or the national Council of provinces; or

e. Parliament.

2"shareholder" means-

a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.1. Are you or any person connected with them bidder presently employed by the state? YES ☐ NO ☐

2.1.1. If so, furnish the following particulars: Name of person / director / trustee/ shareholder/ member: ……

Name of state institution at which you or person connected to the bidder is employed: ……..

Position occupied in the public institution:……...

Any other particulars:

……

……

……

2.1.2. If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector? YES ☐ NO ☐

2.1.2.1. If yes, did you attach proof of such authority to the bid document? YES ☐ NO ☐

(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.1.2.2. If no, furnish reasons for non-submission of such proof:

……

……..

……

Did you or your spouse, or any of the company's directors/ trustees/ shareholders/ members or their spouses conduct business with the state in the previous twelve months? YES ☐ NO ☐

2.1.3. If so, furnish particulars:

……

……...

……

2.2. Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? YES ☐ NO ☐

2.2.1. If so, furnish particulars:

……

……

2.3. Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjustment of this bid? YES ☐ NO ☐

2.3.1. If so, furnish particulars:

……

……

2.4. Do you or any of the directors/ trustees/ shareholders/ members of the company have any interest in any other related companies whether or not they are bidding for this contract?

2.4.1. If so, furnish particulars:

……

……

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

Full Names	Identity Number	Personal Tax Reference Number	State Employee Number/ Persal Number

4. DECLARATION

I, THE UNDERSIGNED (NAME)……

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPH 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 23 OF THE GENERAL CONDITIONS OF CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....	.....
Signature	Date
…….....	…….....
Position	Name of Bidder

T2.2 E MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

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.

……

……

……

* Delete if not applicable

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

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

……

……

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.

SIGNATURE……

T2.2 F MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution / Specific Goals.

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE / SPECIFIC GOALS, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to this bid:

- the **80/20** system for requirements with a Rand value of up to **R50 000 000** (all applicable taxes included); and

1.2

a) The value of this bid is estimated to **not exceed R50 000 000** (all applicable taxes included) and therefore the **80/20** preference point system shall be applicable; or

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) B-BBEE / Specific Goal.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE / SPECIFIC GOALS	20
Total points for Price and Specific Goals must not exceed	**100**

1.5 Failure on the part of a bidder to submit proof of Specific Goals together with the bid, will be interpreted to mean that preference points for Specific Goals status level of contribution are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

(a) **"Specific Goals"** means Economic Empowerment of Race, Local Companies, Women, Youth and People living with disabilities.

(b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;

(c) "**B-BBEE status level of contributor"** means 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;

(d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;

(e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

(f) "EME" means 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;

(g) **"functionality"** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.

(h) **"prices"** includes all applicable taxes less all unconditional discounts;

(i) **"proof of B-BBEE status level of contributor"** means:

B-BBEE Status level certificate issued by an authorized body or person;

A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;

Any other requirement prescribed in terms of the B-BBEE Act;

(j) **"QSE"** means a qualifying small business 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;

(k) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of **80** points is allocated for price on the following basis: **80/20**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

Pmin = Price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	**Number of points (80/20 system)**
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

5. BID DECLARATION

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution / Specific Goals must complete the following:

6. B-BBEE / SPECIFIC GOALS CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1/2

6.1 B-BBEE/ Specific goals : . = …… (maximum 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE / Specific goals .

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted?

(***Tick applicable box***)

YES		NO	

7.1.1 If yes, indicate:

i) What percentage of the contract will be subcontracted.....……%
ii) The name of the sub-contractor……..
iii) The B-BBEE status level / Specific Goals of the sub-contractor.....
iv) Whether the sub-contractor is an EME or QSE

(Tick applicable box)

YES		NO	

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations 2022:

Designated Group: An EME or QSE which is at last 51% owned by:	**EME** √	**QSE** √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		

Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. **DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm:……..

8.2 VAT registration number:……

8.3 Company registration number:…….

8.4 TYPE OF COMPANY/ FIRM

- □ Partnership/Joint Venture / Consortium
- □ One person business/sole propriety
- □ Close corporation
- □ Company
- □ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

……
……
……
……..

8.6 COMPANY CLASSIFICATION

- □ Manufacturer
- □ Supplier
- □ Professional service provider
- □ Other service providers, e.g. transporter, etc.

[*TICK APPLICABLE BOX*]

8.7 Total number of years the company/firm has been in business:……

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the Specific goals indicated in paragraphs 1.4 and 6.1 of the foregoing certificates, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof

to the satisfaction of the purchaser that the claims are correct;

iv) If the B-BBEE / Specific goals has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution.

T2.2 G MBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Municipal Bidding Document (MBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2022,the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

1.1. Preferential Procurement Regulations, 2022 (Regulation 8) make provision for the promotion of local production and content.

1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two-stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE /Specific Goals.

1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

LC = [1 -x / y] * 100

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1286:2011 is accessible on http:/www.thedti.gov.za/industrial development/ip.jsp at no cost.

1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation;

2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:

Description of services, works or goods	Stipulated minimum threshold
_____	_____%
_____	_____%
_____	_____%

3. Does any portion of the goods or services offered have any imported content?

(***Tick applicable box***)

YES		NO	

3..1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on www.reservebank.co.za

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	**Rates of exchange**
US Dollar	
Pound Sterling	
Euro	
Yen	

Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION

(REFER TO ANNEX B OF SATS 1286:2011)

OCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID NO. .....

ISSUED BY: (Procurement Authority / Name of Institution): .....

NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thdti.gov.za/industrial_development/ip.jsp. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ……..... (full names),

do hereby declare, in my capacity as …… ……..

of .....(name of bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that:

(i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content(x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.

The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2022 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: DATE: _____

WITNESS No. 1 DATE: _____

WITNESS No. 2 DATE: _____

T2.2 H MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL BIDDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL BIDDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution)…….…… in accordance with the requirements and specifications stipulated in bid number……..…….. at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.
2. The following documents shall be deemed to form and be read and construed as part of this agreement:
   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and
   (iii) Other (specify)
3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.
5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.
6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……...

DATE ……

WITNESSES

1 ……

2. ……

DATE: ……

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I…… in my capacity as……..…..

   accept your bid under reference number ……..……..…dated……for the supply of

   goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.
3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	PRICE (ALL APPLICABLE TAXES INCLUDED)	BRAND	DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)

4. I confirm that I am duly authorized to sign this contract.

SIGNED AT ……ON……..

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

WITNESSES

1. ……
2. ……

T2.2 I MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Municipal Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be rejected if that bidder, or any of its directors 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).

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons 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 ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder 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 (No 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 ☐
4.2.1	If so, furnish particulars:		

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Item	Question	Yes	No
4.3	Was the bidder 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 ☐
4.3.1	If so, furnish particulars:		
4.4	Does the bidder 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 ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder 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 ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……..……..……

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……... ……..

Signature Date

……. ……..

Position Name of Bidder

T2.2 J MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Municipality / Municipal Entity)

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 Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

(a) has been requested to submit a bid in response to this bid invitation;

(b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

(c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However,

communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 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 bid;

(e) the submission of a bid which does not meet the specifications and conditions of the bid; or

(f) bidding with the intention not to win the bid.

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 bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

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.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids 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.

…… ……

Signature Date

…… ……

Position Name of Bidder

T2.3 OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION

T2.3 A DECLARATION OF GOOD STANDING REGARDING TAX T.87

T2.3 B FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES T.88

T2.3 C CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATIONT.89

T2.3 D CERTIFICATE OF NON-COLLUSIVE TENDER T.90

T2.3 D CERTIFICATE OF NON-COLLUSIVE TENDER (CONTINUED)..... T.91

T2.3 E COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND CONSTRUCTION REGULATIONS, 2003..... T.92

T2.3 F REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION AND DEVELOPMENT PROGRAMME T.93

T2.3 G EQUITY OWNERSHIP CLAIMED IN TERMS OF HDI STATUS T.96

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T2.3 A DECLARATION OF GOOD STANDING REGARDING TAX

SOUTH AFRICAN REVENUE SERVICES	Tender No: …….. Closing Date: ……..

DECLARATION OF GOOD STANDING REGARDING TAX

PARTICULARS

1. Name of Taxpayer/Tenderer: .....
2. Trade Name: .....
3. Identification Number: (If applicable) | | | | | | | | | | | | | |
4. Company / Close Corporation registration | | | | | | | | | | |
5. Income Tax reference number: | | | | | | | | | | |
6. VAT registration number: (If applicable) | | | | | | | | | | |
7. PAYE employer's registration number: (If | | | | | | | | | | |
8. Monetary value of tender:

DECLARATION

I, …… the undersigned, the above taxpayer/tenderer, hereby declare that my Income Tax, Pay-As-You-Earn (PAYE) and Value-Added-Tax (VAT) obligations of the above-mentioned taxpayer, which include the rendition of returns and payment of the relevant taxes:

(i) Have been satisfied in terms of the relevant Acts; or
(ii) That suitable arrangements have been made with the Receiver of Revenue,
……..
to satisfy them.*

....

SIGNATURE CAPACITY DATE

PLEASE NOTE: * The declaration (ii) cannot be made unless formal arrangements have been made with the Receiver of Revenue with regard to any outstanding revenue/outstanding tax returns.

T2.3 B FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES

1. FINANCIAL STATEMENTS

I/We agree, if required, to furnish a copy of the latest audited set of financial statement together with my/our Director's and Auditor's report for consideration by the employer.

2. DETAILS OF CONTRACTOR'S BANK ACCOUNT

I/We furnish the following information:

a) Name of Bank: .....

b) Branch of Bank .....

c) Town/city/suburb where bank is situated.....

d) Contact Person at the Bank: .....

e) Telephone number of Bank: Code: ……. Number: ……

f) Account Number: .....

g) Bank rating (include confirmation from bank or financial institution): .....

.....

I/We hereby authorise the Employer to approach the above Bank for a reference.

SIGNED ON BEHALF OF THE TENDERER:.....

DATE: .....

T2.3 C CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATION

The tenderer is to affix to this page either:

- Written proof of his registration with the CIDB as the relevant Category **6CE** or Higher

Or

- Written proof of his application to the CIDB for registration as a contractor in the category listed above.

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this tender not being further considered for the award of the contract.
2. Should this tender be considered for award of the contract, based on proof of submission of application for registration in the appropriate category with the CIDB, and should proof of such subsequent registration not be forthcoming to the employer by the time of award of the contract, then this tender will no longer be considered for the award of the contract.

T2.3 D CERTIFICATE OF NON-COLLUSIVE TENDER

1 IN THE CASE OF A SINGLE CONSTRUCTION CONCERN:

I/We certify that this is a bona fide tender.

I/We also certify that I/We have not done and I/We undertake not to do any of the following at any time before the hour and date specified for the closure of submission of tenders for this contract.

a) Fix or adjust the amount of this tender by or under or in accordance with any agreement or arrangement with any other person;

b) communicate to a person other than the person calling for these tenders the amount or approximate amount of the proposed tender, except when the confidential disclosure of the approximate amount of the tender is necessary to obtain the insurance-premium quotations required for preparation of the tender;

c) cause or induce any other person to communicate to me/us the amount or approximate amount of any rival tender for this contract;

d) enter into any agreement or arrangement with any other person to induce him to refrain from tendering for this contract, or to influence the amount of any tender or the conditions of any tender to be submitted, nor cause or induce any other person to enter into any such agreement or arrangement;

e) offer or pay or give or agree to pay or to give any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any tender or proposed tender for this contract, any action similar to those described above.

In this certificate the term “person” includes any persons, body of persons or association, whether corporate or not, and the term "agreement or arrangement" includes any agreement or arrangement, whether formal or informal and whether legally binding or not.

SIGNED ON BEHALF OF TENDERER: .....

T2.3 D CERTIFICATE OF NON-COLLUSIVE TENDER (continued)

IN THE CASE OF A CONSORTIUM OF CONSTRUCTION CONCERNS:

We certify that this is a bona fide tender.

We also certify that we have not done and we undertake not to do any of the following at any time before the hour and date specified for the closure of submission of tenders for this contract:

a) Fix or adjust the amount of this tender by or under or in accordance with any agreement or arrangement with any person outside this consortium;

b) communicate to a person outside this consortium other than the person calling for these tenders, the amount or approximate amount of the proposed tender, except when the confidential disclosure of the approximate amount of the tender is necessary to obtain insurance premium quotations required for preparation of the tender;

c) cause or induce any person outside this consortium to communicate to us the amount or approximate amount of any rival tender for this contract.

d) enter into any agreement or arrangement with any person outside this consortium to induce him to refrain from tendering for this contract, or to influence the amount of any tender or the conditions of any tender to be submitted, nor cause or induce any person outside this consortium to enter into any such agreement or arrangement;

e) offer or pay or give or agree to give any sum of money or valuable consideration directly or indirectly to any person outside this consortium for doing or having done or causing or having caused to be done in relation to any tender or proposed tender for this contract, any action similar to those described above.

In this certificate the term “person” includes any persons, body of persons or association, whether corporate or not, the term “agreement or arrangement” includes any agreement or arrangement, whether formal or informal and whether legally binding or not, and the term “person outside this consortium” means, when the consortium is a partnership, a person other than a partner or an employee of a partner or the partnership, or when the consortium is a company, a person other than a person or company holdings shares in the consortium, or any employee of such a person, company or the consortium.

SIGNED ON BEHALF OF TENDERER: .....

T2.3 E COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND CONSTRUCTION REGULATIONS, 2003

The tenderer shall attach to this Form evidence that he is registered and in good standing with a compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act (COID) (Act 130 of 1993).

The tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at any time during the 36 months preceding the date of this tender.

SIGNED ON BEHALF OF THE TENDERER: .....

Note to tenderer:

Discovery that the tenderer has failed to make proper disclosure may result in Musina Local Municipality terminating a contract that flows from this tender on the ground that it has been rendered invalid by the Tenderer's misrepresentation.

T2.3 F REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION AND DEVELOPMENT PROGRAMME

M1 General

The employer requires the active participation of the contractor in this aspect of the contract.

Forms RDP 1 (E) to RDP 4 (E) apply to this section and must be completed and submitted with the tender.

The tenderer's submissions under this item will be taken into consideration when evaluating tenders received.

K2 Definitions

M2.1 Contract Participation Goal (CPG)

The value of goods, services and works, excluding VAT, for which the contractor proposes to engage labour or ABEs.

M2.2 Affirmable Business Enterprise (ABE)

A business which adheres to statutory labour practices, is a legal entity, registered with the South African Revenue Service and a continuing and independent enterprise for profit, providing a commercially useful function and

a) which is at least 51 % Owned by one or more Previously Disadvantaged Individuals (PDI) or in the case of a company, at least 51 % of the shares are owned by one or more Previously Disadvantaged Individuals (PDI) and

b) whose management and daily business operations are under the control of one or more of the Previously Disadvantaged Individuals (PDI) who effectively own it provided that during the period for which the business has been operating or the previous three financial years, whichever period is the lesser, the average annual turnover of the business (excluding VAT and any turnover generated in respect of work performed by other parties in a joint venture or a consortium) does not exceed:

1) R10 million in respect of contractors who mainly perform Civil Employer's Agenting Services.

2) R2,5 million in respect of labour-only subcontractors

3) R10 million in respect of Manufacturers

4) R15 million in respect of Suppliers

5) R2,5 million, exclusive of any turnover generated in respect of out-sourced activities which the enterprise does not have the in-house competence and expertise to perform, in respect of professional service providers, and

6) R2,5 million in respect of other service providers, e.g., transport; and that the sum of the average annual turnovers over the same period of all the business concerns which are under the control of Previously Disadvantaged Individuals (PDI) within the business entity and Affiliated Entities does not exceed one and a half (1,5) times the maximum allowable annual average turnover for the particular category of enterprise as set out in (b) above, seeking ABE status.

M2.3 "Historically Disadvantaged Individuals (HDIs)" means all South African Citizens

1. who had no franchise in national elections prior to the introduction of the 1983 and 1993 constitutions;
2. women, or
3. disabled persons

Persons who obtained South African Citizenship after the first democratic election in April 1994, cannot qualify for preference as an HDI.

M2.4 Target values

(a) The values of the following items (excluding VAT) expressed as percentages of the Tender Sum, (excluding VAT) as proposed by the tenderer in his tender. The monetary total of these values shall be the CPG.

In this contract the minimum target values shall be as follows:

Labour Maximisation : **10**%
ABE support : **25**%

(b) The value of the following item expressed as a percentage of the total number of supervisory staff employed on the contract, as proposed by the tenderer in his tender. In this contract the minimum target value shall be:

HDI Supervisory Staff : **10**%

The maximum target values for each category will be the highest of all values submitted in the tenders short-listed for detailed evaluation.

M3 Preferential Procurement Point System Policy

The Procurement Policy to be used is included under section 21(b) of the Supply Chain Management Policy

M4 Contract Participation Performance (CPP)

M4.1 The Contractor's Participation Performance will be measured monthly in order to monitor the extent to which he is striving to reach the Contract Participation Goal (CPG) he proposed in his tender. Failure to reach the CPG will make him liable for a penalty as prescribed in Section C3.3.1.5 of the Preferential Procurement Point System Policy.

M4.2 Monitoring of CPG

Regular returns will be required from the contractor, to be submitted with each payment certificate.

Examples of the forms to be used are illustrated under Annexure C5.1 of this document.

M5 Training

Provision is made in the project specifications for structured training to be provided by the contractor to PDI'S and ABE'S.

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T2.3 G EQUITY OWNERSHIP CLAIMED IN TERMS OF HDI STATUS

1. POINTS TO BE CALCULATED FROM INFORMATION FURNISHED IN PARAGRAPH 2.8.

Ownership Percentage owned Points claimed

Equity ownership by persons who due to the apartheid policy that had been in place, had no franchise in the national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No. 110 of 1983) or the Constitution of the Republic of South Africa,1993 (Act No. 200 of 1993) ("The Interim Constitution")

% .....

Equity ownership **by women** % .....

2. DECLARATION WITH REGARD TO EQUITY

2.1 Name of firm : .....

2.2 VAT registration number : .....

2.3 Company registration number : .....

2.4 TYPE OF FIRM

	Partnership
	One person business / sole trader
	Close corporation
	Company
	(Pty) Limited

[TICK APPLICABLE BOX]

2.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

2.6 COMPANY CLASSIFICATION

	Manufacturer
	Supplier
	Professional service provider
	Other service providers, e.g. transporters, etc.

[TICK APPLICABLE BOX]

2.7 TOTAL NUMBER OF YEARS THE FIRM HAS BEEN IN BUSINESS? ……..

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2.8 List all Shareholders by Name, Position, Identity Number, Citizenship, HDI status and ownership, as relevant. Information to be used to calculate the points claimed in paragraph 1.

						***HDI Status**		
Name	ID Number	Designation in company / organisation	Activity and responsibility in the company / organisation	Date RSA Citizenship obtained	Race e.g. Black, White, Coloured or Indian	No franchise prior to 1983 & 1993 Constitutions	Women	% of business shares in enterprise owned

*Indicate YES or NO

2.9 Consortium / Joint Venture

2.9.1 In the event that preference points are claimed for HDI members by consortia / joint ventures, the following information must be furnished in order to be entitled to the points claimed in respect of HDI member **(to be consistent with paragraph 2.8)**:

						***HDI Status**		
Name	ID Number	Designation in company / organisation	Activity and responsibility in the company / organisation	Date RSA Citizenship obtained	Race e.g. Black, White, Coloured or Indian	No franchise prior to 1983 & 1993 Constitutions	Women	% of business shares in enterprise owned

*Indicate YES or NO:

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2.10 I / we, the undersigned, who warrants that he/she is duly authorised to do so on behalf of the firm certify that points claimed, based on the equity ownership, qualifies the firm for the preference(s) shown and

I / we acknowledge that:

(i) The information furnished is true and correct.

(ii) The Equity ownership claimed is in accordance with the applicable preference point system.

(iii) In the event of a contract being awarded as a result of points claimed, the tenderer may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct.

(iv) If the claims are found to be incorrect, the Musina Municipality may, in addition to any other remedy it may have –

(a) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(b) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(c) impose a financial penalty more severe than the theoretical financial preference associated with the claim which was made in the bid; and

WITNESSES:

1 ....

SIGNATURE(S) of TENDERER(S)

2 .....

DATE: .....

ADDRESS: .....

.....

.....

.....

RDP1(E) SCHEDULE OF LABOUR CONTENT

The Tenderer must complete the table below to reflect the labour force anticipated to be employed on this contract, including labour employed by sub-contractors.

The specified target value is 10%

Note: The full amount of this 10% target value should be obtained from Local Labour content. This 10% labour content shall be from the LOCAL COMMUNITY, the contractors own key, skilled and unskilled personnel will not be counted towards the said 10% of the contract amount minimum labour content.

Type of Labour	Man-hours	Minimum Wage Rate per Unit	Total Wage Cost (Excl VAT)
Permanent Labour			
Temporary Labour			
SMME/HDI's Labour			
		TOTAL	
		PERCENTAGE	

Notes to Tenderer:

(1) Labour is defined as hourly paid personnel.

(2) The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.1.5.

SIGNED ON BEHALF OF THE TENDERER: …….

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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RDP2(E) EMPLOYMENT OF ABE'S

Target values of work to be executed by and goods & services to be procured from ABEs shall be 10%.

Note: The ABEs shall be from the LOCAL COMMUNITY. Should no suitable ABEs be available from the LOCAL COMMUNITY, the following target areas shall be according to the next community levels upwards, being LOCAL MUNICIPALITY AREA, then DISTRICT MUNICIPALITY AREA and then only the LIMPOPO PROVINCE.

Schedule Item No	Name of ABE	Item Description/ Goods & Services to be provided	Value	
			Rands (Excl VAT)	% of Tender Sum (Excl VAT)
TOTAL				

Notes to tenderer:

1. **Regardless whether the tenderer fits the classification of an SMME/PDI, as defined in Section 3.3 of this specification, the tenderer nevertheless retains the obligation to commit to the target values prescribed under Form T2.1 K, item K2.4.**
2. **Tenderers shall insert "unknown" if an SMME/PDI has not been selected prior to tender closing date.**
3. **The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.1.5.**

SIGNED ON BEHALF ON THE TENDERER ……

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

RDP3(E) HDI EQUITY IN PROJECT

The tenderer shall complete the table below

Company Name (In Case of Joint Venture, all JV Partner Names)	Other HDI Equity Share %	Female Equity Share %	Total HDI Equity Share %

Notes to tenderer:

The tenderer may be required to provide audited proof of equity distribution. In the case of public listed companies, the ratios of equity shareholding are to be replaced by the ratio of HDI and female representativity at directorship level.

SIGNED ON BEHALF OF THE TENDERER …….

RDP4(E) HDI SUPERVISORY STAFF

The minimum value of HDI supervisory staff expressed as a percentage of the total number of staff be 30%. Refer Form T2.1 K, item 2.4(b). It is proposed to employ the following salaried personnel on this contract as supervisory staff:

(Note: The Curriculum Vitae of each staff member proposed to be attached to Section T2.3 A)

Staff Category	Number per Category	HDI Status (Yes or No)
TOTALS		

HDIs as percentage of total …… %

Notes to tenderer:

1. **If personnel are hourly paid they cannot be classified as supervisory staff, regardless the nature of their duties.**
2. **The tenderer may be required to provide audited proof that the stated personnel are salaried members of staff or contracted on a monthly fee.**
3. **Examples of relevant personnel are: Site agent, assistant site agent, senior materials technician, senior surveyors and clerks.**

SIGNED ON BEHALF OF THE TENDERER ……

RDP5(E) ABE DECLARATION AFFIDAVIT

It is understood and agreed that should this contract be awarded to me an ABE Declaration Affidavit will be completed by each and every ABE employed by me on this contract and will be submitted to the Employer immediately upon demand by the Employer.

SIGNED ON BEHALF OF THE TENDERER ……

An example of the SMME/PDI Declaration Affidavit is given in Annexure C5.1.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

RDP6(E) GENERIC TRAINING

Name of Training Institution: ……

Name of Programme: ……

Trainer's Name	Qualification	Subject

Notes to tenderer:

Provide details here, or attach hereto, the subjects to be covered and the manner in which the training is to be delivered.

SIGNED ON BEHALF OF THE TENDERER ……

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

RDP7(E) ENTREPRENEURIAL TRAINING

Name of Training Institution: ……

Name of Programme: ……

Trainer's Name	Qualification	Subject

Notes to tenderer:

Provide details here, or attach hereto, the subjects to be covered and the manner in which the training is to be delivered.

SIGNED ON BEHALF OF THE TENDERER ……

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

RDP8(E) EMPLOYER'S AGENTING SKILLS TRAINING

Name of Training Institution: ..... ……

Name of Programme: ……

Trainer's Name	Qualification	Subject

Notes to tenderer:

Provide details here, or attach hereto, the subjects to be covered and the manner in which the training is to be delivered.

SIGNED ON BEHALF OF THE TENDERER ……......

T2.4 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT (*YELLOW PAGES*)

T2.4 A SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE T.109

T2.4 B RATES FOR SPECIAL MATERIALS T-110

T2.4 C ALTERATIONS BY TENDERER T-111

T2.4 D WORKS PREVIOUSLY EXECUTED 112

T2.4 E PRESENT COMMITMENTS 113

T2.4 G CONTRACT PARTICIPATION GOAL (CPG) SCHEDULE: PARTICIPATION OF TARGETED LABOUR T-115

T2.4 H LABOUR UTILISATION T-118

T2.4 I COMPLIANCE WITH OHSA (ACT 85 OF 1993) T-121

T2.4 J PLANT AND EQUIPMENT T-123

T2.4 K SUB-CONTRACTORS T-124

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T2.4 N PROSPECTIVE TENDERER'S REGISTRATION FORM /CHANGE OF REGISTRATION FORM T-131

T2.4 O JOINT VENTURE AGREEMENT T-133

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T2.4 T DECLARATION OF INTEREST T-139

T2.4 U BANKING DETAILS T-140

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T2.4 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT

T2.4 A SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

The tenderer shall state his estimated value of the work to be completed every month, based on his preliminary programme and his tendered unit rates, in the table below. The amounts for contingencies and contract price adjustment shall not be included.

MONTH	**VALUE (INCLUDING VAT)**
1	R ……
2	R ……
3	R ……
5(FINAL CERTIFICATE)	R ……
TOTAL: R…… **(EXCLUDING CONTINGENCIES AND CONTRACT PRICE ADJUSTMENT)** **DURATION.....(MONTHS)**	

SIGNED ON BEHALF OF TENDERER: .....

T2.4 B RATES FOR SPECIAL MATERIALS

Only bitumen products will be dealt with as a special material in terms of sub-clause 46.3 of the General Conditions of Contract. All bitumen products as indicated in the contract data must be stated in the list below.

The rates and prices for the special materials shall be furnished by the contractor, which rates and prices shall exclude VAT but shall include all other obligatory taxes and levies.

The Compiler should state the Base Month.

SPECIAL MATERIALS	UNIT *	RATE OR PRICE FOR THE BASE MONTH

* Indicate whether the material will be delivered in bulk or in containers.

When called upon to do so, the contractor shall substantiate the above rates or prices with acceptable documentary evidence from the applicable refinery supplying the bitumen.

SIGNED ON BEHALF OF TENDERER:.....

T2.4 C ALTERATIONS BY TENDERER

Should the Tenderer desire to make any departures from or modifications to the General or Special Conditions of Contract, the Specifications, the Schedule of Quantities or the Drawings, or to qualify his/her tender in any way, he/she shall set out his/her proposals clearly hereunder or alternatively state them in a covering letter attached to his tender and referred to hereunder, failing which the tender will be deemed to be unqualified.

Page	Clause or Item

SIGNATURE OF TENDERER: ..... DATE: .....

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.4 D WORKS PREVIOUSLY EXECUTED

The following is a statement of major relevant works successfully executed by myself/ourselves in recent years:

Employer	Engineer *	Nature of Works	Value of Works	Duration and Completion Date

Failure to detail the required information, shall signify that the tender is submitted by an inexperienced tenderer.

*** Add more pages if necessary.**

SIGNATURE OF TENDERER: ..... DATE: .....

***** State firm, contact person and telephone number.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.4 E PRESENT COMMITMENTS

Employer	Consulting Engineer *	Nature of Works	Value of Works	Duration and Completion Date

*** Add more pages if necessary.**

SIGNATURE OF TENDERER: ..... DATE: .....

* State firm, contact person and telephone number.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.4 F SUPERVISORY AND SAFETY PERSONNEL

PREVIOUS EXPERIENCE ON WORKS OF A SIMILAR NATURE DURING THE LAST **TEN** YEARS

Name	% Time on Site	Position (Current)	Service (Years)	Name of Project And year executed	Value of Works	Position Occupied
Contracts Manager						
Contractor's Site Agent						
Contractor's Foremen						
Construction Health and Safety Officer						

Tenderers shall indicate the percentage of working time these persons will be engaged on site. Tenderers are required to provide copies of curriculum vitae's of all supervisory and safety personnel.

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 G CONTRACT PARTICIPATION GOAL (CPG) SCHEDULE: PARTICIPATION OF TARGETED LABOUR

1. DEFINITIONS

The following definitions shall apply to this schedule:

1.1 Targeted labour

Individuals, employed by the Contractor or approved SMME/ABE subcontractors in the performance of the contract, who are defined as the target group in the contract and who permanently reside in the target area or who are recognized as being residents of the target area on the basis of identification and association with and recognition by the residents of the target area.

1.2 Target Group

For this project the contract does not specify the target group based on gender, age or disability. However, specifically excluded from the Target Group is the Contractor's own staff, unless such staff are also from the Target Area.

1.3 Target Area

The target area is defined as the area resorting under the Musina Local Municipality Areas, in which the project is located.

2. CONDITIONS ASSOCIATED WITH THE GRANTING OF CPG CREDITS

The Tenderer, undertakes to:

(1) engage Targeted Labour in accordance with the provisions of the SANS 1914-5 as varied in Section 3 hereunder;

(2) accept the sanctions set out in Section 4 below should such conditions be breached; and

(3) complete the Tendered Contract Participation Goal contained in section 5 of this schedule.

3. VARIATIONS TO THE TARGETED CONSTRUCTION PROCUREMENT SPECIFICATION SANS 1914-5

The variations to SANS 1914-5 are set out below. Should any requirements of the variations conflict with requirements of SANS 1914-5, the requirements of the variations shall prevail:

- 3 Requirements
- 3.1 Contract participation goal

ADD THE FOLLOWING TO 3.1.1:

"Targeted labour shall be engaged in the performance of the contract to the value of …….% (insert %) of the Net Amount as defined in 2.6 of SANS 1914-5."

4. SANCTIONS

In the event that the Tenderer fails to substantiate that any failure to achieve the Contract Participation Goal was due to quantitative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, it shall be liable to pay to the Employer a financial penalty calculated in the following manner:

$$P = 1.0 \times \frac{(D - Do)}{(100)} \times N_A$$

where:

D = tendered Contract Participation Goal percentage

Do = the Contract Participation Goal which the Employer's representative based on the credits passed, certifies as being achieved upon completion of the Contract

NA = Net Amount (Actual contract expenditure, excluding VAT)

P = Rand value of penalty payable.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

5. TENDERED CONTRACT PARTICIPATION GOAL (minimum set-aside on this contract is *7.5*%)

I/we hereby tender a Contract Participation Goal of ……..….% for the Participation of Targeted Labour.

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the tenderer, confirms that he/she understands the conditions under which such Contract Participation Goal is approved and confirms that the tender satisfies the conditions pertaining to the Contract Participation Goal for the Participation of Targeted Enterprises.

SIGNATURE: ..... NAME: .....

DULY AUTHORISED TO SIGN ON BEHALF OF CONTRACTOR: .....

T2.4 H LABOUR UTILISATION

Labour Categories - Definitions

NOTE: These definitions serve as a guideline to complete the following table and will in no respect alter the Project Specifications or Standardised Specifications.

1. General Foreman/Foreman

An employee who gives out work to and directly co-ordinates and supervises employees. His/her duties encompass any one or more of the following activities:

(a) Supervision

(b) Maintaining discipline

(c) Ensuring safety on the workplace

(d) Being responsible to the Contractor for efficiency and production for his/her portion of the works

(e) Performing skilled work, whether in an instructional capacity or otherwise.

2. Charge hand

An employee engaged in any one or more of the following activities:

(a) Being primarily employed in a supervisory capacity, but who may also be doing the work of an artisan

(b) Giving out work to other employees under his/her control and supervision

(c) Ensuring safety on the workplace

(d) Maintaining discipline

(e) Being directly responsible to a general foreman or foreman or the Contractor or the Contractor's representative for efficiency and production for his/her portion of the works.

3. Artisan

An employee who has successfully completed all prescribed courses at a practical institutional training centre for a particular trade and who has successfully completed the on-site period of training as prescribed and who has successfully passed the prescribed trade tests.

4. Team Leader

An employee engaged in any one or more of the following activities:

(a) Being employed in a supervisory capacity, but who may also be doing the work of a skilled person

(b) Giving out work to other employees under his control and supervision

(c) Maintaining discipline

(d) Being directly responsible to a Charge hand or a foreman or a general foreman or the employer's authorised representative for efficiency and production for his portion of the works.

5. Skilled Employee

An employee engaged in an ancillary trade or an assistant artisan.

6. Semi-Skilled Employee

An employee with any specified skills, an apprentice or a trainee-artisan.

7. Unskilled Employee

An employee engaged on any task or operation not specified above.

8. Imported Employee

Personnel permanently employed by Contractor.

9. Local Employee

Temporary workforce employed through Labour Desk.

Note: Man-Days table on next page.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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MAN DAYS

Categories	No. of Man Days	
	Imported	Local
1. Contracts Manager		
2. Site Agent		
3. Foreman/Supervisors (specify type)		
3.1		
3.2		
3.3		
4. Safety Inspectors (specify type)		
4.1		
4.2		
5. Charge hands		
6. Artisans		
7. Operators/Drivers		
8. Clerks/Storeman		
9. Team Leader		
10. Skilled Labour		
11. Semi-skilled Labour		
12. Unskilled Labour		

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 I COMPLIANCE WITH OHSA (ACT 85 OF 1993)

Tenderers are required to satisfy the Employer and the Engineer as to their ability and available resources to comply with the above by answering the following questions and providing the relevant information required below.

1. Is the Contractor familiar with the OHSA (ACT 85 OF 1993) and its Regulations? YES / NO

2. Who will prepare the Contractors Health and Safety Plan? (Provide a copy of the person/s curriculum vitae/s or company profile).

   .....

3. Does the Contractor have a health and safety policy? (If yes, provide a copy). YES / NO
   How is this policy communicated to all employees?

   .....

4. Does the Contractor keep records of safety aspects of each construction site? YES / NO
   If yes, what records are kept?

   .....

5. Does the Contractor conduct monthly safety meetings? If yes, who is the chairperson of the meeting, and who attends these meetings? YES / NO

   .....

6. Does the Contractor have a safety officer in his employment, responsible for the overall safety of his company? YES / NO

If yes, please explain his duties and provide a copy of his CV.

.....

.....

7. Does the Contractor have trained first aid employees? If yes, indicate who. YES / NO

.....

8. Does the Contractor have a safety induction training programme in place? YES / NO
(If yes, provide a copy).

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 J PLANT AND EQUIPMENT

1. Major Plant and Equipment available for this Contract:

Quantity	Size, Description, Capacity, etc

2. Major Plant and Equipment that will be acquired for this contract if my/our tender is accepted:

Quantity	Size, Description, Capacity, etc

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 K SUB-CONTRACTORS

The tenderer shall list below any subcontractors he/she intends to employ to carry out part(s) of the Works.

The acceptance of this tender shall not be construed as being approval of all or any of the listed subcontractors. Should any or all of the subcontractors be not approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding in the event of a subcontractor not listed below being approved by the Employer.

Company	Portion of Contract	Approx. Value

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 L SITE INSPECTION CERTIFICATE

This is to certify that..…….(Tenderer) of……...…….(address)

was represented by the person(s) named below at the compulsory meeting held for all tenderers at ……(location) on……...(date), starting at…….We acknowledge that the purpose of the meeting was to acquaint ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for us to take account of everything necessary when compiling our rates and prices included in the tender. Particulars of person(s) attending the meeting:

Name ……

Signature…… Capacity……...

Attendance of the above persons at the meeting is confirmed by the employer's representative/ engineer, namely:

Name…….. Signature……

Capacity…….. Date & Time……...……...

T2.4 M AUTHORITY OF SIGNATORY

With reference to Clause 2.13.4 of the Tender Data, Part T1.1, I/we herewith certify that this tender is submitted by: *(Mark applicable block)*

(a) A company, and attach hereto a certified copy of the required resolution of the Board of Directors ☐

(b) A partnership, and attach hereto a certified copy of the required resolution by all partners ☐

(c) A close corporation, and attach hereto a certified copy of the required resolution of the Board of Officials ☐

(d) A one-man business, and attach hereto certified proof that I am the sole owner of the business submitting this tender ☐

(e) A joint venture, and attach hereto: ☐

- An notarially certified copy of the original document under which the joint venture was constituted

- Certified authorisation by the participating members of the undersigned to submit tenders and conclude contracts on behalf of the joint venture

SIGNATURE OF TENDERER: …… DATE:……

T2.4 N PROSPECTIVE TENDERER'S REGISTRATION FORM /CHANGE OF REGISTRATION FORM

The Main Tenderers, Subcontractors or Joining Entities listed in Table 1 of the Schedule No 7 must complete this form despite the fact that they must register as a Registered Tenderer separately.

All Tenderers (Main Contractor, Subcontractors or Joining Entities) intending to tender, or a Registered Tenderer who's registration information has changed in the meantime, must complete this form and submit it to the client not later than 7 days before the closing of the relevant tender.

* **Complete in full (indicate N/A where not available or applicable) and indicate if the information is submitted for the first time (F), it is unchanged (U) or has changed (C) since the previous submission.**

- Name of Business (or person, in case of goods/services provided by a person:

  ..... ( )*

- Official physical address of business, e-mail, telephone and fax numbers:

  Address: ..... ( )*

  e-mail: ..... ( )*

  Telephone: ..... ( )*

  Fax: ..... ( )*

- Electricity account no. if a local business: ..... ( )*
- Type of business (Company, cc, etc): ..... ( )*
- Main business activity (Stationary Dealer, Building Contractor, etc):

  ..... ( )*

- Estimated annual turnover (to remain confidential): R ..... ( )*
- Full name of controlling shareholder if not a one-man business (to remain confidential): ( )*

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

- Equity held by HDI's in the above-mentioned business:

Full Name	ID No	Race	Sex (M/F)	Age	Disability Status	Personal Tax No	Equity Ownership %

I, the owner/manager of the above-mentioned business declare that the above-mentioned information is complete and correct, and that I am fully aware of the penalty that will apply if the tenders are allocated to the above-mentioned business on its own or as a joining entity, based on wrong information submitted above.

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 O JOINT VENTURE AGREEMENT

The following legal business entities agree to deliver the services and/or goods as required under this Contract as a Joint Venture as follows:

Name and Addresses of Joint Venture: …….

…….

…….

Consisting of the following businesses (Joining Entities)

NAME JOINING ENTITY	TAX No	PROPORTIONAL PAYMENT THAT WILL BE RECEIVED UNDER THIS CONTRACT
.....	.....	.....%
.....	.....	.....%
.....	.....	.....%
.....	.....	.....%
.....	.....	.....%

The above-mentioned Joint venture will execute the Contract under the management of (full name)

.....

who is an employee of (name of joining entity) .....;

and in accordance with any further agreements as attached to this document, titled .....

and dated ……..(if applicable).

Bank guarantees and retention money (where required) will be provided or paid by (name of joining entity)

.....

who will be responsible for the fulfilment of the retention obligations (where required) asset out in the Contract Document.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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Signed by the duly authorized representatives of the above-mentioned Joint Entities:

JOINING ENTITY AND POSITION	FULL NAME (Position)	SIGNATURE	DATE
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

WITNESSES: 1. ....

2. ....

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 P PREFERENTIAL PROCUREMENT

List all partners, proprietors and shareholders and complete the table.

Name	Proportional percentage contribution only if a Joint Venture (1*)	HDI			% Owned (5*)	Other Specific Goals	
		No franchise prior to elections (2*)	Women (3*)	Disabled (4*)		Joint venture with local SMME (6*)	Located in MUSINA LOCAL MUNICIPALITY (7*)

* Notes: (1) Joint Venture agreement in Section T 2.2 of this document.

(2) States Yes or No.

(3) States Yes or No.

(4) States Yes or No.

(5) Indicate percentage Equity Ownership.

(6) States Yes or No.

(7) States Yes or No.

Total HDI Equity Ownership (EP) ..... %

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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Tender adjudication points claimed for Equity ownership of HDI's within the enterprise:

$$\textbf{NEP} = \frac{\textbf{6 x EP}}{\textbf{100}} = \frac{\textbf{6 x \quad \%}}{\textbf{100}}$$

NEP = ……

Calculation of preferential points:

TPP = NEP + L(Locality)

Where:

TPP = Total Preference Points scored

NEP = Points scored for Equity Ownership

L = Points scored for being located in Musina Local Municipality.

TPP = ……. + ……. =……..

SIGNATURE OF TENDERER: ..... DATE: .....

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.4 Q AFFIDAVIT

Affidavit to be completed by every member of a company, closed corporation, trust, partnership or other business entity, claiming preference points regarding their HDI-status:

1. I, the undersigned ....., hereby
(Full name and surname)

certify that I am a ..... of the tenderer.
(Member, Director, Partner, Owner)

2. I furthermore certify that I personally hold ……...% (per cent) equity shares in the above mentioned business venture and are actively involved in the management and control of the business.

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

……
SIGNATURE

I certify that the deponent has acknowledge that he/she knows and understands the contents of this declaration.

This declaration has been sworn/affirmed before me at …….

on this …… day of ……..……..20……

…… **STAMP:**
COMMISSIONER OF OATHS

I, THE UNDERSIGNED ……., ACTING IN MY CAPACITY AS

THE COMPANY/CORPORATION/BUSINESS VENTURE: …….

……..
Hereby gives Musina Local Municipality and its delegates the right to inspect any documents in our possession pertaining to the verification of information reflecting the equity held in our company/corporation/ business venture.

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

……
SIGNATURE

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

T2.4 S AFFIDAVIT

Affidavit to be completed by every member of a company, closed corporation, trust, partnership or other business entity, claiming preference points regarding their HDI-status:

1. I, the undersigned ……..……..., hereby
(Full name and surname)

certify that I am a ……..…… of the tenderer.
(Member, Director, Partner, Owner)

2. I furthermore certify that I personally hold ……..% (per cent) equity shares in the above mentioned business venture and are actively involved in the management and control of the business.

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

……
SIGNATURE

I certify that the deponent has acknowledge that he/she knows and understands the contents of this declaration.

This declaration has been sworn/affirmed before me at ……..

on this ……..…… day of ……..……..20……

……
COMMISSIONER OF OATHS

STAMP:

I, THE UNDERSIGNED ……..……., ACTING IN MY CAPACITY AS

THE COMPANY/CORPORATION/BUSINESS VENTURE: ……

……..
Hereby gives Musina Local Municipality and its delegates the right to inspect any documents in our possession pertaining to the verification of information reflecting the equity held in our company/corporation/ business venture.

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

……
SIGNATURE

T2.4 T DECLARATION OF INTEREST

Tenderers are to satisfy the Employer and the Engineer to their independence of service in the state as well as proof prohibiting them from doing business with the private sector by answering the following questions and providing the relevant confirmation required below:

		YES	NO
(1)	Whether he/she is in the service of the state, or has been in the service of the state in the previous twelve months	❑	❑
(2)	In the event that the provider is not a natural person, whether any of its directors, 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	❑	❑
(3)	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	❑	❑
(4)	Proof that his name does not appear on a database maintained by the national treasury as a person prohibited from doing business with the private sector	❑	❑

SIGNATURE OF TENDERER: ..... DATE: .....

T2.4 U BANKING DETAILS

Bank Name: ……

Account Holder's Name: ……

Account Number: ……

Branch Code: ……

Contact Person: ……

Contact Number: ……

SIGNATURE OF TENDERER: .....

SIGNED ON BEHALF OF: .....

DATE: .....

T2.4 V RATES FOR SPECIAL MATERIALS

Each material dealt with as a special material in terms of sub clause 49(3) of the general conditions of contract is stated in the list below. The provisions of the contract price adjustment schedule of the general conditions of contract shall apply to such special materials. The rates and prices for the special materials shall be furnished by the tenderer, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies.

SPECIAL MATERIAL	UNIT	DELIVERY BULK/CONTAINER *	RATE OR PRICE FOR THE BASE MONTH

* Indicate whether the material will be delivered in bulk or in containers.

When called upon to do so, the contractor shall substantiate the above rates or prices with acceptable documentary evidence.

SIGNATURE OF TENDERER: ..... DATE: .....

MUSINA LOCAL MUNICIPALITY

TENDER NUMBER 17-2023/24

FOR

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

PORTION 1: TENDER

PART T2: RETURNABLE DOCUMENTS AND SCHEDULES

PART T2.5: RETURNABLE DOCUMENTS CHECKLIST

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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T2.5 RETURNABLE DOCUMENTS CHECKLIST

The following information MUST be completed in full and/or attached to the tender document:

RETURNABLE DOCUMENT	YES	NO
1. COMPLETE THE DOCUMENT WITH A BLACK INK, INITIAL WHERE ALTERED AND INITIAL EVERY PAGE, COMPLETE FORM OF OFFER.		
2. COMPANY REGISTRATION DOCUMENT		
3. ID COPIES COMPANY DIRECTORS: CERTIFIED.		
4. ORIGINAL SIGNATORY AUTHORISATION LETTER ON A COMPANY LETTER HEAD.		
5. VALID TAX CLEARANCE CERTIFICATE OR SARS PIN		
6. COMPLIANT CENTRAL SUPPLIER DATABASE, JV SHOULD SUBMIT FOR BOTH COMPANIES		
7. CIDB, JV SHOULD SUBMIT CONSOLIDATED CIDB		
8. B-BBEE CERTIFICATE: SANAS ACCREDITATION, JOIN VENTURES TO SUBMIT A CONSOLIDATED BBBEE CERTIFICATE: CERTIFIED OR SWORN AFFIDAVIT.		
9. LETTER OF GOOD STANDING: CERTIFIED		
10. RECENT ORIGINAL STAMPED LETTER FROM THE BANK WITH RATING		
11. COMPANY AND DIRECTORS PROOF OF MUNICIPAL ACCOUNT FOR WATER AND LIGHTS ARE NOT IN ARREARS; AND SHOULD NOT BE OLDER THAN 3 MONTHS/ RECENT AND ORIGINAL PROOF OF RESIDENCE FROM TRADITIONAL AUTHORITY OR VALID LEASE AGREEMENT ACCOMPANIED BY RECENT PROOF OF PAYMENT FOR MUNICIPAL RATES AND TAXES OF THE LESSOR		
12. PROGRAM OF WORKS, SCHEDULE OF MONTHLY EXPENDITURE		

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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RETURNABLE DOCUMENT	YES	NO
13. JOIN VENTURE AGREEMENT: WHERE APPLICABLE • CIDB CONSOLIDATED • CONSOLIDATED B-BBEE CERTIFICATE / SPECIFIC GOALS DOCUMENTS		
14. COMPLETE THE DOCUMENT WITH A BLACK INK, INITIAL WHERE ALTERED AND INITIAL EVERY PAGE, COMPLETE FORM OF OFFER.		
15. SITE INSPECTION CERTIFICATE		

Reasons for non-compliance:

.....

.....

Contact Details:

Office Phone No: .....

Office Fax No: .....

Cell phone No: .....

Name in Capital (block) Letters .... **Signature** ……..

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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THE CONTRACT

PART C1	AGREEMENT AND CONTRACT DATA
PART C2	PRICING DATA
PART C3	SCOPE OF WORKS
PART C4	SITE INFORMATION
PART C5	ANNEXURES

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PART C1: AGREEMENT AND CONTRACT DATA (WHITE PAGES).....C.3

C1.1 FORM OF OFFER AND ACCEPTANCE.....C.3

C1.2 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 85 OF 1993 AND APPOINTMENT AS MINE MANAGER IN TERMS OF SECTION 3(1)(A) OF MINE HEALTH AND SAFETY ACT 29 OF 1996. .....C.7

C1.3 PERFORMANCE GUARANTEE C.12

C1.4 CONTRACT DATA C.15

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PART C1: AGREEMENT AND CONTRACT DATA (WHITE PAGES)

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:`

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FOR THE CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE .

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the tender 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 PRICE INCLUSIVE OF VALUE ADDED TAX IS (CONTRACT PRICE)

.....

.....

.....

Rand (in words); ..... (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 ....

for the tenderer ....

(Name and address of organization)

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Name and signature of witness ..... Date .....

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:

PARTC1 Agreements and contract data, (which includes this agreement)

PART C2 Pricing data

PARTC3 Scope of work

PARTC4 Site information

PARTC5 Annexures

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender 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 agreement. No amendments to or deviations from said documents are valid unless contained in this schedule, which must be signed by the authorised representative(s) of both parties.

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 bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five days of the

date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signature(s) ....

Name(s) ....

Capacity ....

for the Employer.....

(Name and address or organization)

Name and signature of witness ..... ……..

Date:…….. .....

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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Schedule of Deviations

Item	Deviation Details

By the duly authorised representatives signing this schedule of deviations, 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 tender 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.

For the Contractor:

Signature(s) ....

Name(s) ....

Capacity ....

.....

(Name and address of organization)

Name and signature of witness ..... Date: .....

For the Employer:

Signature(s) ....

Name(s) ....

Capacity ....

.....

(Name and address of organization)

Name and signature of witness ..... Date:.....

C1.2 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 85 of 1993 AND APPOINTMENT AS MINE MANAGER IN TERMS OF SECTION 3(1)(a) OF MINE HEALTH AND SAFETY ACT 29 of 1996.

This AGREEMENT made at …… on this ……. day of ……. in the year …… between Musina Local Municipality (hereinafter called "the Employer" on the one part, herein represented by …….. in his capacity as …….. and delegate of the Employer and …… (herein after called "the Principal Contractor") of the other part, herein represented by ……..in his capacity as …… ……

WHEREAS the Employer is desirous that certain works be constructed, as stated for in Contract No.:……../……/……..……for (description of contract).....……..…… ……..…… in the ……District of Limpopo Province and has accepted a tender by the Principal Contractor for the construction, completion and maintenance of such works and whereas the Employer and the Principal Contractor have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Principal Contractor with the provisions of the Occupational Health and Safety Act 1993(Act 85 of 1993 and the Construction Regulation, July 2003):

NOW THEREFORE THIS AGREEMENT WITNESS AS FOLLOWS:

1. The Principal Contractor shall execute the work in accordance with the contract documents pertaining to this contract.

2. This Agreement shall hold good from its commencement date, which shall be the date of a written notice from the employer or Employer's Agent requiring him to commence the execution of the Works, to either:

a) the date of the final certificate issued in terms of clause 49 of the General Conditions of Contract for Construction Works 2015 (Second Edition) as

issued b the South African Institution of Civil Employer's Agenting (hereinafter referred to as "the GCC 2015"), as contained in the contract documents pertaining to this contract, or

b) the date of termination of the contract in terms of clause 9.19.2 or 9.3 of the GCC 2015.

3. The Principal Contractor declares himself to be conversant with the following:-

a) All requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act.

i. Section 8: General duties of employers to their employees.

ii. Section 9: General duties of employers and self-employed persons to persons other than employees

iii. Section 37: Acts or omissions by employees or mandatories and

iv. Sub-section 37(2) relating to the purpose and meaning of this Agreement.

v. Construction Regulations 2003, and other safety regulations, as applicable.

b) The procedures and safety rules of the employer as pertaining to the Principal Contractor and to his subcontractors.

4. The Principal Contractor is responsible for the compliance with the Act by his sub-contractors, whether or not selected and/or approved by the employer.

5. The Principal Contractor warrants that all his and his sub-contractors' employees (permanent and temporary) are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 which cover shall remain in force whilst any such employees are present on site. The Principal Contractor shall submit a written report to this effect at each Progress Site Meeting.

6. The Principal Contractor undertakes to ensure that he and/or his sub-contractors and/or their respective employees will at all times comply with the following conditions:

a) The Principal Contractor shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Principal contractor shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Principal contractor obtains such

approval and delegates any duty in terms of Section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.

b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Principal Contractor to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.

c) The Employer hereby obtains an interest in the issues of any formal enquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Principal Contractor and/or his employees and/or his sub-contractors.

Further to the abovementioned, where contracts involve quarries or borrow pits, the following shall be applicable:-

In terms of Section 3(1)(a) of the Mine Health and Safety Act of 1996, The Department of Roads and Transport. shall appoint a manager for its mine/s.

You are hereby appointed as the mine manager for……., with effect from ……. until further notice.

In terms of this appointment you are charged with the functions, duties and responsibilities imposed by the aforementioned Act and its regulations. Without derogating from the duties, functions and responsibilities imposed by this legislation, you are to:

i) Control, manage and direct employees at the Mine (borrow pit or quarry).

ii) Take all reasonable measures to ensure the health and safety of employees and proper discipline at the Mine.

iii) Take all reasonable measures to ensure that the provisions of the Mine Health and Safety Act and its regulations (as may be amended from time to time) are implemented and adhered to at the Mine.

iv) Ensure and maintain a healthy and safe mine environment for all persons.

v) Ensure an adequate supply of health and safety equipment and facilities.

vi) Staff the Mine, with due regard to health and safety.

vii) Provide health and safety training as far as reasonably practicable to all employees.

viii) Initiate, prepare and implement codes of practice, relating to health and safety.

ix) Maintain an effective risk identification and management system.

x) Ensure the effective maintenance of hazard identification and medical monitoring records.

xi) Prepare and or review the Health and Safety Policy for the Mine.

xii) Ensure that an annual medical report is compiled at the Mine, and forwarded to the owner or the appointed owner representative of the Mine.

xiii) Ensure compliance with relevant environmental legislation.

xiv) Assist with implementation and maintenance of the Department of Roads and Transport SHE Management Standards, the Contractor's Compliance Pack and operational procedures.

xv) Enhance a culture of high performance in safety and health.

You are to appoint the prescribed persons to assist you in your duties and functions, and you are hereby authorised and obliged to take all reasonable measures to comply with legislative requirements. You are to ensure that an acting mine manager is appointed when you are to be absent, or on leave for a period longer than five (5) days.

Instructions and procedures are from time to time issued by the board the Department of Roads and Transport, and it will be your responsibility to ensure the implementation and adherence to these instructions and procedures at the Mine.

You are further responsible to ensure that relevant environmental legislative requirements are complied with, including the implementation of all internal procedures and systems to ensure compliance with such legislation.

It would be the responsibility of yourself to report any shortcomings, in relation to the implementation of applicable legislation which you are unable to rectify, immediately in writing to the appointed owner representative. In witness thereof the parties have set their signatures heron in the presence of the subscribing witnesses:

SIGNED FOR ON BEHALF OF THE EMPLOYER/SECTION 4.1 APPOINTEE

……

WITNESS: 1……. 2…….

NAME

(IN CAPITALS) 1……. 2……

DATE: ……

SIGNED FOR AND ON BEHALF OF THE PRINCIPAL CONTRACTOR/MINE MANAGER

……..

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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WITNESS: 1……. 2…….

NAME

(IN CAPITALS) 1……. 2…….

DATE: ……..……. DATE:……...

Copy to: The Chief Inspector - Department of Minerals and Energy

C1.3 PERFORMANCE GUARANTEE

Employer	:	**Musina Local Municipality** **Private Bag x 661** **Musina** **0900**	Contractor	: …….. …….. …….. …….. ……..

Amount of Guarantee: To be equal to **10** percent of the Tender Sum

---

I/WE the undersigned, duly acting on behalf of the Company that is described below, do hereby bind the said Company to the Employer that is described above, as surety or co-principal debtor *in solidum* for the due performance, fulfilment and completion of the Contract by the Contractor that is described above, and we hereby undertake, on behalf of the Company to pay on demand at the above mentioned address

- any loss or damage which the Employer may sustain
- as well as any penalties or claims and legal costs to which the Employer may become entitled by reason of the non-fulfilment or breach of the terms of the Contract by the Contractor

always provided that the liability of the Company under this guarantee shall not exceed the guaranteed amount that is described above.

On behalf of the Company, I/we do hereby renounce all benefits from the legal exceptions *non numeratae pecuniae, non causa debiti excussionis et divisionis* and all other exceptions which might or could be pleaded against the validity of this guarantee, the meaning whereof we declare ourselves to be fully acquainted with.

On behalf of the Company, I/we do hereby agree that this guarantee shall be irrevocable and shall remain in full force and effect during the term of the Contract, either until the date of issue of a Certificate of Completion for the whole or the final portion of the Works by the Engineer, or until any liability of the Contractor which has arisen before such date in terms of the Conditions of Contract has been satisfied, whichever is the later.

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I/we do further agree and declare

- that all admissions and acknowledgements of indebtedness by the Contractor shall be binding on the Company,
- that the indebtedness of the Contractor to the Employer shall at all times be determined and proved by a written certificate of the Chief Executive Officer, or by any other person acting in such capacity,
- that such certificate shall be binding on the Company and shall be conclusive proof of the amount of the Company's indebtedness, and that such certificate annexed to this guarantee will be valid as a liquid document against the Company in a competent court in the Republic of South Africa,
- that the Employer shall, without reference and/or notice to us, have complete liberty of action to act in any manner authorised and/or contemplated by the terms of the Contract, and/or to agree to any modifications, variations or alterations to the Works, or to any extensions of the Due Completion Date for the Works under the Contract, and that the rights of the Employer under this guarantee shall in no way be prejudiced nor the liability of the Company be in any way reduced by reason of any steps or concessions which the Employer may take, make, give, concede or agree to under the Contract.
- that the Employer shall be entitled, without prejudice to any of its rights under this guarantee, to give time to and compound with, release from liability or to make any other arrangement with the Contractor, its assigns, its liquidators or its judicial managers, and that any such actions shall not exonerate the Company from any portion of its liability under this guarantee.
- this guarantee is neither negotiable nor transferable, purports to the payment of money only and should be returned to the Company upon payment, completion or cancellation whichever occurs earlier.

Name of Company: _____

The Company chooses as its *domicilium citandi et executandi,* and for the purpose of the service of any notices and legal processes the following address:

*Address to be entered*_____

THUS DONE AND SIGNED AT _____ on _____ 20_____.

On behalf of the Company _____

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In his capacity as _____

On behalf of the Company _____

In his capacity as _____

In the presence of the following witnesses:

Witness No 1:

_____ _____

Name Signature

Witness No 2:

_____ _____

Name Signature

C1.4 CONTRACT DATA

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract (GCC) for Construction Works, 3rd Edition (2015), (displaying "2nd Print" on the frontispiece); and published by the South African Institution of Civil Engineering, are applicable to this Contract.

The General Conditions of Contract, hereinafter referred to as GCC 2015, are not bound into this document, but are available at the Contractor's expense from the Secretary of the South African Institution of Civil Engineering, Private Bag X200, Halfway House, Midrand, 1685. Each party to the Contract shall purchase its own copy of the correct print edition of the GCC 2015 that applies to this Contract (see Notes on the next page).

NOTES

Note 1

Each item of data below is cross-referenced to the clause in the Conditions of Contract to which it applies.

Note 2

Certain pro-forma forms and pro-forma agreements contained in the GCC 2015 have been adapted for this particular contract. Those pro-forma forms and pro-forma agreements contained in the GCC 2015 do not apply where replaced by similar pro-forma forms and pro-forma agreements in this procurement document.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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CONTRACT DATA

In terms of Clause 1.1.7 of the General Conditions of Contract for Construction Works, 3rd Edition (2015), the following Contract Data apply to this Contract.

The Contract Data consists of two parts. Part 1 contains information provided by the Employer, while Part 2 contains information to be provided by the Contractor.

Part 1: Data provided by the Employer

Clause	Contract Data
1.1.1.5	Add the following to the Clause after the last sentence. "The contact shall come into effect when the employer issues a letter to the contractor stating that his tender has been accepted / the contract has been awarded to the contractor, or upon receipt of the signed contract document by the contractor from the employer."
1.1.1.12	*ADD THE FOLLOWING TO THIS CLAUSE:* "The special non-working days are all South African statutory holidays and as further defined in Clause 5.8.1."
1.1.1.14	*ADD THE FOLLOWING TO THE END OF THIS DEFINITION:* "This Clause shall apply mutatis mutandis to any portion or phase of the Works that may be described in the Scope of Works or in the Contract Data, or agreed subsequently between the Contractor and the Employer, and committed to writing. The time for completion of the Works is indicated in Clause 5.5.1. The Due Completion Date shall be **4** Months"
1.1.1.15	The Employer is **Musina Local Municipality**.
1.1.1.16	The Employers Agent means any Director, Associate or Professional Engineer appointed generally or specifically by the management of the firm **Vutani Consulting Services cc / NaPe Multi Professionals (Pty) Ltd** to fulfil the functions of the Engineer in terms of the Conditions of Contract.

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Clause	Contract Data
1.2	*ADD THE FOLLOWING TO THIS CLAUSE:* "1.2.1.3 Sent by facsimile, electronic or any like communication irrespective of it being during office hours or otherwise. 1.2.1.4 Posted to the Contractor's address, and delivered by the postal authorities. 1.2.1.5 Delivered by a courier service, and signed for by the recipient or his representative.

Clause	Contract Data
	The address of the Employer is: **Musina Local Municipality** **The Municipal Manager** **Musina Local Municipality** **Private Bag X 611** **Musina** **0900** The address of the Engineer is: Physical address: **Vutani Consulting Services cc / NaPe Multi Professionals (Pty) Ltd JV** **79 Compensatie Street** **POLOKWANE** **Limpopo** **0699** Postal address: **P.O. Box 31334** **SUPERBIA** **0759** e-mail address: **admin@vutani.co.za/office@nape-m-p.co.za** Contact numbers: **Tell: +2715 291 1413 / 297 1048** **Cell: +2771 1671497 / +2782 663 7328** **Fax: +2715 291 1017 / 297 1043**
1.3.5	*ADD THE FOLLOWING TO THIS CLAUSE:* "The copyright in all documents, drawings and records (prepared by the Engineer) related in any manner to the Works shall vest in the Employer or the Engineer or both (according to the dictates of the Contract that has been entered into by the Engineer and the Employer for the Works and as accorded by law), and the Contractor shall not furnish any information in connection with the Works to any

<table>
<tr><th>Clause</th><th>Contract Data</th></tr>
<tr><td></td><td>person or organisation without the prior approval of the Employer to this effect.”</td></tr>
<tr><td>3.2.3</td><td>The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following table:
<table>
<tr><th>Delegated to ER*</th><th>Requires EWA*</th><th>GCC Clause No</th><th>Description</th><th>Financial limit per occurrence</th></tr>
<tr><td></td><td>Y</td><td>1.2.1.2</td><td>Change of address</td><td>NA</td></tr>
<tr><td>N</td><td></td><td>2.2.3</td><td>Adverse physical conditions</td><td>NA</td></tr>
<tr><td></td><td></td><td>2.4.1</td><td>Ambiguity in or discrepancy between documents</td><td>NA</td></tr>
<tr><td></td><td>Y</td><td>3.3.1</td><td>Employer’s Agent's appointment and termination</td><td>NA</td></tr>
<tr><td></td><td>Y</td><td>3.3.4</td><td>Employer’s Agent's acting on Employer’s Agent's behalf</td><td>NA</td></tr>
<tr><td></td><td></td><td>3.3.6</td><td>Employer’s Agent's orders or instructions causing dissatisfaction</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.3.1</td><td>Proof of compliance with applicable laws</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.3.2</td><td>Proof of good standing with payments in terms of legislation</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.4.2</td><td>Subcontractor to be approved</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.5.4</td><td>Payment for notices and fees</td><td>R……..…</td></tr>
<tr><td></td><td></td><td>4.7.1</td><td>Fossils, etc. on Site</td><td>NA</td></tr>
<tr><td></td><td>Y</td><td>4.8.2</td><td>Facilities for others</td><td>NA</td></tr>
<tr><td></td><td>Y</td><td>4.9.1</td><td>Removal of Construction Equipment from Site</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.10.1</td><td>Use of Site for Contractor's employees</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.10.2</td><td>Contractor's employee information</td><td>NA</td></tr>
<tr><td></td><td></td><td>4.11.2</td><td>Removal of Contractor's employee from Works</td><td>NA</td></tr>
</table></td></tr>
</table>

Clause	Contract Data				
			4.11.2	Re-employment of Contractor's employee	NA
		Y	4.12.2	Approval of Construction Manager	NA
			5.3.1	Commencement of the Works	NA
			5.6.3	Approval of programme	NA
			5.6.4	Adjustment of programme	NA
		Y	5.7.1	Rate of progress falling behind programme	NA
		Y	5.7.1	Steps taken to expedite progress	NA
			5.7.2	Work at night	R……
		Y	5.7.3	Acceleration of rate of progress	NA
			5.7.3	Payment for acceleration	R……
		Y	5.8.1.1	Work during non-working times	R……
			5.9.1	Instructions and drawings on Commencement Date	NA
			5.9.2	Further instructions and drawings	NA
			5.9.3	Requested instructions and drawings	NA
		Y	5.9.7	Contractor's designs	NA
		Y	5.9.7	Departing from Contractor's designs	NA
		Y	5.11.2	Suspension of the Works	NA
			5.11.6	Proceeding with Works after suspension	NA
	N		5.12.4	Acceleration instead of extension of time	R……
			5.13.2	Reduction in penalty	R……
	N	Y	5.14.1	Work to be completed for Practical Completion	NA
	N	Y	5.14.2	Certificate of Practical Completion	NA
	N		5.14.4	Certificate of Completion	NA
	N		5.16.1	Final Approval Certificate	NA
		Y	6.3.1	Variation orders	R……

Clause	Contract Data				
		Y	6.3.2.1	Confirmation of a Variation Order	NA
			6.4.1	Valuation of a Variation Order	NA
			6.4.1.3	Consultation on valuation of a Variation Order	NA
			6.4.1.4	Dayworks as a Variation Order	R……
		Y	6.4.2	Delivering the valuation of a Variation Order	NA
			6.5.1.3	Construction Equipment rates for dayworks	NA
			6.5.2	Materials for dayworks	R……
			6.5.3	Workmen, materials and Construction Equipment used for dayworks	NA
			6.6.1	Provisional sum work	
			6.6.3	Prime cost work	
			6.7.2	Valuation of the Works	NA
			6.7.3	Measurement of work	NA
			6.8.4	Costs due to changes in legislation	NA
			6.9.3	Plant and materials becoming property of Employer	NA
			6.10.1	Monthly payment certificate	NA
			6.10.4	Delivery of payment certificate	NA
			6.10.7	Correction of previous payment certificate	NA
			6.10.8	Completion payment certificate	NA
			6.10.9	Final payment certificate	NA
			6.11.1	Variations exceeding 15%	
			7.1.1	Unsuitable Construction Equipment	NA
			7.4.1	Samples of materials	NA
			7.4.2	Test specimens	NA
			7.4.3	Tests	NA
			7.4.5	Reports on tests	NA
			7.5.1	Covering up work	NA

Clause	Contract Data				
		Y	7.5.2	Delivery of Plant to Site	NA
		Y	7.5.3	Testing and examining Plant and work	NA
			7.5.5	Uncovering work	NA
		Y	7.6.1	Making good and retesting of Plant	NA
			7.6.2	Plant failing testing	NA
		Y	7.6.3	Removal of improper work	NA
		Y	7.7.1	Search for defects	NA
		Y	7.8.1	Making good of defects	NA
		Y	7.9.1	Work by others during emergency	NA
			8.2.2.2	Damage due to excepted risks	NA
			8.5.1	Reporting accidents	NA
			9.1.5	Termination of Contract	NA
	N	Y	9.2.1	Consultation on breach of Contract by Contractor	NA
	N	Y	9.2.1	Breach of Contract by Contractor	NA
	N	Y	10.1.3	Facts to assess Contractor's claim	NA
	N	Y	10.1.5	Consultation on Contractor's claim	NA
	N	Y	10.1.5	Ruling on Contractor's claim	R……..
	N	Y	10.2.3	Consultation on dissatisfaction claim	NA
	N	Y	10.2.3	Ruling on dissatisfaction claim	NA
	TOTAL FOR CONTRACT				

*The following abbreviations apply to the above table:

ER Engineer's Representative
EWA Engineer's Written Action
N No
NA Not Applicable
Y Yes

Clause	Contract Data
4.1.2	*ADD THE FOLLOWING TO THIS CLAUSE:* "The Contractor shall provide the following to the Engineer for retention by the Employer or his/her assignee in respect of all works designed by the Contractor: 4.1.2.1 A Certificate of Stability of the Works signed by a registered Professional Engineer confirming that all such works have been designed in accordance with the appropriate codes of practice. 4.1.2.2 Proof of registration and of adequate and current professional indemnity insurance cover held by the designer(s). 4.1.2.3 Design calculations should the Engineer request a copy thereof. 4.1.2.4 Engineering drawings and workshop details (both signed by the relevant professional engineer), in order to allow the Engineer to compare the design with the specified requirements and to record any comments he may have with respect thereto. 4.1.2.5 'As-Built' drawings in DXF electronic format after completion of the Works. The Contractor shall be responsible for the design of the Temporary Works."
4.3.1	Compliance with applicable laws. *ADD THE FOLLOWING TO THIS CLAUSE:* "4.3.1.1 The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1977 by the Minister of Labour in Government Notice No R63 of 25 January 2002, as appended to these Contract Data as Annexure B, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers. 4.3.1.2 OHS requirements The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2003 promulgated in terms of Section 43 of the Occupational

Clause	Contract Data
	Health and Safety Act (Act No. 85 of 1993). Without limiting the Contractor's obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan. The Contractor shall submit an approved Health and Safety Plan to the Engineer within 14 days of the Commencement Date.
	4.3.1.3 Contractor's liability as mandatory Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2003, for which he is liable as mandatory. By entering into this Contract it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act. 4.3.1.4 Contractor to notify Employer The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations. 4.3.1.5 Contractor's Designer The Contractor and his/her designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2003 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract."
4.4.4	*ADD THE FOLLOWING TO THIS CLAUSE:*

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TENDER NO: 17-2023/24

Clause	Contract Data
	"The Engineer's consent in respect of any particular subcontractor may be withdrawn at any time should reasonable grounds be given therefore in writing to the Contractor by the Engineer, in which event the Contractor shall forthwith terminate the engagement of that subcontractor on the Works. The withdrawal by the Engineer of his consent in respect of any particular sub-contractor that is engaged in the execution of any portion of the works, including any portions of the Works which are sub-let by the Contractor in accordance with Clause 4.4.3 shall not relieve the Contractor of any of his obligations under the Contract, nor of any of his obligations to sub-let the particular portions of the Works concerned."
4.10	*ADD THE FOLLOWING TO THIS CLAUSE:* "4.10.3 The Contractor shall use local labour in accordance with the requirements contained within the Scope of Work."
5.3.1	*ADD THE FOLLOWING TO THIS CLAUSE:* "The Contractor shall commence executing the works within a period of 22 working days from the date of the written instruction by the Engineer unless otherwise agreed. The documentation required before commencement with Works execution are: • Health and Safety Plan (Refer to Clause 4.3) • A signed Agreement between the Employer and the Contractor for the Works to be completed by the Contractor in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (Act No 85 of 1993) and the Construction Regulations promulgated thereunder (Refer to Clause 4.3). • Proof of payment to the Employer, that the Contractor has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (Refer to Clause 4.3). • Initial programme (Refer to Clause 5.6) • Security (Refer to Clause 6.2) • Insurance (Refer to Clause 8.6) • Cashflow"
5.3.3	Add the following to Clause 5.3.3 after the last sentence: "The Contractor shall not commence with the Works until they have an approved project specific health and safety plan in terms of the Occupational Health and Safety Act 1993: Construction Regulations 2003 and complied with the initial requirements thereof."

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Clause	Contract Data
5.5.1	*ADD THE FOLLOWING TO THIS CLAUSE:* "The time for Completion shall be **4 months** from Commencement Date, including year-end break/s."
5.6.2.6	*ADD THE FOLLOWING TO THIS CLAUSE:* "Commencement date after all documents after all documents are submitted
5.7.1	*ADD THE FOLLOWING TO THIS CLAUSE:* "No such instruction by the Engineer to expedite progress shall be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is entitled to additional compensation, and cites the amount of such compensation or the basis upon which it is to be determined."
5.8.1	The non-working Days are Sundays The special non-working Days are: Statutory public holidays; and All annual year-end shutdown periods as recommended by the South African Federation of Civil Engineering Contractors (SAFCEC), and which commence after the Commencement Date and which commence before the Due Completion Date.
5.13.1	*ADD THE FOLLOWING TO THIS CLAUSE:* "Penalty per day shall be **0.05%** of the total contract value per calendar day."
5.14.1	Practical Completion Replace the last sentence of the second paragraph: "Should the Engineer on the Due Completion Date." with the following: "Should the Engineer not issue such a list within 14 days, Practical Completion shall be deemed to have been achieved on the said fourteenth day."

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Clause	Contract Data
5.14.2	Issue of Certificate of Practical Completion Replace "the Engineer" in the second line with the following: ", the Contractor shall notify the Engineer, who shall inspect the works and the Engineer"
5.14.4	Certificate of Completion Replace "the Engineer" in the second line of the first paragraph with: ", the Contractor shall notify the Engineer, who shall inspect the works and the Engineer"
6.1	*ADD THE FOLLOWING TO THIS CLAUSE:* “Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.”
6.2.1	*ADD THE FOLLOWING TO THIS CLAUSE:* The amount of the guarantee will be 10% of the Purchase Order as per Engineers instruction (including Value Added Tax) at the time that the Guarantee comes into effect. The guarantee shall remain valid until the issue of the Certificate or Certificates of Completion in respect of the whole of the Purchase Order. The Form of Guarantee is appended to the Contract Data as Annexure A. The Guarantee shall be returned to the Contractor within 14 days after the issue of the Certificates or Certificates of Completion in respect of the whole of the Permanent Works as per Purchase Order.”
6.2.2	*DELETE THIS CLAUSE.*
6.8.2	The application of a contract price adjustment will apply to this Contract.
6.3.3	Price adjustment for variations in the cost of special materials is NOT allowed.
6.8.4	*DELETE THE WORDS* “between the Employer and the Contractor”.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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Clause	Contract Data
6.10.1.5	*ADD THE FOLLOWING TO THIS CLAUSE:* "The percentage limit for materials not yet built into the Permanent Works is 80%."
6.10.3	*ADD THE FOLLOWING TO THIS CLAUSE:* "The percentage retention is 10%. The limit of retention money is 5% of the Contract Price at the time of the Guarantee made in terms of the Form of Offer and Acceptance coming into effect."
6.10.4	*IN LINE 3 DELETE THE WORD* "said" *AND INSERT THE WORD* "correct". In the third sentence replace "28" with "35".
6.10.5.3	*ADD THE FOLLOWING TO THIS CLAUSE:* "Defects Liability Period will be 12 months."
6.11.1.3	*IN LINE 2 OF THE SECOND PARAGRAPH DELETE* "15 %" *AND REPLACE IT WITH* "25 %".
8.6.1.3	*ADD THE FOLLOWING TO THIS CLAUSE:* "Limit of indemnity shall be **R2 million** per event, the number of events being unlimited."
8.6.1.5	*ADD THE FOLLOWING TO THIS CLAUSE:* "In addition to the insurance required in terms of General Conditions of Contract Clause 8.6.1.1 to 8.6.1.3 the following insurance is also required: Insurance cover against any damages or loss against production due to political unrest. The Employer shall not be held responsible for such damages or losses."

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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Clause	Contract Data
8.6.6	*ADD THE FOLLOWING TO THIS CLAUSE:* "Proof of insurance shall be submitted to the Employer prior to Commencement of the Works (Clause 5.3.1), and copies of the policies and proof of due payment of all premiums shall be presented to the Employer."
9.2.1.3.7	*DELETE THE FIRST TWO LINES OF THE CLAUSE AND INSERT THE FOLLOWING:* "The Contractor furnished inaccurate information in the Returnable Documents or Returnable Schedules forming part of the Contract,"
10.7.1	*CHANGE THE WORDING OF THE FIRST SENTENCE OF THIS CLAUSE TO READ AS FOLLOWS:* This Contract provides for the determination of disputes by arbitration.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Part 2: Data provided by the Contractor

Clause	Contract Data
1.1.1.9	The name of the Contractor is: .....
1.2.1.2	The Contractor's address for receipt of communications is: Physical address: Postal address: e-mail address: Contact numbers:
1.2.1	The security to be provided by the Contractor shall be: Performance guarantee of 10% of the Contract Sum.
6.5.1.2.3	The percentage allowance to cover overhead charges is ……. %.
6.8.3	The variation in cost of special materials is as per Form T2.2.18

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

C1.5 FORM AGREEMENT IN TERMS OF THE MINE HEALTH AND SAFETY ACT, (ACT No. 29 OF 1996) AS AMENDED BY THE MINE HEALTH AND SAFETY AMENDMENT ACT (ACT No. 72 OF 1997)

THIS AGREEMENT made at ……on this the ……..day of ……..in the year…….. between MUSINA LOCAL MUNICIPALITY (hereinafter) called "the Employer") of the one part, herein represented by ……..…… in his capacity as ……..and delegate of the Employer in terms of the Employer's standard powers of delegation pursuant to the provisions of Act No. 7 of 1998 and ……in his capacity as …….. and being duly authorised by virtue of a resolution appended hereto as Annexure A.

WHEREAS the Employer is desirous that certain works be constructed as stated above and has accepted a tender by the Contractor for the construction, completion and maintenance of such works and whereas the Employer and the contract have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Contractor with the provisions of the Mine Health and Safety Act (Act 29 of 1996); as amended by the Mine Health and Safety Amendment Act (Act No. 27 of 1997)), the Mineral Resources and Petroleum Development Act (Act No. 28 of 2002) and all the applicable Regulations of the said Acts.

NOW THEREFORE THIS AGREEMENT WITNESS AS FOLLOWS:

1. The Contractor declares himself conversant with all the requirements, regulations and standards of the said Acts and Amendments of the Acts, as well as with the procedures and safety rules of the Employer as pertaining to the Contractor and all his Sub-contractors.
2. The Contractor accepts responsibility for compliance with all the requirements, regulations and standards of the Acts and Amendments of the Acts, as well as with the procedures and safety rules of the Employer as pertaining to the Contractor and all his Sub-contractors.
3. The Contractor, as the appointed Mine Manager of the Employer (Owner of the mine / borrow pit / quarry), shall undertake all the duties and accept all the responsibilities of the owner in compliance with the said Acts, Amendments and its Regulations.
4. The Contractor, as the appointed Mine Manager of the Owner, shall in turn appoint a Sub-Ordinate Mine Manager, a Responsible Mine Surveyor/

Competent Person and a Competent Person in Charge of Machinery who shall undertake the duties as delegated to them in terms of their appointments.

5. The Contractor shall himself obtain the necessary authorisation for mining, quarrying, blasting and crushing for all the borrow pit sites.

6. The Contractor shall assume responsibility for the Environmental Management Programme (EMP) in respect of all the borrow pit sites and quarries (mines) and shall ensure that the sites are rehabilitated at the conclusion of the contract.

7. The Contractor shall comply with all the provisions and requirements as set out in the EMP and in the said Acts, Amendments and its Regulations.

8. This Agreements shall hold good from the date of signature until the date on which a Closure Certificate is issued by the Mining Authority (Department of Minerals and Energy)

In witness thereof the parties have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED ON BEHALF OF THE EMPLOYER .....

AS WITNESS:

1. ..... 2. .....

NAME (Print): ..... NAME (Print): .....

SIGNED ON BEHALF OF THE CONTRACTOR .....

AS WITNESS:

1. ..... 2. .....

NAME (Print): ..... NAME (Print): .....

C1.6 APPOINTMENT IN TERMS OF SECTION 4 OF THE MINE HEALTH AND SAFETY ACT, (ACT No. 29 OF 1996) AS AMENDED BY THE MINE HEALTH AND SAFETY AMENDMENT ACT (ACT No. 72 OF 1997)

I, ……..…… in my capacity as Municipal Manager of the Employer, MUSINA LOCAL MUNICIPALITY who is the owner of the Mine(s) state name(s) or state "to be worked under the requirements of the above mentioned Acts, hereby, in terms of Section3(1) of the Act (as amended) appoint ……..……in his capacity as …….. of the Contractor, …….. of address:…… and contact number:…… to perform all functions entrusted to the Employer by Sections 2 and 3 of the Act (as amended) for all the borrow pits on the project no.:…….for

……

……

SIGNED: .....

DATE: .....

WITNESS: 1. ..... 2. .....

NAME(Print):1. ..... 2. .....

I,…….. having been appointed in terms of Section 4 of the Act, as amended to perform all functions entrusted to the Employer by Sections 2 and 3 of the act, as amended, hereby appoint …… in his capacity as ……of the Contractor……..as Manager, who, in terms of Section 3 of the Act, as amended, will be responsible for the day to day management and operation of the mine(s).

SIGNED: .....

DATE: .....

WITNESS: 1. ..... 2. .....

NAME (Print):1. ..... 2. .....

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

C1.7 MINE HEALTH AND SAFETY ACT No. 29 OF 1996 AND AMENDMENT ACT No. 72 OF 1997

DEFINITIONS:

Section 102 of the Mine Health and Safety Act refers.

"mine" means, when –

(a) "used as a noun-

(i) any borehole, or excavation, in any tailing or in the earth, including the portion of the earth that is under the sea or other water, made for the purpose of searching for or winning a mineral, whether is being worked or not, or

(ii) any other place where a mineral deposit is being exploited, including the mining area and all buildings, structures, machinery, mine dumps, access roads or objects situated on or in that area that are used or intended to be used in connection with searching, winning, exploiting or processing of a mineral, or for health and safety purposes. But, if two or more excavations, boreholes or places are being worked in conjunction with one another

(iii) a works; and

b) used as a verb, the making of any excavation or borehole referred to in paragraph (a) (i), or the exploitation of any mineral deposit in any other manner, for the purpose of winning a mineral including prospecting in connection with the winning of a mineral.

a) whether that substance is in solid, liquid or gaseous form;

b) that occurs naturally in or on the earth, in or under water or in tailings, and

c) that has been formed by or subjected to a geological process.

"processing" means the recovering, extracting, concentrating, refining, calcimining, classifying, crushing, milling, screening, washing, reduction, smelting or gasification or any mineral, and "process" has a similar meaning

"works" means any place, excluding a mine, where any person carries out-

a) The transmitting and distributing to another consumer of any form of power from a mine, by the owner thereof, to the terminal point of bulk, to the power supply meter on any such other consumer's premises, or

b) Training at any central rescue station, or

c) The making, repairing, re-opening or closing of any subterranean tunnel, or

d) Any operations necessary in connection with any of the operational listed in this paragraph.

C1.8 AGREEMENT IN TERMS OF THE MINE HEALTH AND SAFETY ACT, (ACT No. 29 OF 1996) AS AMENDED BY THE MINE HEALTH AND SAFETY AMENDMENT ACT (ACT No. 72 OF 1997)

THIS AGREEMENT made at ……..on this the ……..day of ……in the year…….. between MUSINA LOCAL MUNICIPALITY (hereinafter) called "the Employer") of the one part,

herein represented by ……..…….. in his capacity as……..and delegate of the Employer in terms of the Employer's standard powers of delegation pursuant to the provisions of Act No. 7 of 1998 and ……in his capacity as …….. and being duly authorised by virtue of a resolution appended hereto as a resolution appended hereto as Annexure A.

WHEREAS the Employer is desirous that certain works be constructed, (insert contract title) and has accepted a tender by the Contractor for the construction, completion and maintenance of such works and whereas the Employer and the contract have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Contractor with the provisions of the Mine Health and Safety Act (Act 29 of 1996); as amended by the Mine Health and Safety Amendment Act (Act No. 27 of 1997).

NOW THEREFORE THIS AGREEMENT WITNESS AS FOLLOWS:

1. The contractor shall obtain the Mining Authorisation for the particular site where mining activities, as defined in the Mine Health and Safety Act, No. 29 of 1996 as amended, are to be conducted.
2. The contractor shall assume responsibility for the Environmental Management Programme (EMPR) in respect of the site and shall ensure that the site is rehabilitated at the conclusion of the contract.
3. The contractor declares himself to be conversant with:
   a) all the requirements, regulations and standards of the Act, together with its amendments.
   b) the procedures and safety rules of the Employer as pertaining to the Contractor and to all his sub-contractors.

4. The contractor is responsible for the compliance with the Act and its amendments by all his subcontractors, whether or not selected and/or approved by the Employer.

SIGNED ON BEHALF OF THE EMPLOYER .....

AS WITNESS:

1. ..... 2. .....

NAME (Print): ..... NAME (Print): .....

SIGNED ON BEHALF OF THE CONTRACTOR .....

AS WITNESS:

1. ..... 2. .....

NAME (Print): ..... NAME (Print): .....

EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN TERMS OF THE MINE HEALTH AND SAFETY ACT (1996) AS AMENDED. (To be printed on Contractors letter head)

APPOINTMENT IN TERMS OF SUB-ORDINATE MANAGER: REGULATION 2.6.1 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT (ACT NO. 29 OF 1996) AS AMENDED BY THE HEALTH SAFETY AMENDMENT ACT (ACT NO. 72 OF 1997)

I, …….. in my capacity as …….., having been appointed in terms of **Section 3(1)** of the Act (as amended), by the Municipal Manager who is our client, 'Musina Municipality' and owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of **Regulation 2.6.1** of the Act as amended, appoint …….. as Sub-Ordinate Manager of the Contractor, …….. of address, …….. and contact number, …….. on contract no **…. for the …….. ……**

In accordance with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996), you are also appointed in terms of Section 7(2) of the Mine Health and Safety Act, 1996 to perform the following functions, assigned to the Mine Manager in terms of Section 7(1), 10(2) (b) and (c) and 11 (1) in so far as your area of responsibilities are concerned:-

1. You must identify the hazards, assess the risk and record the hazards to health and safety to which employees may be exposed while they are at work, and
2. To the extent that is reasonable, you must ensure that every employee is properly trained:
   a. In the measures necessary to eliminate, control and minimise those risks to health and safety.
   b. In the procedures to be followed to perform the employee's work.
3. To the extent that is reasonably practical, you must:-
   Ensure that every employee becomes familiar with the work-related hazards and risk and the measures that must be taken to eliminate, control and minimise those hazards and risks.
4. To the extent that is reasonably practical, you must:-
   Ensure that every employee under your control complies with the requirements of the Act.

Institutes the measures necessary to secure, maintain and enhance health and safety.

Considers and employees training and capabilities in respect of health and safety before assigning a task to that employee.

Ensure that work is performed under the general supervision of a person trained to understand the hazards associated with the work, and who has the authority to ensure that the precautionary measures laid down by the Manager are implemented.

You will be responsible for the control, management and direction of all the activities and employees connected with work and you are required to ensure that all such activities take place in accordance with the provisions of the Mine Health and Safety Act and the Regulations are complied with.

You are further required to inform the Manager, …… as soon as practicable, of any breach of any provision of these Regulation, to enable him to inform the Principal Inspector of Mines, Department of Minerals and Energy, or take such steps as may be necessary.

Please acquaint yourself with the relevant Regulations, Standards and Procedures, which have a bearing on your appointment. You must ensure that you are fully conversant with the requirements of the Procedures for Reporting Accidents.

SIGNED: .....

DATE: .....

WITNESS: 1. ..... 2. .....

NAME (Print): 1..... 2.....

I, ……., having been appointed in terms of Regulation 2.6.1 of the act (as amended) to perform all functions entrusted to……In terms of the Act (as amended) hereby accept the above appointment.

SIGNED: .....

DATE: .....

WITNESS: 1. ..... 2. .....

NAME (Print): 1..... 2.....

EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN TERMS OF THE MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.
(To be printed on Contractors letter head)

APPOINTMENT OF RESPONSIBLE MINE SURVEYOR / COMPETENT PERSON: REGULATION 2.12.2 AND 2.12.6 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT, (ACT NO.29 OF 1996) AS AMENDED BY THE HEALTH AND SAFETY AMENDMENT ACT (ACT NO. 72 OF 1997)

I, …… in my capacity as ……., having been appointed in terms of Section 3(1) of the Act (as amended), by the Director: Infrastructure and Planning, who is our client, 'Musina Municipality' and owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of Regulations 2.12.2 and 2.12.6 of the Act as amended, appoint …….. as Competent Person responsible for mine survey for the Contractor, ……..

…..……..…….. of address ……

and contact number, …… on all contracts in the Limpopo Province that are undertaken by the contractor.

Please confirm this appointment by signing at the bottom.

SIGNED: ..... DATE:.....

NAME: .....

SIGNED: ..... DATE:.....

NAME: .....

EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN TERMS OF THE MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.
(To be printed on Contractors letter head)

APPOINTMENT AS COMPETENT PERSON IN CHARGE OF MACHINERY IN TERMS OF REGULATION 2.13.2 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT (ACT NO. 29 OF 1996) AS AMENDED BY THE HEALTH AND SAFETY AMENDMENT ACT (ACT NO. 72 OF 1997)

I, …… in my capacity as ……., having been appointed in terms of **Section 3(1)** of the Act (as amended), by the Director: Infrastructure and Planning, who is our client, 'Musina Municipality' and owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of **Regulations 2.13.2** of the Act as amended, appoint …….. as Competent Person in charge of machinery for the Contractor, ……. …..……..…….. of address ……. and contact number, …… on all contracts in the Limpopo Province that are undertaken by the contractor.

You are to report any accident to the mine manager immediately and personally visit the scene of the accident without delay.

You must familiarise yourself with the Mine Health and Safety Act and the Minerals Act and the Regulations and ensure that you have a copy in your possession and you must take all reasonable measures to ensure that the provisions of this Act are complied with.

Your attention are further drawn to Regulation 2.13.4.1 as well as the requirements of Chapter 18, 20 and 21.

Please confirm this appointment by signing at the bottom.

SIGNED: ..... DATE:.....

NAME: .....

SIGNED: ..... DATE:.....

NAME: .....

PART C2: PRICING DATA (YELLOW PAGES)

C2.1 PRICING INSTRUCTIONS.....C.42

C2.2 BILL OF QUANTITIES.....C.46

PART C2: PRICING DATA (YELLOW PAGES)

C2.1 PRICING INSTRUCTIONS

1 For the purposes of this bill of quantities, the following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work as defined in the standard specifications or the project specifications.

Quantity: The number of units of work for each item.

Rate: The payment per unit of work for which the tenderer tenders to do the work.

Amount: The product of the quantity and the rate tendered for an item.

Lump Sum: An amount tendered for an item, the extent of which is described in the bill of quantities, the specifications or elsewhere, but of which the quantity of work is not measured in units.

2 This bill of quantities forms part of the contract documents and must be read in conjunction with all the other documents comprising the contract documents.

3 The quantities set out in the bill of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the bill of quantities, will be used to determine payments to the contractor.

The validity of the contract shall in no way be affected by differences between the quantities in the bill of quantities and the quantities finally certified for payment. Work is valued at the rates or lump sums tendered, subject only to the provisions of sub-clause 1209 (a) of the standard specifications.

4 Rates and lump sums shall include full compensation for overheads, profits, incidentals, tax (other than VAT), etc, and for the completed items of work as specified, all in accordance with sub-clause 1209 (b) of the standard specifications. Full compensation for completing and maintaining, during the defects liability period, all the work shown on the drawings and specified in the standard specifications and project specifications and for all the risks, obligations and responsibilities specified in the general conditions of contract, special conditions of contract, standard specifications and project specifications shall be considered as provided for collectively in the items of payment given in the bill of quantities, except in so far as

the quantities given in the bill of quantities are only approximate.

5 The tenderer shall fill in a rate or a lump sum for each item where provision is made for it even where no quantities are given. Items against which no rate or lump sum has been entered in the tender will not be paid for when the work is executed, as payment for such work will be regarded as being covered by other rates or lump sums in the bill of quantities.

The tenderer shall fill in a rate against all items where the words “rate only” appear in the amount column. Although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item actually be required. Tenders should note the provisions of paragraph 12 of this preamble.

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

The tendered lump sums and rates shall be valid irrespective of any change in the quantities during the execution of the contract.

6 The works executed are measured for payment in accordance with the methods described in the contract documents under the various payment items, notwithstanding any custom to the contrary. Attention is directed to the provisions of clause 1220 of the standard specifications regarding the measurements of quantities for payment. Except where specified otherwise than in clause 1220, the nett measurement or mass of the finished work in place shall be taken for payment, and any volume or mass of work in excess of that prescribed, shall be excluded.

7 The amount of work or the quantities of material stated in the bill of quantities shall not be considered as restricting or extending the amount of work to be done or quantity of material to be supplied by the contractor.

8 The statement of quantities of material or the amount of work in the bill of quantities shall not be regarded as authorisation for the contractor to order material or to execute work. The contractor shall obtain the Employer’s Agent’s detailed instructions for all work before ordering any materials or executing work or making arrangements in this regard.

9 The short descriptions of the payment items in the bill of quantities are only given to

identify the items and to provide specific details. Reference shall, inter alia, be made to the drawings, standard specifications, project specifications, general conditions of contract and special conditions of contract for more detailed information regarding the extent of work entailed under each item.

10 The provisions of clause 45 of the general conditions of contract shall apply to provisional sums and prime cost sums.

11 Subject to the conditions stated in paragraph 12 below, the rates and lump sums filled in by the tenderer in the bill of quantities shall be final and binding with regard to submitting the tender, and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Should there be any discrepancies between the tender sum and the correctly extended and totalled bill of quantities, the rates will be regarded as being correct, and the employer shall have the right to make adjustments to the tender sum to reconcile the tender sum with the total of the bill of quantities. In such an event the contractor will be consulted but, failing agreement between the parties, the decision of the employer shall be final and binding. Adjustment of the tender sum will take place prior to the signing of the contract. In their own interest tenderers must make doubly sure of the correctness of their tendered rates, the extensions and the tender sum.

12 A tender may be rejected if the unit rates or lump sums for some of the items in the bill of quantities are, in the opinion of the employer, unreasonable or out of proportion, and if the tenderer fails, within a period of seven (7) days of having been notified in writing by the employer to adjust the unit rates or lump sums for such items, to make such adjustments.

13 The units of measurement indicated in the bill of quantities are metric units

The following abbreviations are used in the bill of quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m^2	=	square metre
m^2-pass	=	square metre pass
ha	=	hectare
m^3	=	cubic metre
m^3km	=	cubic metre kilometre
l	=	litre
kl	=	kilolitre
kg	=	kilogram
t	=	ton (1000 kg)

No	=	number
mn	=	meganewton
mn-m	=	meganewton-metre
%	=	per cent
kW	=	kilowatt
Kn	=	kilonewton
PC sum	=	prime cost sum
Prov sum	=	provisional sum

14 All rates and sums of money quoted in the bill of quantities shall be in rands and whole cents. Fractions of a cent shall be discarded

15 The item numbers appearing in the bill of quantities refer to the corresponding item numbers in the standard specifications. Item numbers prefixed by the letter B refer to payment items described under part B of the project specifications, those with C to payment items described under part C, and so on for further parts of the project specifications.

Item numbers in schedule B of the bill of quantities are, in addition, preceded by the number of each separate part of schedule B of the bill of quantities, e.g. payment item 62.02 described in the standard specifications (clause 6210), when used in part 3 of schedule B of the bill of quantities, would be numbered 3/62.02, and if this payment item had been amended in part B of the project specifications, the payment item would be indicated as 3/B62.02.

C2.2 BILL OF QUANTITIES

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
1	SABS 1200A	SECTION 1: PRELIMINARY AND GENERAL, PRIME COST SUMS AND PROVISIONAL SUMS				
1.1	8.3	Fixed-Charge items :				
1.1.1	8.3.1	Contractual requirements (including insurances)	Sum	1		
1.1.2		Establishment facilities on the site				
1.1.2.1	8.3.2.1	Facilities for the Engineer				
		(a) Engineer's office and furnishing	Sum	1		
		(b) Ablution and latrine facilities	Sum	1		
		(c) Parking facilities	Sum	1		
		(d) Survey equipment	Sum	1		
		(e) Photo-copying machine	Sum	1		
		(g) Cellular phone	Sum	1		
1.1.2.2	8.3.2.2	Facilities for the contractor				
		(a) Office and storage shed	Sum	1		
		(b) Workshops	Sum	1		
		(c) Laboratories	Sum	-		R/Only
		(d) Living accommodation	Sum	1		
		(e) Ablution and latrine facilities	Sum	1		
		(f) Tools and equipments	Sum	1		
		(g) Water suppliers	Sum	1		
		(h) Electric power	Sum	1		
		(i) Communications	Sum	1		
		(j) Setting out of works	Sum	1		
		(k) Dealing with water	Sum	1		
		(l) Access and accommodation of traffic	Sum	1		
1.1.2.3	8.3.2.1	Nameboard (Two)	Sum	1		
1.1.2.4	8.3.3	Other fixed-charge obligations	Sum	1		
1.1.2.4	8.3.4	Removal of Engineer's and contractor's site establishment and reinstatement of site on completion	Sum	1		
1.2	8.4	Time-related items :				
1.2.1	8.4.1	Contractual requirements (including insurances)	Month	4		
1.2.2		Operate and maintain facilities on site				
1.2.2.1	8.4.2.1	Facilities for the Engineer				
		(a) Engineer's office and furnishing	Month	4		
		(b) Ablution and latrine facilities	Month	4		
		(c) Parking facilities	Month	4		
		(d) Survey equipment	Month	4		
		(e) Photo-copying machine	Month	4		
		(f) Cellular phone	Month	4		
1.2.2.2	8.4.2.2	Facilities for the contractor				
		(a) Office and storage shed	Month	4		
		(b) Workshops	Month	4		
		(c) Laboratories	Month	4		
		(d) Living accommodation	Month	4		
		(e) Ablution and latrine facilities	Month	4		
		(f) Tools and equipments	Month	4		
		(g) Water supplies	Month	4		
		(h) Electric power	Month	4		
		(i) Communications	Month	4		
		(j) Setting out of works	Month	4		
		(k) Dealing with water	Month	4		
		(l) Access and accommodation of traffic	Month	4		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
1.2.2.3	8.4.2.1	Nameboard (Two)	Month	4		
1.2.2.4	8.4.3	Supervision and company and head office overhead cost	Month	4		
1.2.2.5	8.4.5	Other time related obligations (specify.....)	Month	4		
1.3	PSAB8-1	**Telephone calls etc**				
1.3.1		Engineer's telephone calls (@2500 / month)	**Prov.sum**	**1**	**10 000,00**	**R 10 000,00**
1.3.1.1		Percentage adjustment on items 1.3.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4	8.5	**Provisional Sums. Price Cost Items and Davworks**				
1.4.1	PSA8.5	Locating, protection, alteration and relocation of existing services	**Prov.sum**	**1**	**R 80 000,00**	**R 80 000,00**
1.4.1.1		Percentage adjustment on items 1.4.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 80 000,00**		
1.4.2		Provision of PC Computer/Laptop, A4 Printer and A 3 Printer as per specified by the Engineer	**Prov.sum**	**1**	**R 45 000,00**	**R 45 000,00**
1.4.2.1		Percentage adjustment on items 1.4.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 45 000,00**		
1.4.3	PSA8-8	Provision of accomodation / rented house/hotel for the Engineer represantative(s)	**Prov.sum**	**1**	**R 40 000,00**	**R 40 000,00**
1.4.3.1		Percentage adjustment on items 1.4.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R 40 000,00**		
1.4.4		**Accredited training of local labour**				
1.4.4.1		Allow for in-service training of local labour at a recommended practical institutional training centre	**Prov.sum**	**1**	**R 100 000,00**	**R 100 000,00**
1.4.4.1.1		Percentage adjustment on items 1.4.4.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 100 000,00**		
1.4.5		**In-service training of local labour**				
1.4.5.1		Allow for on-site period of training of local labour	Sum	1		
1.4.6		**Management of labour intensive work**				
1.4.6.1		Allow for the management of labour intensive work	Sum	1		
1.4.7	8.3.3	**Occupational Health and Safety**				
1.4.7.1		**Compensation for Occupational Injuries and Disease Act (COID)**				
1.4.7.1.1		Allow for the application for the COID Act to all employees	Sum	1		
1.4.7.1.2		Compliance with the OHS act, incluidng Health and Safety file and all associated regulations	Sum	1		
1.4.7.1.3		Provision for Ocuppational Safety Consultant (Nominated Sub-consultant)	**Prov.sum**	**1**	**R 200 000,00**	**R/Only**
1.4.7.1.3.1		Percentage adjustment on items 1.4.7.1.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.7.1.4		Provision for Health and Safety Representative (SHE REP), @ R5000/month	**Prov.sum**	**1**	**R 20 000,00**	**R 20 000,00**
1.4.7.1.4.1		Percentage adjustment on items 1.4.7.1.4 for contractor's overheads and profit (state % and extend as an amount)	%	**R 20 000,00**		
1.4.8	8.3.3	**Enviromental Management Plan**				
1.4.8.1		Compliance with the Environmental Management Plan and all associated regulations	**Prov.sum**	1	**R 20 000,00**	**R 20 000,00**
1.4.8.1.1		Percentage adjustment on items 1.4.8.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 20 000,00**		
1.4.8.2		Provision for Environmental Impact Assesment Consultant (Nominated Sub-consultant)	**Prov.sum**	**1**	**R 200 000,00**	**R/Only**
1.4.8.2.1		Percentage adjustment on items 1.4.8.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.9		**Institutional Social Development**				
1.4.9.1		Provision of Community Liason Officer (@ 6000/month)	**Prov.sum**	**1**	**R 24 000,00**	**R 24 000,00**
1.4.9.1.1		Percentage adjustment on items 1.4.9.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 24 000,00**		
1.4.9.2		Provision of Project Steering Committee meetings allowance (@ 250 / sitting /month, for 5 members)	**Prov.sum**	**1**	**R 5 000,00**	**R 5 000,00**
1.4.9.2.1		Percentage adjustment on items 1.4.9.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 5 000,00**		
1.4.9.3		Student In-Service Training / Internship (x 2), (@ 5000/month each)	**Prov.sum**	**1**	**R 48 000,00**	**R 48 000,00**
1.4.9.3.1		Percentage adjustment to item 1.4.9.3	%	**R 48 000,00**		
1.4.9.4		Provision for Technical Social Consultant (Nominated Sub-consultant)	**Prov.sum**	**1**	**R 200 000,00**	**R/Only**
1.4.9.4.1		Percentage adjustment on items 1.4.9.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.10		**Engineering Professional Services**				
1.4.10.1		Provision for extra Engineering Professional Services not included in the contract	**Prov.sum**	**1**	**R 100 000,00**	**R 100 000,00**
1.4.10.1.1		Percentage adjustment on items 1.4.10.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 100 000,00**		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
1.4.11		**Testing**				
1.4.11.1		Acceptance control testing ordered by the Engineer by an approved Independent laboratory, including travelling expenses and supply of test results	**Prov.sum**	**1**	**10 000,00**	**R 10 000,00**
1.4.11.1.1		Percentage adjustment on items 1.4.11.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4.11.2		Goods or materials to be supplied to the site of the Works in terms of the contract	**Prov.sum**	**1**	**R 10 000,00**	**R 10 000,00**
1.4.11.2.1		Percentage adjustment on items 1.4.11.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4.11.3		Transport and labour to handle and install (A5.12) above as specified in specification	**Prov.sum**	**1**	**R 8 000,00**	**R 8 000,00**
1.4.11.3.1		Percentage adjustment on items 1.4.11.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R 8 000,00**		
1.4.11.4		Provision for Geotechnical / Material investigator (Nominated Sub-consultant)	**Prov. Sum**	**1**	**R 80 000,00**	**R 80 000,00**
1.4.11.4.1		Percentage adjustment on items 1.4.11.4 for contractor's overheads and profit (state % and extend as an amount)	%	**R 80 000,00**		
1.4.12	8.7 PSA8.4	**Daywork**				
1.4.12.1		**Labour**				
1.4.12.1.1		Skilled	h	-		R/Only
1.4.12.1.2		Semi-skilled	h	-		R/Only
1.4.12.1.3		Unskilled	h	-		R/Only
1.4.12.2		**Materials**				
1.4.12.2.1		Net cost of goods or materials	**Prov.sum**	**1**	**R 10 000,00**	**R 10 000,00**
1.4.12.2.1.1		Percentage adjustment on items 1.4.12.2.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4.12.3		**Contractor's own plant** (Tenderer must provite details of suitable plant)				
1.4.12.3.1		Excavator				
		Minimum power : 75kW (Similar to "Cat 215")				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.2		T L B				
		Minimum power : 50kW (Similar to" case 580G")				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.3		Front-end loader				
		minimum power : 60kW (Similar to "Cat 920")				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.4		Vibrating pedestrian roller				
		Minimum drum width: 0,39m Minimum poewr: 3,7kW				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.5		Vibrating plate compactor				
		minimum power: 2kW				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.6		Platform truck				
		Minimum load mass : 4t	h	-		R/Only
1.4.12.3.7		Tip truck				
		Minimum load mass : 4t Minimum load capacity :6m³	h	-		R/Only
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
1.4.12.3.8		Compressor complete with two hand-held tools and attachments				
		minimum capacity : 7m³/minute				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.9		Centrifugal pump, 150mm dia, with hoses				
		Manufacturer				
		Model	h	-		R/Only
1.4.13	8.8	**Temporary Works**				
1.4.13.1	8.8.1	Main Access Road to Works (construct and maintain)	Sum	-		R/Only
1.4.13.2	8.8.2	Dealing with Traffic	Sum	1		
1.4.13.3	8.8.3	Protection of the Works until Construction in Vicinity is Complete	Sum	1		
1.4.14	8.8.4	**Existing services**				
		(a) Supply or hire of specialist equipment for the detection for a particular services	Sum	1		
		(b) The use of equipment referred to in item (a) above	Sum	1		
		(c) Excavation by hand in soft material to expose existing service	Day	2		
		(d) Temporary protection, as required in terms of the project specification, of service	Day	10		
1.4.15		**Survey beacons / pegs**				
1.4.15.1	8.8.5	Search for record, reference and protect survey stations, bench marks, erf boundary pegs and other reference pegs and expose on completion of works	**Prov.sum**	**-**	**R 3 000,00**	**R/Only**
1.4.15.1.1		Percentage adjustment on items 1.4.15.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.15.2	8.8.5	Re-establish erf boundary pegs by a Registered land surveyor when pegs have been ordered to be removed for the execution of the works	**Prov.sum**	**1**	**60 000,00**	**R 60 000,00**
1.4.15.2.1		Percentage adjustment on items 1.4.15.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 60 000,00**		
1.4.15.3		Provision for Engineering Land Surveyor (Nominated Sub-consultant)	**Prov. Sum**	**1**	**R 80 000,00**	**R/Only**
1.4.15.3.1		Percentage adjustment on items 1.4.15.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
TOTAL CARRIED TO SUMMARY						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
2	SANS 1200DB	**SECTION 2 : PERIMETER FENCING AND SECURITY FEATURES (LI)**				
2.1		**MAIN OFFICE**				
2.1.1	1200DB	**Earthworks (Pipe trenches)**				
2.1.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	600		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	10		
2.1.2	1200DB	**Excavation**				
2.1.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up - to				
		a) 0,0m 1,0m	m	120		
		b) 1,0m 2,0m	m	-		R/Only
2.1.2.2	8.3.2.(b)	Extra-over item 2.1.2.1				
		a) Hard rock excavation (Prov)	m^3	6		
2.1.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	96		
2.1.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	102		
2.1.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	51		
2.1.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	51		
		b) long haul : over 1km (Prov)	m^3-km	1020		
2.1.3		**Extra over all excavations for carting away**				
2.1.3.1		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	102		
2.1.4		**Risk of collapse of excavations**				
2.1.4.1		Sides of trench and hole excavations not exceeding 1,5m deep	m^2	114		
2.1.5		**Keeping excavations free of water**				
2.1.5.1		Keeping excavations free of water	Sum	1		
2.1.6	1200DB	**Existing Services**				
2.1.6.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	No.	-		R/Only
		b) Sewer pipeline	No.	-		R/Only
		c) Electrical Line	No.	-		R/Only
2.1.6.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	m	-		R/Only
		b) Sewer pipeline	m	-		R/Only
		c) Electrical Line	m	-		R/Only
2.1.7		**Filling. etc**				
2.1.7.1		**Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density**				
2.1.7.1.1		Backfilling to trenches, holes, etc	m^3	-		R/Only
2.1.8		**Soil Poisoning**				
2.1.8.1		**Soil insecticide to be executed with SABS compliance by a firm of specialists under a 10 year guarantee**				
2.1.8.1.1		Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	-		R/Only
2.1.8.1.2		To bottoms and sides of trenches etc	m^2	-		R/Only
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
2.1.9		**Unreinforced concrete cast against excavated surfaces**				
2.1.9.1		**25MPa/19mm concrete**				
2.1.9.1.1		Strip footings	m^3	3		
2.1.9.1.2		Bases in foundations (Provisional)	m^3	6		
2.1.10		**Test cubes**				
2.1.10.1		Allow for all necessary concrete test cubes 150 x 150 x 150mm cast from batches of concrete required for the entire contract as specified, made, stored, cured and test in accordance with SANS methods 861 and 863 including use of approved cube moulds, transporting to an approved testing laboratory for testing , paying	**Prov.Sum**	**1**	**R10 000,00**	**R10 000,00**
2.1.11		**Perimeter Fence**				
2.1.11.1		Dismantle existing steel palisade fence, and deliver to store in the place ordered by the enigineer.	m	50		
2.1.12.1		**Clear View Fence**				
2.1.12.1.1		Supply and erect galvinized-black plascoated (4 x 4 / 25 x 76), 2400mm high fence, with spikes on top, as per supplier / manufacture's secifications complete with 3000mm post, i.e 3050mm x 2400mm panels, 25,7mm x 76,2mm mesh opening, 4mm horizontal and 4mm vertical wires fence.	m	600		
2.1.12.2		**Raizor Wire Fence**				
2.1.12.2.1		Supply and erect galvanized coiled raizer wire on top of perimeter fence , 450mm coil diameter , fixed to 4mm x 3,15mm galvinized straining barbed wires, including poles and Y section using 2mm binding wire (or as approved/specified by engineer)	m	-		R/Only
2.1.13		**Gates** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of gates as indicated on the Drawings with the respected sizes and positions.				
2.1.13.1		**Vehicular Gates**				
2.1.13.1.1		Supply and erect Clear view Vehicular Sliding Gate, with spikes on top, 8000mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No	3		
2.1.13.2		**Pedesdrian Gates**				
2.1.13.2.1		Supply and erect Clear view Sliding Pedestrian Gate/burglar door , 2100mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No	2		
2.1.13.2.2		Supply and erect Clear view Pedestrian Gate, with spikes, 1200mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No.	4		
2.1.13.2.3		Supply and erect Steel Palisade Pedestrian Gate, 1200mm(Wide) X 2400mm (High) with spikes	No.	-		R/Only
2.1.13.3		**Turnstile**				
2.1.13.3.1		Turnstar Triumph 3 or similar approved single full height turnstile	No.	2		
2.1.13.4		**Gate Motors**				
2.1.13.4.1		Supply and install a centurion D10 Smart turbo sliding gate operator motor steel rack kit or smilar approved by Engineer	No.	3		
2.1.13.5		**Boom Gates and Claws**				
2.1.13.5.1		Supply and install a complete three 6m Centurion Sector II or similar approved boom gates, with flush mount spike barrier with 3CR12 powder coated stainless steel housing, bogic, detectors, 2 x Internal Motors and 6m boom arm or similar as approaved by Engineer, including concrete plinth for claws.	**Prov.Sum**	**1**	**R600 000,00**	**R600 000,00**
2.1.13.5.1.1		Percentage adjustment on items 2.1.13.5.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R600 000,00**		
2.1.14		**Access controls (gooseneck)** Tendered rates for Gooseneck shall include fully for all labour, materials, equipment and transportation required for the supply and installation of Centurion goosenecks or similar approved. Tendered rates for Access card/face/finger reader shall include fully for all labour, materials, equipment and transportation required for the supply and installation of access readers				
2.1.14.1		Supply and install Three Centurion gooseneck or similar approved	**Prov.Sum**	**1**	**R30 000,00**	**R30 000,00**
2.1.14.2		Supply and install Three Access card/face/finger reader, to be approved by Engineer	**Prov.Sum**	**1**	**R24 000,00**	**R24 000,00**
2.1.14.2.1		Percentage adjustment on items 2.1.14.1 and 2.1.14.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R54 000,00**		
2.1.15		**CCTV Cameras** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of cameras as spcified positions.				
2.1.15.1		Supply and install 32 Channel Wireless Kit 6TB HDD, colorvu technology , human detection , Audio & Siren, 4MP collour bullet IP camera 4mm-13,5mm 60M view including 8 poles and POE, 650m coper cable and suffax. The Engineer to approve the sysytem before supply and installation	**Prov.Sum**	**1**	**R750 000,00**	**R750 000,00**
2.1.15.1.1		Percentage adjustment on items 2.1.15.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R750 000,00**		
2.1.16		**Office Name branding**				
2.1.16.1		Supply and erection of name branding of the offices (1 for Old Traffic Offices and 2 for Main Offices	**Prov.Sum**	**1**	**R40 000,00**	**R40 000,00**
2.1.16.1.1		Percentage adjustment on items 2.1.16.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R40 000,00**		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
2.2		OLD TRAFFIC OFFICE				
2.2.1		**Perimeter Fence**				
2.2.1.1		Dismantle existing concrete palisade fence, and deliver to store in the place ordered by the enigineer.	m	50		
2.2.1.2		**Clear View fence**				
2.2.1.2.1		Supply and erect galvinized-black plascoated (4 x 4 / 25 x 76), 2400mm high fence, with spikes on top, as per supplier / manufacture's secifications complete with 3000mm post, i.e 3050mm x 2400mm panels, 25,7mm x 76,2mm mesh opening, 4mm horizontal and 4mm vertical wires fence.	m	240		
2.2.1.3		**Raizor Wire Fence**				
2.2.1.3.1		Supply and erect galvanized coiled raizer wire on top of perimeter fence , 450mm coil diameter , fixed to 4mm x 3,15mm galvinized straining barbed wires, including poles and Y section using 2mm binding wire (or as	m	180		
2.2.1.4		**Gates** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of gates as indicated on the Drawings with the respected sizes and positions.				
2.2.1.4.1		**Vehicular Gates**				
2.2.1.4.1.1		Supply and erect Clear view Vehicular Sliding Gate, with spikes on top, 8000mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No	1		
2.2.1.4.2		**Pedesdrian Gates**				
2.2.1.4.2.1		Supply and erect Clear view Sliding Pedestrian Gate/burglar door , 2100mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No.	-		R/Only
2.2.1.4.2.2		Supply and erect Clear view Pedestrian Gate, with spikes, 1200mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No.	2		
2.2.1.4.2.3		Supply and erect Steel Palisade Pedestrian Gate, 1200mm(Wide) X 2400mm (High) with spikes	No.	-		R/Only
2.2.1.4.3		**Turnstile**				
2.2.1.4.3.1		Turnstar Triumph 3 or similar approved single full height turnstile	No.	-		R/Only
2.2.1.4.4		**Gate Motors**				
2.2.1.4.4.1		Supply and install a centurion D10 Smart turbo sliding gate operator motor steel rack kit or smilar approved by Engineer	No.	1		
2.2.1.4.5		**Boom Gates and Claws**				
2.2.1.4.5.1		Supply and install a complete one 6m Centurion Sector II or similar approved one boom gate , flush mount spike barrier with 3CR12 powder coated stainless steel housing, bogic, detectors, 2 x Internal Motors and 6m boom arm or similar as approaved by Engineer, including concrete plinth for claws.	**Prov.Sum**	**1**	**R165 000,00**	**R/Only**
2.2.1.4.5.1.1		Percentage adjustment on items 2.2.1.4.5.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
2.2.1.5		**Access Controls (Gooseneck)** Tendered rates for Gooseneck shall include fully for all labour, materials, equipment and transportation required for the supply and installation of Centurion goosenecks or similar approved. Tendered rates for Access card/face/finger reader shall include fully for all labour, materials, equipment and transportation required for the supply and installation of access readers				
2.2.1.5.1		Supply and install One Centurion gooseneck or similar approved	**Prov.Sum**	**1**	**R10 000,00**	**R10 000,00**
2.2.1.5.2		Supply and install One Access card/face/finger reader, to be approved by Engineer	**Prov.Sum**	**1**	**R8 000,00**	**R8 000,00**
2.2.1.5.2.1		Percentage adjustment on items 2.2.1.5.1 and 2.2.1.5.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R18 000,00**		
2.2.1.6		**CCTV Cameras** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of cameras as spcified positions.				
2.2.1.6.1		Supply and install 32 Channel Wireless Kit 6TB HDD, colorvu technology , human detection , Audio & Siren, 4MP collour bullet IP camera 4mm-13,5mm 60M view including 8 poles and POE, 650m coper cable and suffax. The Engineer to approve the sysytem before supply and installation	**Prov.Sum**	**1**	**R750 000,00**	**R/Only**
2.2.1.6.1.1		Percentage adjustment on items 2.2.1.6.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
2.2.1.7		**Office Name branding**				
2.2.1.7.1		Supply and erection of name branding of the offices (2 in number)	**Prov.Sum**	**1**	**R40 000,00**	**R40 000,00**
2.2.1.7.1.1		Percentage adjustment on items 2.2.1.7.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R40 000,00**		
TOTAL CARRIED TO SUMMARY						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
3		**SECTION 3 : GUARD HOUSE (LI)** Construct the Guard houses complete as per drawings including earthworks, foundation excavations, importation of material under surface bed, concrete for foundations and surface bed, cladding and sheeting, brickwork, waterproofing, carpentry and joinery, ironmongery, windows, doors and frames, plastering, tiling, sanitary fittings, hot and cold water supply pipes, sewer connection and painting FOUNDATIONS SUPPLEMENTARY PREAMBLES Nature of ground Carting away of excavated material Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site Filling Note: Unless otherwise stated, all materials from the alterations and demolitions will belong to the builder. The builder should allow for the removal of all debris from site and keep the site clean at all times				
3.1		**EXCAVATIONS**				
3.1.1		**Excavation in earth not exceeding 2m deep**				
3.1.1.1		Trenches	m^3	110		
3.1.1.2		Holes	m^3	15		
3.1.2		**Back excavation of vertical sides of excavation in earth not exceeding 500mm deep for working space, including backfilling compacted to 93% Mod AASHTO density**				
3.1.2.1		For placing and removing formwork to walls etc, 300mm away from excavated face	m^3	20		
3.1.3		**Extra over trench and hole excavations in earth for excavation in**				
3.1.3.1		Soft rock	m^3	21		
3.1.3.2		Hard rock	m^3	11		
3.1.4		**Extra over all excavations for carting away**				
3.1.4.1		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	71		
3.1.5		**Risk of collapse of excavations**				
3.1.5.1		Sides of trench and hole excavations not exceeding 1,5m deep	m^2	34		
3.1.6		**Keeping excavations free of water**				
3.1.6.1		Keeping excavations free of water	Sum	1		
3.2		**FILLING ETC**				
3.2.1		**Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density**				
3.2.1.1		Under floors, steps, pavings, etc	m^3	30		
3.2.1.2		Backfilling to trenches, holes, etc	m^3	15		
3.2.2		**Earth filling of G4 material supplied by the contractor, compacted to 95% Mod AASHTO density**				
3.2.2.1		Under floors, steps, pavings, etc	m^3	7		
3.2.3		**Earth filling of G5 material supplied by the contractor, compacted to 95% Mod AASHTO density**				
3.2.3.1		Under floors, steps, pavings, etc	m^3	43		
3.2.4		**Earth filling of G6/G7 material supplied by the contractor, compacted to 95% Mod AASHTO density**				
3.2.4.1		Under floors, steps, pavings, etc	m^3	60		
3.2.5		**Compaction of surfaces**				
3.2.5.1		Compaction of ground surface under floors etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m^2	145		
3.2.6		**Prescribed density tests on filling**				
3.2.6.1		Allow for all necessary "Mod. AASHTO Density" tests for the entire contract as specified, made, stored in accordance with SABS standards, transporting to an approved testing laboratory for testing , paying charges and submiting reports to the Engineers	**Prov.Sum**	**1**	**R5 000,00**	**R5 000,00**
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.3		**SOIL POISONING**				
		Soil insecticide to be executed with SABS compliance by a firm of specialists under a 10 year guarantee				
3.3.1						
3.3.1.1		Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	145		
3.3.1.2		To bottoms and sides of trenches etc	m^2	260		
3.4		**REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**				
3.4.1		**35MPa/19mm concrete**				
3.4.1.1		Strip footings	m^3	36		
3.4.1.2		Bases in foundations (Provisional)	m^3	7		
3.5		**TEST CUBES**				
3.5.1		Allow for all necessary concrete test cubes 150 x 150 x 150mm cast from batches of concrete required for the entire contract as specified, made, stored, cured and test in accordance with SANS methods 861 and 863 including use of approved cube moulds, transporting to an approved testing laboratory for testing , paying charges and submiting reports to the Engineers	**Prov.Sum**	**1**	**R10 000,00**	**R10 000,00**
3.6		**MASONRY**				
3.6.1		**Brickwork of NFP bricks in class II mortar**				
3.6.1.1		One brick walls	m^2	110		
3.6.1.2		Half brick walls	m^2	15		
3.6.2		**Brickwork reinforcement**				
3.6.2.1		150mm Wide reinforcement built in horizontally	m	80		
3.6.3		**Brickwork of Facebrick bricks in class II mortar**				
3.6.3.1		One brick walls	m^2	75		
3.6.3.2		Half brick walls	m^2	-		R/Only
3.6.4		**Brickwork reinforcement**				
3.6.4.1		150mm Wide reinforcement built in horizontally	m	150		
3.6.5		**Firelight Travetine FBX or equally approved face brick, to architect's selection jointed in Class II motar with a Superfine organic natural oxide colour additive to match face brick colour and pointed with recessed vertical and recessed horizontal joints,**				
3.6.5.1		Extra over brickwork for face brickwork	m^2	15		
3.7		**CONCRETE SUNDRIES**				
3.7.1		**Finishing top surfaces of concrete smooth with a wood float**				
3.7.1.1		Surface beds, slabs, etc to falls	m^2	145		
3.8		**FORMWORK**				
3.8.1		**Rough formwork to sides**				
3.8.1.1		Sloping and stepped outer edges of stairs not exceeding 300mm high extreme	m^2	-		R/Only
3.8.1.2		Edges, risers, ends and reveals not exceeding 300mm high or wide	m	50		
3.8.2		**Smooth formwork to square columns**				
3.8.2.1		610 x 610mm stub column 1.27m high	No.	-		R/Only
3.8.3		**Smooth formwork to soffits**				
3.8.3.1		Stairs and landings	m^2	-		R/Only
3.8.3.2		Slabs propped up exceeding 3,5m and not exceeding 5m high	m^2	-		R/Only
3.9		**MOVEMENT JOINTS ETC (PROVISIONAL)**				
3.9.1		**Saw cut joints**				
3.9.1.1		50 x 3mm Saw cut joints in top of concrete	m	50		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.10		**REINFORCEMENT**				
3.10.1		**Mild steel reinforcement to structural concrete work**				
3.10.1.1		10mm Diameter bars	t	-		R/Only
3.10.2		**High tensile steel reinforcement to structural concrete work**				
3.10.2.1		12mm Diameter bars	t	1		
3.10.2.2		16mm Diameter bars	t	1		
3.10.2.3		20mm Diameter bars	t	-		R/Only
3.10.3		**Fabric reinforcement**				
3.10.3.1		Mesh Ref no. 395 fabric reinforcement in concrete slabs etc	m^2	300		
3.11		**MASONRY**				
		SUPPLEMENTARY PREAMBLES				
		BRICKWORK Sizes in descriptions Face bricks Bricks shall be ordered timeously to obtain uniformity in size and colour				
		Pointing Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc				
		SAMPLES Samples of all masonry building units, shall consist of a minimum of 6 units				
3.11.1		**SUPERSTRUCTURE**				
3.11.1.1		**Brickwork of NFP bricks in class II mortar**				
3.11.1.1.1		Half brick walls	m^2	30		
3.11.1.1.2		One brick walls	m^2	90		
3.11.1.1.3		One brick wall beamfilling	m^2	10		
3.11.1.2		**Brickwork reinforcement**				
3.11.1.2.1		75mm Wide reinforcement built in horizontally	m	75		
3.11.1.2.2		150mm Wide reinforcement built in horizontally	m	300		
3.11.2		**LINTELS**				
3.11.2.1		**75 x 100mm or 75 x 150mm Standard precast concrete lintol. Minimum bearing distance to be 230mm, lintols to meet all relevent SABS requirements.**				
3.11.2.1.1		Lintels in lengths not exceeding 3m	m	150		
3.11.2.2		**Turning pieces**				
3.11.2.2.1		115mm Wide turning pieces to lintels etc	m	20		
3.11.3		**FACE BRICK**				
3.11.3.1		**Brickwork of Firelight Travetine FBX or equally approved face brick, to architect's selection in class II mortar**				
3.11.3.1.1		Half brick walls	m^2	-		R/Only
3.11.3.1.2		One brick walls	m^2	150		
3.11.3.1.3		One brick wall beamfilling	m^2	25		
3.11.3.2		**Firelight Travetine FBX or equally approved face brick, to architect's selection jointed in Class II motar with a Superfine organic natural oxide colour additive to match face brick colour and pointed with recessed vertical and recessed horizontal joints,**				
3.11.3.2.1		Extra over brickwork for face brickwork	m^2	25		
3.11.3.3		**Fair raking cutting**	m	20		
3.11.3.3.1		**Brick-on-edge header course copings, sills, etc of 10MPa NFX or equally approved face bricks, size 222 x 106 x 73mm clay solid face brick manufactured in accordance with SANS 227:200, in superstructure and bedded and jointed in Class 1 mortar**				
3.11.3.3.1.1		150mm Wide sills set sloping and slightly projecting	m	50		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.12		**WINDOW SILLS**				
3.12.1		**Everite Nutec horizontal internal window sill, size 535 x 150 x 15mm thick (Code: 031-507), manufactured in accordance with SANS803:2005 and installed below window with window sill lugs screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar with plastic slip joints at end of sills at plaster reveals and projecting from the finished face of wall. All in accordance with manufacturer's recommendations.**				
3.12.1.1		150mm slightly projecting.	m	50		
3.13		**WATERPROOFING**				
		SUPPLEMENTARY PREAMBLES				
		Waterproofing				
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee by an approved applicator. 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				
3.13.1		**DAMPPROOFING OF WALLS AND FLOORS**				
3.13.1.1		**One layer of 375 micron SABS embossed damp proof course in suitable widths laid under all walls at slab level, below window sills and above lintols in cavity walls.**				
3.13.1.1.1		In walls	m^2	25		
3.13.1.1.2		Between brickwall and concrete slab	m^2	65		
3.13.1.2		**One layer of 250 micron damp proof membrane under concrete surface beds to SABS mark 952-1985 type C laid with minimum 150mm overlaps and sealed at laps with "Gunplas Pressure Sensitive Tape"**				
3.13.1.2.1		Under surface beds	m^2	145		
3.13.2		**JOINT SEALANTS ETC (PROVISIONAL)**				
3.13.2.1		**"Compriband" bitumen impregnated foam plastic joint sealing strips**				
3.13.2.1.1		25 x 20mm In joints between frames and walls	m	20		
3.13		**ROOF COVERINGS, ETC.**				
		SUPPLEMENTARY PREAMBLES				
3.13.1		**PROFILED METAL SHEETING AND ACCESSORIES**				
3.13.1.1		**Roof sheeting to be Brown built klip-lok 700 x 0.6mm thick light industrial Z450 with Chromadeck finish,fixed to timber trusses fixed to ring beam to engineer's details roof pitch @ 5 degree.**				
3.13.1.1.1		Roof coverings/trusses with pitches not exceeding 5 degrees	No.	40		
3.13.1.2		**Cladding**				
3.13.1.2.1		Kliplok 700 x 0.6mm thick light industrial Z450 with chromadeck finish.	m^2	200		
3.14		**ROOFS, ETC.**				
3.14.1		The following in roof trusses to various buildings				
		Allow for the preparation and submission of the following documents in respect of all buildings				
3.14.1.1		Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication	Sum	1		
3.14.1.2		Design certificate indicating the licensed programme used, SABS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.	Sum	1		
3.14.1.3		Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Representative/Agent	Sum	1		
3.15		**CARPENTRY AND JOINERY**				
3.15.1		**EAVES, VERGES, ETC**				
3.15.1.1		"Everite" medium density plain nutec-cement or similair approved				
3.15.1.2		12 x 225mm Fascias and barge boards, including aluminium H-profile jointing strips	m	110		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.16		**SKIRTINGS**				
3.16.1		**Ceramic Tiles**				
3.16.1.1		100x 20mm ceramic tiles skirting	m	30		
3.17		**DOORS, ETC (As per drawing)**				
3.17.1		2032x813x44mm interior grade flush solid core timber single door with 3mm thick commercial ply on both sides with consolidated edges fitted and complying with SABS 545n in pressed steel frame.All painted to in accordance with the Architect's schedule.				
3.17.2		Door size 813 x 2032mm high (internal)	No.	3		
3.17.3		2032x813x44mm interior grade flush solid core timber single door meranti ledged with 3mm thick commercial ply on both sides with consolidated edges fitted and complying with SABS 545n in pressed steel frame.All painted to in accordance with the Architect's schedule.				
3.17.4		Door size 813 x 2032mm high (External)	No.	6		
3.18		**IRONMONGERY**				
		SUPPLEMENTARY PREAMBLES				
		Descriptions				
		Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs				
3.18.1		**HINGES, BOLTS, ETC**				
		"Doorware"				
3.18.1.1		"Ref BFBDM" Built-in flush bolts by door manufacturer	No.	10		
3.18.1.2		"Ref 37651 AS" Helping hand indicator bolt for paraplegic wc.	No.	6		
3.18.1.3		"Ref DPS-SS-032" Dust proof strike	No.	5		
3.18.2		**LOCKS**				
		"Doorware"				
3.18.2.1		"Ref D037D SS" Cylinder deadlock.Case dimensions (mm) 116.5H x 78D.Forend dimensions (mm) 168H x 22W. Backset 57mm.	No.	10		
3.18.2.2		"Ref DDC106601 MK" 66mm five pin Euro-profile Double Cylinder master keyed.	No.	10		
3.18.2.3		"Ref DMWC - SS - 008" Bathroom deaslock. Case dimensions (mm) 38H x 76D. Forend dimensions (mm) 78H x 22.5W. Backset 55mm.	No.	10		
3.18.2.4		"Ref D07735 SS" Narrow stile heavy duty swivel dead lock.Case dimensions (mm) 174H x 40D. Forend dimensions (mm) 290H x 22W. Backset 35mm.	No.	-		R/Only
3.18.2.5		"Ref D07635 SS" Narrow stile heavy duty swivel sash lock.Case dimensions (mm) 174H x 50D. Forend dimensions (mm) 290H x 22W. Backset 35mm.Centres 85mm.	No.	-		R/Only
3.18.2.6		"Ref D07935 SS" Narrow stile heavy duty roller dead lock.Case dimensions (mm) 174H x 50D. Forend dimensions (mm) 290H x 22W. Backset 35mm.	No.	-		R/Only
3.18.2.7		"Ref DWC-006" Disabled wc indicator (red & white) and turnknob for physically impaired	Sets	-		R/Only
3.18.3		**HANDLES**				
		"Doorware"				
3.18.3.1		"Ref DHP-430-CL-SF 170 x 170" DPH301C Handle BT fixed on a 170 x 170 x 1.2mm thick grade 430 stainless steel plate with cylinder cutout left. Stainless steel plate to have 4 countersunk holes for screw fixing.	No.	4		
3.18.3.2		"Ref DHP-430-CR-SF 170 x 170" DPH301C pull handle BT fixed on a 170 x 170 x 1.2mm thick grade 430 stainless steel plate with cylinder cutout right. Stainless steel plate to have 4 countersunk holes for screw fixing.	No.	4		
3.18.3.3		"Ref DPH301C BT" 149 x 19mm straight tubular pull handle BTI	No.	4		
3.18.3.4		"Ref DPH301A BTB" 325 x 25mm straight tubular pull handle BTB (BTB fixing sets included)	No.	4		
3.18.3.5		"Ref DPH215 BTB" 382 x 32mm D shaped offset tubular pull handle BTB (BTB fixing sets included)	No.	4		
3.18.3.6		"Ref TH120 NS Cyl S.S" Lever handle on narrow stile rose with narrow stile cylinder escutcheons.	Sets	1		
3.18.4		**PUSH PLATES AND KICK PLATES**				
3.18.4.1		Satin finished stainless steel plates 430 grade countersunkscrewed along edges at not exceeding 200mm centres				
3.18.4.1.1		"Ref DPP-430-BL-SF 75 x 170" 75 x 170 x 1.2mm thick grade 430 stainless steel plate.Stainless steel plate to have 4 countersunk holes for screw fixing.	No.	4		
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			BROUGHT FORWARD			
3.18.5		**DOOR CLOSERS**				
		"Doorware"				
3.18.5.1		"Ref TS90" EN 3/4 Cam action slide channel NON HOLD OPEN Door closer - hydraulic speed control.Pull side - leaf or transom fixing; push side - leaf or transom fixing.EN3 850-950, EN4 950-1100	No.	4		
3.18.5.2		"Ref TS73V PA DC + Parallel arm bracket" EN 2-4 parallel arm DELAYED ACTION Door closer. Push side fixing (parallel arm bracket included) EN2 750-850, EN3 850-950, EN4 950-1100.	No.	2		
3.18.5.3		"Ref ITS962- 4 HO" EN 2-4 Concealed in the door closer - HOLD OPEN	No.	2		
3.18.5.4		"Ref TS92B HO" MECHANICAL HOLD OPEN Cam action slide channel door closer, max door width 1100mm.Closing force EN 2- 4V. Adjustable strength.Hydraulic speed control.Pull-side door leaf fixing (Standard), push-side transom fixing.Door closer compliant with EN 1154.Door closer in CERTI FIRE approved (Certificate No.CF119) for door types ITT 120, MM/IMM 240. Certified manufacture to ISO 9001.	No.	1		
3.18.6		**LETTERS, NAMEPLATES, ETC**				
		"Doorware"				
3.18.6.1		"Ref DSS-130 M" 150 x 150mm MALE sign stainless steel	No.	-		R/Only
3.18.6.2		"Ref DSS-133 P" 150 x 150mm DISABLED PERSONS sign stainless steel	No.	-		R/Only
3.18.6.3		"Ref DSS-131 F" 150 x 150mm FEMALE sign stainless steel	No.	-		R/Only
3.18.7		**SUNDRIES**				
		"Doorware"				
3.18.7.1		"Ref fixing screws" male/female fixing screws	PACK	1		
3.18.7.2		"Ref DDS-SS-017" Floor mounted door stop	No.	12		
3.18.7.3		"Ref DCE-105 S.S" Narrow stile cylinder escutcheon	Pairs	1		
3.18.7.4		"Ref DDS-SS-021" Floor mounted door stop	No.	-		R/Only
3.18.7.5		"Ref DHC -SS-031B" Hat and Coat hook with rubber buffer	No.	-		R/Only
3.19		**BATHROOM FITTINGS**				
3.19.1		**"Kimberly" or equally approved**				
3.19.1.1		(Code:SA426220) Kimberly-Clark professional MR3 satin finish stainless steel toilet tissue dispenser overall size 130 x 135 x 360mm high , installed by a kimberly clark installation team. (or equal approved)	No.	3		
3.19.1.2		(Code:LOFTPH00010P) Bathroom butler loft polished stainless steel toilet paper holder, size 124 x 107mm wide plugged and screwed to wall with stainless steel screws. or equal approved.	No.	3		
3.19.1.3		Kimberly clark professional foam soap dispenser colour stainless steel, overall size 134 x 120 x 250mm high , installed by a kimberly clark installation team . or equal approved.	No.	3		
3.19.1.4		(Code: TVURCU30/CH) Urban cube 750mm single Towel rail	No.	3		
3.19.2		**"Franke"**				
3.19.2.1		No. 1 x 500mm x 80m x 32mm dia stainless steel grab rail as by Chairman Industries (Tel:011- 624 1222).manufacturer's instructions.(or equal approved) REAR GRAB RAIL (wc): No: 1 x "Chairman Industries" 32mm dia standard stainless steel grade 304 satin polished finish rear grab rail around cistern (code SR2) fixed to wall strictly to manufacturers specifications.Supplied complete with stainless steel fixing screws and plastic wall plugs for fixing. (or equal approved) SIDE GRAB RAIL (wc): No: 1 x 'Chairman Industries" 32mm dia standard stainless steel grade 304 satin polished finish side grab rail (code DL3) fixed to wall strictly to manufacturer's specifications.Supplied complete with stainless steel fixing screws and plastic wall plugs for fixing .(or equal approved)	No.	6		
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Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.20		METALWORK				
		SUPPLEMENTARY PREAMBLES				
		Descriptions				
		Pricing. All window prices should include alluminium louvres as shown				
		General				
		Workshop drawings to be approved by the architect before manufacture				
3.20.1		ALUMINIUM WINDOWS (As per drawing no. 17-0005 A-502) attached at the back of these bills of Quantities				
3.20.1.1		Purpose made, powder coated aluminium shopfront with flush meeting stiles and divided into glazing sections as shown.				
3.20.1.1.1		Window Type W01, 600 X 900mm high	No.	-		R/Only
3.20.1.1.2		Purpose made, powder coated top hung and fixed glazed aluminium window.				
3.20.1.1.3		Window Type NC5F, 600 X 900mm high	No.	6		
3.20.1.1.4		Window Type NCTX7S,900 X 900mm high	No.	6		
3.20.1.1.5		Window Type TD57, 900 X 1500mm high	No.	3		
3.21		PLASTERING				
3.21.1		SCREEDS				
3.21.1.1		Screeds on concrete				
3.21.1.1.1		30mm Thick on floors and landings	m^2	145		
3.21.2		GRANOLITHIC				
3.21.2.1		Untinted granolithic, on concrete				
3.21.2.2		On floors and landings	m^2	15		
3.21.3		INTERNAL PLASTER				
3.21.3.1		1:4 Cement sand plaster mix on brickwork				
3.21.3.2		On walls	m^2	150		
3.21.3.3		On narrow widths	m^2	8		
3.21.3.4		Cement plaster on concrete				
3.21.3.5		On concrete soffits	m^2	-		R/Only
3.21.4		EXTERNAL PLASTER				
3.21.4.1		1:5 Cement sand plaster mix on brickwork				
3.21.4.2		On walls	m^2	-		R/Only
3.21.4.3		On narrow widths	m^2	-		R/Only
3.22		TILING				
3.22.1		WALL TILING				
3.22.1.1		UC Tiles "Leornardo Prima Beige" size 250 x 400mm 1st grade shiny and rough textured ceramic wall tiles (or equally approved), fixed with "MCC506" adhesive with Fine Epoxy Grout in between all in strict accordance to the manufacturer's instructions.				
3.22.1.2		On walls	m^2	10		
3.22.1.3		On narrow widths	m^2	5		
3.22.2		FLOOR TILING				
3.22.2.1		UC Tiles "Leornardo Prima Beige" size 250 x 400mm 1st grade shiny and rough textured ceramic floor tiles (or equally approved), fixed with "MCC506" adhesive with Fine Epoxy Grout in between all in strict accordance to the manufacturer's instructions.				
3.22.2.2		On floor	m^2	145		
3.22.2.3		On narrow widths	m^2	15		
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			BROUGHT FORWARD			
3.23		**GLAZING**				
3.23.1		**MIRRORS, ETC**				
3.23.1.1		6mm Silvered float glass copper backed mirrors with polished edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
3.23.1.2		Mirror 1000 x 600mm high Bevel-edged mirror with four (4) screws (or equal approved)	No.	-		R/Only
3.24		**PAINTWORK**				
3.24.1		**PAINTWORK ETC TO NEW WORK**				
3.24.1.1		**ON FLOATED PLASTER**				
3.24.1.1.1		Prepare and apply one coat of Plascon PP700 plaster primer and finish with two coats of Super Acrylic paint as per products specification to Architect				
3.24.1.1.2		Internal walls	m^2	150		
3.24.1.1.3		Prepare and apply one coat Plascon plaster primer and and finish with two coats of wall and all to manufacturer's specifications. Colour to architect.				
3.24.1.1.4		External walls	m^2	-		R/Only
3.24.1.2		**ON FLOATED CONCRETE**				
3.24.1.2.1		Prepare and apply one coat universal undercoat and two coats "Plascon" acrylic PVA paint				
3.24.1.2.2		On soffits of slabs	m^2	-		R/Only
3.24.1.3		**ON METAL SURFACES**				
3.24.1.3.1		Spot priming defects in pre-primed surfaces, apply one coat "Plascon Duraphos Primer" one coat "Plascon Undercoat" and two coats "Plascon Dura 100 Gloss Enamel Paint" or similar approved on steel				
3.24.1.3.2		On door fames	m^2	-		R/Only
3.24.1.3.3		Grabrails (steel balustrades)	m^2	-		R/Only
3.24.1.4		**ON WOOD**				
3.24.1.4.1		Sand down and apply one coat SABS approved universal undercoat and two coats SABS approved polyurethane enamel paint.				
3.24.1.4.2		On doors	m^2	-		R/Only
3.24.1.4.3		Prepare and apply three coats clear varnish				
3.24.1.4.4		On skirtings, rails, etc. n.e exceeding 300mm girth	m	-		R/Only
3.25		**SANITARY FITTINGS ETC**				
3.25.1		**"Vaal" or equally approved**				
3.25.1.1		Vaal sanitary ware 635x485mm Lotus white vitreous china lavatory basin (product code 7026) with one tap hole including intergrated overflow and chain stay hole, bolted to wall with two 10mm bolts (product code 8448Z0) and including lotus half mounted pedestal and hanger mechanism (product code 745201)	No.	3		
3.25.1.2		Vaal sanitary ware hibiscus china close coupled washdown suit colour white, comprising 90 degrees outlet open rim pan (code:772600) and matching 6/3 litre top dual flush cistern (code:710740) including lid and fitments.	No.	3		
3.25.1.3		Vaal sanitary ware protea paraplegic white vitreous china floor mounted paraplegic wash down suite (product code 750200) comprising 90 degrees outlet pan (product code 7502) and matching 9 litre cistern (product code 710539), including lid, fitments and purpose-made chromium plated side flush lever mounted on wall adjacent to cistern with heavy duty double flap white plastic seat.	No.	3		
3.25.1.4		Vaal sanitary ware 600x385x380mm Lavatera vitrous china wall mounted top inlet (product code 704001) including 38mm chromium plated domical grating (product code 8787Z0) and chromium plated top inlet spreader (product code 7041Z00) flush valve (by others) including 4,5 litre symphonic cistern (product code 1722Z10, fixed on and including two hanger brackets (product code 8127Z0). (or equal approved)	No.	3		
3.25.1.5		Vaal sanitary ware 510mm x 400 x 170mm Paraplegic Daisy white wall mounted basin with three semi punched tap holes, intergrated overflow and chains tay hole through the centre semi punched tap hole. (Code 700803WH)	No.	3		
3.25.2		**TAPS, VALVES ETC**				
3.25.2.1		"Cobra Watertech" or equally approved				
3.25.2.2		(Code :SE-953) Cobra watertech selene single lever 15mm chrome single tap hole basin mixer with "Cobra" aqua waste, mounting kit and flexible connection tubes manufactured in accordance to SANS 1480:2005 (BS EN 1286).	No.	32		
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			BROUGHT FORWARD			
3.26		**PLUMBING AND DRAINAGE**				
3.26.1		**EXCAVATIONS**				
3.26.1.1		Excavation in earth not exceeding 2m deep Trenches				
3.26.1.1.1		Back excavation of vertical sides of excavation in earth not exceeding 500mm deep for working space, including backfilling compacted to 93% Mod AASHTOdensity	m^3	100		
3.26.1.1.2		Backfilling to trenches, holes, etc	m^3	100		
3.26.2		**uPVC PIPES**				
3.26.2.1		50mm Pipes laid in including trenches not exceeding 1m deep	m	100		
3.26.2.2		110mm Pipes laid in including trenches not exceeding 1m deep	m	50		
3.26.3		**Extra over uPVC pipes for fittings**				
3.26.3.1		50mm Bend				
3.26.3.2		50mm Junction	No.	8		
3.26.3.3		110mm Straight Connector	No.	8		
3.26.3.4		110mm Bend	No.	5		
3.26.3.5		110mm Y junction	No.	32		
3.26.3.6		110mmn Gulley P-Trap	No.	38		
3.26.3.7		110mm Gulley Head	No.	6		
3.26.4		**Precast concrete gulleys:**	No.	6		
3.26.4.1		150mm Gulley not exceeding 2000mm deep	No.	6		
3.26.5		**SANITARY PLUMBING**				
3.26.5.1		**uPVC pipes**				
3.26.5.1.1		50mm Pipes	m	30		
3.26.5.1.2		50mm Pipes laid in and including trenches under floors	m	30		
3.26.5.2		**Extra over uPVC pipes for fittings**				
3.26.5.2.1		50mm Bend	No.	30		
3.26.5.2.2		50mm Access bend	No.	6		
3.26.5.2.3		50mm Junction	No.	10		
3.26.5.2.4		50mm Access junction	No.	10		
3.26.5.3		**Sundries**				
3.26.5.3.1		Testing Water Pipes	Sum	1		
3.27		**WATER SUPPLIES**				
3.27.1		**Copper pipes**				
3.27.1.1		15mm Pipes	m	20		
3.27.1.2		22mm Pipes	m	30		
3.27.2		**Extra over copper pipes for fittings**				
3.27.2.1		15mm Fittings	No.	20		
3.27.2.2		22mm Fittings	No.	25		
TOTAL CARRIED TO SUMMARY						

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Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
4		**SECTION 4 : WATER SUPPLY AND CONNECTIONS (LI)**				
4.1	1200DB	**EARTHWORKS (PIPE TRENCHES)**				
4.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	200		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	1		
4.2	1200DB	**EXCAVATION**				
4.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up - to				
		a) 0,0m 1,0m	m	75		
		b) 1,0m 2,0m	m	-		R/Only
4.2.2	8.3.2.(b)	Extra-over item 7.2.1				
		a) Hard rock excavation (Prov)	m^3	25		
4.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	5		
4.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	33		
4.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	33		
4.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	58		
		b) long haul : over 1km (Prov)	m^3-km	72		
4.3	1200DB	**EXISTING SERVICES**				
4.3.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	no	-		R/Only
		b) Sewer pipeline	no	1		
		c) Electrical line	no	1		
4.3.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	m	-		R/Only
		b) Sewer pipeline	m	-		R/Only
		c) Electrical line	m	-		R/Only
4.4	1200LB	**PIPE BEDDING**				
4.4.1		Provision of selected granular material for bedding cradle flexible pipes, obtained from :				
	8.2.1 (a)	a) trench excavation	m^3	80		
	8.2.2.2 (a	b) borrow pits (Prov)	m^3	10		
	8.2.2.3 (a	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
4.4.2	8.2.2.3	Provision of 19mm nom. Size crushed rock imported from commercial sources (Prov) (Transport included)	m^3	-		R/Only
4.4.2		Provision of selected fill material for blanket obtained from :				
	8.2.1(b)	a) trench excavation	m^3	80		
	8.2.2.2(b	b) borrow pits (Prov)	m^3	10		
	8.2.2.3 (a	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
4.4.3	8.2.3	Concrete Bedding Craddle (Class 15/20 concrete)				
4.4.3.1		The rate shall cover the cost of providing and placing the concrete screed and cradle and,where relevant, formwork for pipe of all diameters regardless of the method of construction (Provisional)	m^3	-		R/Only
4.4.4	8.2.4	Encasing of pipes of class 15/20 concrete for the following pipe sizes:				
		a) 50dia (prov)	m^3	20		R 0,00
		b) 110 dia (prov)	m^3	-		R/Only
4.4.5	8.2.5	Overhaul of imported material for bedding cradle and selected fill blanket (Provisional)	m^3-km	100		
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Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
4.5	1200L 8.2.1	**PRESSURE PIPE AND PIPE FITTINGS**				
4.5.1		**Supply, lay and bed on flexible bedding, complete with couplings**				
		(a) HDPe pipes				
		(ii) 32m dia.	m	200		
		(iii) 40m dia.	m	-		R/Only
		(b) PVCs pipes				
		(i) 75m dia.	m	-		R/Only
		(ii) 110m dia.	m	-		R/Only
4.5.2		**Extra over item 12.12.2 for supplying, fixing and bedding of gate valves and line strainers on HDPe pipes**				
		(a) 40mm dia. Isolating valve	No.	4		
		(b) 40mm dia. Line strainer	No.	4		
		(c) 20 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.			R/Only
		(d) 20 dia. Non return valve	No.	1		
		(e) 20 dia. Isolating valve	No.	1		
		(f) 50 dia. Non return valve	No.	1		
		(g) 50 dia. Isolating valve	No.	1		
		(h) 50 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.	-		R/Only
		(i) 63mm dia. Isolating valve	No.	-		R/Only
		(j) 63mm dia. Line strainer	No.	-		R/Only
		(k) 63 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.	-		R/Only
		(l) 75 dia. Non return valve	No.	-		R/Only
		(m) 75 dia. Isolating valve	No.	-		R/Only
		(n) 75 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.	-		R/Only
4.6		**ERF CONNECTIONS**				
4.6.1		Excavate, supply, lay, bed on sandy material, test and backfill complete erf connection as shown on drawings				
		(a) Short length (20m max)	No.	1		
		(b) Long length (30m max)	No.	1		
4.7	8.3.6.(c)	**REINSTATE ROAD WORKS**				
		a) Paving block surface	m^2	80		
		b) 50mm bitumen surface	m^2	40		
		c) Pavement layers	m^3	24		
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Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
5		**SECTION 5 : SEWER CONNECTIONS (LI)**				
5.1	**1200DB**	**EARTHWORKS (PIPE TRENCHES)**				
5.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	330		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	1		
5.2	**1200DB**	**EXCAVATION**				
5.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up-to				
		a) 0,0m 1,0m	m	211		
		b) 1,0m 2,0m	m	-		R/Only
5.2.2	8.3.2.(b)	Extra-over item 5.2.1				
		a) Hard rock excavation (Prov)	m^3	53		
5.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	21		
5.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	78		
5.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	78		
5.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	169		
		b) long haul : over 1km (Prov)	m^3-km	211		
5.3	**1200DB**	**EXISTING SERVICES**				
5.3.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	No.	2		
		a) Sewer pipeline	No.	-		R/Only
		a) Electrical Line	No.	1		
5.3.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	No.	-		R/Only
		a) Sewer pipeline	No.	-		R/Only
		a) Electrical Line	No.	-		R/Only
5.4	**1200LB**	**PIPE BEDDING**				
5.4.1		Provision of selected granular material for bedding cradle class C, obtained from :				
5.4.1.1	8.2.1 (a)	a) trench excavation	m^3	132		
	8.2.2.2 (a)	b) borrow pits (Prov)	m^3	17		
	8.2.2.3 (a)	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
5.4.2	8.2.2.3	Provision of 19mm nom. Size crushed rock imported from commercial sources (Prov) (Transport included)	m^3	-		R/Only
5.4.3		Provision of selected fill material for blanket obtained from :				
	8.2.1(b)	a) trench excavation	m^3	132		
	8.2.2.2(b)	b) borrow pits (Prov)	m^3	17		
	8.2.2.3 (a)	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
5.4.4	8.2.3	Concrete Bedding Craddle (Class 15/20 concrete)				
5.4.4.1		formwork for pipe of all diameters regardless of the method of construction (Provisional)	m^3	-		R/Only
5.4.5	8.2.4	Encasing of pipes of class 15/20 concrete for the following pipe sizes:				
		a) 50dia (prov)	m^3	-		R/Only
		b) 110 dia (prov)	m^3	20		
5.4.6	8.2.5	Overhaul of imported material for bedding cradle and selected fill blanket (Provisional)	m^3-km	165		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
5.5	**1200LD**	**PIPE LAYING**				
5.5.1	8.2.1	Supply, lay, joint and test pipes on class F bedding :				
5.5.1.1		PVC sewer pipes complete with couplings				
		a) 50dia (prov)	m	-		R/Only
		b) 110 dia (prov)	m	330		
5.5.2		Galvanised Steel Pipes and Fittings				
5.5.2.1	8.2.1	Supply, fix into position the following pipes - galvanised (Conforming with SABS 966/1976) each pipe fitted at one end with socket for mechanical joint for diameters:				
		a) 110mm dia.	No.	-		R/Only
5.5.3	8.2.1	Extra-over for item 5.5.1 & 2 for laying pipes on :				
		a) 19mm stone bedding (Prov)	m	-		R/Only
		b) Concrete cradle	m	-		R/Only
		c) Concrete encasing (Prov)	m	20		
		d) Class B bedding (Prov)	m	-		R/Only
5.6	8.3.6.(c)	**REINSTATE ROAD WORKS**				
		a) Paving block surface	m^2	132		
		b) 50mm bitumen surface	m^2	66		
		c) Pavement layers	m^3	40		
5.7	**1200LD**	**MANHOLES**				
5.7.1	8.2.3	Construction of 1000mm dia precast manholes including concrete blending layer,inlet and outlet pipes, flexible joints, junctions, tapers, channel sections in floor slabs, benching and type 4 concrete cover and frame for depths :				
		Over Up to				
		a) 0,0m 1,0m	No.	5		
		b) 1,0m 2,0m	No.	-		R/Only
5.7.2	8.2.3	Extra-over item 5.7.1 for supply and installation of type 2A heavy duty cover and frame	No.	-		R/Only
5.8	**1200LD**	**CONNECTIONS**				
5.8.1	8.2.11	Break in to existing manhole and connect new pipeline, include for pipe piece and appurtenance	No.	2		
5.8.2	8.2.11	Connection to existing sewer (Provisional)	No.	2		
5.8.3	8.2.6	Erf connections 110mm dia. as per drawings				
		(a) complete off pipe of 110mm dia. with length of connection not exceeding				
		i) 50,0m	No.	1		
		ii) 110,0m	No.	1		
		iii) 160,0m	No.	1		
TOTAL CARRIED TO SUMMARY						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
6		**SECTION 6 : SIDE-WALK WAYS (LI)**				
6.1	**SABS 1200 LB**	**SITE CLEARANCE**				
6.1.1	8.2.1	Clear and grub site of all vegetation trees as indicated by the Engineer.	ha	0,1		
6.1.2	8.2.2	Remove and grub large trees and tree stumps girth				
		(a) 1m to 3m	No.	2		
6.1.3		Remove topsoil to nominal depth of 150mm and stockpile	m^3	117		
6.1.4	2.3	Use non-selective herbicide (obit) to kill all material	m^2	780		
6.2	1200DM	**EARTHWORKS (SUBGRADE)**				
6.2.1	8.3.3	**TREATMENT OF ROADBED**				
6.2.1.1		Rip and recompact 150mm to 90% mod. AASHTO	m^3	117		
6.2.2		**EARTHWORKS**				
6.2.2.1	8.3.4	Cut to fill, compacted to 90% mod AASHTO	m^3	35		
6.2.2.2	8.3.4	Borrow to fill (from stockpile) compacted to 90% mod AASHTO	m^3	70		
6.2.2.3	8.3.5	Selected layer (G7) compacted to 93% mod AASHTO				
		a) From onsite excavations	m^3	-		R/Only
		b) From commercial sources	m^3	-		R/Only
6.2.2.4	8.3.6	Extra over items 8.2.1 to 8.2.4 excavating and breaking down material in hard excavation	m^3	-		R/Only
6.2.2.5	8.3.7	Cut to spoil or stockpile from:				
		a) Soft excavation	m^3	316		
		b) Extra over for Hard excavation	m^3	36		
6.2.2.6	8.3.8	Removal of oversize material	m^3	4		
6.2.2.7	8.3.15	Catchwater mounds/berms and channels (as per detail)	m^3	-		R/Only
6.3	1200ME	**SUBBASE (Minimum G7)**				
6.3.1	8.3.2	Construct gravel subbase with material from designated excavations or stockpile in all materials to 95% mod AASHTO	m^3	-		R/Only
6.3.2	8.3.3	Construct gravel subbase with material from commercial sources in all materials to 95% mod AASHTO	m^3	-		R/Only
6.4	**1200ME**	**BASE(Minimum G5/C4)**				
6.4.1	8.3.1	Construct 150mm base with gravel material from designated excavations or stockpile	m^3	-		R/Only
6.4.2	8.3.3	Construct 150mm base with gravel material from commercial sources	m^3	117		
6.4.3	8.3.5	Process base by means of:				
		a) Screening (provisional)	m^3	12		
		d) Stabilisation	m^3	-		R/Only
6.4.4	8.3.8	Stabilizing agent				
6.4.4.1		Road lime	t	-		R/Only
6.4.4.2		Portland cement	t	-		R/Only
6.5		**HAULING**				
6.5.1		Overhaul of excavated material to designated dump site, for over haul exceeding 1km	m^3/km	356		
6.5.2		Overhaul of imported pavement material from borrow pit, for haul exceeding 1km	m^3/km	1780		
6.6	**1200MJ**	**SEGMENTED PAVEMENT**				
6.6.1	8.2.1	Provide edge restraints as shown on drawings for (figure 12)				
		a) All paving	m	-		R/Only
6.6.2	8.2.3	Cut units to fit edge restraints	m	10		
6.6.3	8.2.2	Construct precast concrete segmented paving with 25mm sand bed complete				
		a) 80mm Heavy Duty Concrete blocks (as per engineer's specification)	m^2	-		R/Only
		b) 60mm Concrete blocks (as per engineer' specification)	m^2	780		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
6.6.4	8.2.4	Additional rolling for loads exceeding 30KN if ordered				
		(Provisional)				
		a) All paved areas as depicted on the drawings	m^2	50		
6.7	1200	**KERBING AND CHANNELLING**				
6.7.1	8.2.1	Precast concrete kerb, including all transitions				
		a) Straight				
		i) Figure 3	m	-		R/Only
		ii) Figure 7	m	1040		
		iii) Figure 8b	m	-		R/Only
		iv) Figure 8c	m	-		R/Only
		b) Curved (radius up to 10m)				
		i) Figure 3	m	-		R/Only
		ii) Figure 7	m	104		
6.7.2	8.2.7	Trimming of excavations for concrete lined open drains in all materials	m^3	-		R/Only
6.7.3	8.2.8	Cast in-situ concrete lining of open drains approx 1m wide, 100mm thk(20MPa), including smooth formwork, joint filler, joint sealant, etc. complete	m^3	-		R/Only
6.8		**RETAINING STRUCTURE**				
6.8.1		Construct segmented retaining block structure using Terrace Block TB 380 with sliders on top row to varying heights, but not exceeding 1,500mm at 65 degrees on strip foundation to manufacturer's specificationsmooth formwork, joint filler, joint sealant, etc. complete	m^2	-		R/Only
6.9	1200	**ANCILLARY ROADWORKS**				
6.9.1	8.3.1	Sign faces with Class I background. Symbols, characters, legend, and borders in black or Class I retroreflective material to SADC-RTSM manufactured of :				
		a) Approved 1.4 mm thick pre-painted galvanized steel plate of area:				
		i) Up to 2 m^2	m^2	-		R/Only
		ii) Exceeding 2 m^2 but not 10 m^2	m^2	-		R/Only
6.9.2	8.3.3	Sign Supports (including excavation, backfilling, etc. complete)				
		a) Square steel tubing:				
		i) 50 mm x 1,6 mm wall thickness	m	-		R/Only
		ii) 50 mm x 2.0 mm wall thickness	m	-		R/Only
		iii) 75 mm x 2,0 wall thickness	m	-		R/Only
		Advertising Board	No.	-		R/Only
		Directional Board	No.	-		R/Only
6.10		**ROAD MARKINGS**				
6.10.1	8.4.1	Non-reflectorized paint applied at nominal rate of 0,42 l/m2				
		a) White lines (broken or unbroken) (100 mm wide)	m	30		
		b) White lines (broken or unbroken) (150 mm wide)	m	-		R/Only
		c) White characters and symbols	m^2	-		R/Only
6.10.3	8.4.4	Setting out and premarking of lines (excluding traffic island markings, characters, and symbols)	m	30		
TOTAL CARRIED TO SUMMARY						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
7		**SECTION 7 : ELECTRICAL SUPPLY AND CONNECTIONS (LI)**				
		Complete installation including commissioning of new electrical installations: Electrical Reticulation; lighting and lightning protection included				
7.1	**1200DB**	**EARTHWORKS**				
7.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	600		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	3		
7.2	**1200DB**	**EXCAVATION**				
7.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up - to				
		a) 0,0m 1,0m	m	600		
		b) 1,0m 2,0m	m	-		R/Only
7.2.2	8.3.2.(b)	Extra-over item 6.2.1				
		a) Hard rock excavation (Prov)	m^3	36		
7.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	108		
7.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	158		
7.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	79		
7.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	77		
		b) long haul : over 1km (Prov)	m^3km	96		
7.3	**1200DB**	**EXISTING SERVICES**				
7.3.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	No.	5		
		b) Sewer pipeline	No.	2		
		c) Electrical line	No.	-		R/Only
7.3.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	m	-		R/Only
		b) Sewer pipeline	m	-		R/Only
		c) Electrical line	m	-		R/Only
7.4		**CABLE MARKERS**				
7.4.1		PVC warning marking tape	m	-		R/Only
7.4.2		Concrete route markers	No.	2		
7.5		**MANHOLES**				
7.5.1		600 x 600 x 600 mm	No.	5		
7.6		**SLEEVES**				
7.6.1		20mm dia	m	-		R/Only
7.6.2		25mm dia	m	-		R/Only
7.6.3		32mm dia	m	-		R/Only
7.6.4		50mm dia	m	600		
7.6.5		75mm dia	m	-		R/Only
7.6.6		100mm dia	m	-		R/Only
7.7		**DRAW WIRE**				
7.7.1		Galvanised draw wire	m	600		
SUB - TOTAL CARRIED FORWARD						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
7.8		**CABLES, CONDUCTORS & SLEEVES**				
		Low Voltage Cables 600/1000V grade PVC/PVC/SWA/PVC stranded copper conductor cable (terminations and earth conductors elsewhere measured) Cable laid in trenching (excavations elsewhere measured)				
7.8.1		**Supply and install PVC insulated amoured copper cables(XLPE)**				
7.8.1.1		35 mm^2 3core PVC insulated copper cable	m	120		
7.8.1.2		16 mm^2 3core PVC insulated copper cable	m	330		
7.8.1.3		6mm^2 3 core PVC insulated copper cable	m	60		
7.8.2		**Cable Terminations complete including glands, shrouds, lugs, connections and commissioning**				
7.8.2.1		6mm^2 x 3-core	No.	10		
7.8.2.2		10mm^2 x 3-core	No.	4		
7.8.2.3		16mm^2 x 3-core	No.	4		
7.8.2.4		35mm^2 x 3-core	No.	3		
7.8.3		**Bare Stranded Copper Earth Wire strapped to Cables (terminations elsewhere measured)**				
7.8.3.1		25mm^2	m	330		
7.8.3.2		10mm^2	m	120		
7.8.3.3		6mm^2	m	90		
7.8.3.4		4mm^2	m	60		
7.8.4		**Bare Stranded Copper Earth Wire Terminations complete including drilling, bolting, lugs, connections and commissioning**				
7.8.4.1		25mm^2	No.	1		
7.8.4.2		10mm^2	No.	6		
7.8.4.3		6mm^2	No.	1		
7.8.4.4		4mm^2	No.	1		
7.9		**CONDUCTORS**				
7.9.1		Supply and install wire to serve facilities items(luminaires, lights and plugs 600/1000V grade PVC insulated stranded copper conductors drawn into conduit				
7.9.1.1		4mm^2	m	330		
7.9.1.2		2.5mm^2	m	330		
7.9.1.3		2.5mm^2 BCEW	m	330		
7.10		**APPLIANCES**				
		Supply and install complete aplliances with fixed cover plates in flush boxes (boxes elsewhere measured)				
7.10.1		**Socket outlets**				
7.10.1.1		16 Ampere 3-Pin 250V normal switch socket outlet wall mounted	No.	2		
7.10.2		**Light Switches and Isolators**				
7.10..2.1		16 Ampere 250V Daylight Switches	No.	10		
7.10..2.2		16 Ampere 250V grade single lever one way	No.	6		
7.10..2.3		16 Ampere 250V grade single lever two way	No.	6		
7.10..2.4		20 Ampere 250V grade double pole isolator (Geyser)	No.	-		R/Only
7.10..2.5		60 Ampere 250V grade double pole isolator (Stove)	No.	-		R/Only
7.10..2.6		Telkom point	No.	-		R/Only
7.10..2.7		TV point,Complete Disch installation(Where indicated)	No.	-		R/Only
7.11		**LUMINAIRES**				
7.11.1		2x54w Open Channel Flourescent light fitting	No.	10		
7.11.2		Bulkhead luminaire with polycarbonate complete with 14W CFL	No.	8		
7.12		**AREA AND PERIMETER LIGHTING**				
7.12.1		Complete Beka Lane 2 x 26W CFL on 4m high pole	No.	4		
7.12.2		Earthing of the all electrical installation including Roof sheeting and termination of down conductor as per the regulation.	Sum	1		
7.12.3		Supply and intall 2x500w HPS floodlight mounted 180 deg on a 12m galvanized poles complete with circuit breaker band earthing to be burried 500mm underground	No.	8		
7.13		**TESTING AND COMMISSIONING**				
7.13.1		Testing and commissioning of the complete electrical installation	Sum	1		
7.14		**ISSUE OF COC**	Sum	1		
7.15		**COMPLETE SURVEY AND CIVIL WORKS ASSOCIATED TO POLE INSTALLATION**	Sum	1		
7.17		**CRANE HIRING AND OTHERS**	Sum	1		
TOTAL CARRIED TO SUMMARY						

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

SUMMARY OF SCHEDULE OF QUANTITIES	AMOUNTS
SECTION 1: PRELIMINARY AND GENERAL, PRIME COST SUMS AND PROVISIONAL SUMS	
SECTION 2 : PERIMETER FENCING AND SECURITY FEATURES (LI)	
SECTION 3 : GUARD HOUSE (LI)	
SECTION 4 : WATER SUPPLY AND CONNECTIONS (LI)	
SECTION 5 : SEWER CONNECTIONS (LI)	
SECTION 7 : ELECTRICAL SUPPLY AND CONNECTIONS (LI)	
SECTION 6 : SIDE-WALK WAYS (LI)	
SUB-TOTAL 1	
CONTINGENCY AMOUNT	R 200 000,00
SUB-TOTAL 2	
VAT @ 15%	
GRAND TOTAL	

PART C3: SCOPE OF WORK (BLUE PAGES)

C3.1 DESCRIPTION OF WORKS C.73

C3.2 EMPLOYER'S AGENTING C.77

C3.3 PROCUREMENT C.78

C3.4 CONSTRUCTION C.85

C3.1 DESCRIPTION OF WORKS

C3.1.1 Employer's Objectives

The employer's objective is to intensify security measures by constructing and installing security features for the municipal offices. while making optimum use of local labour, and creating jobs for locals during construction and creating business opportunities for local contractors and SMME's. The project implementation will be designed to maximise EPWP sector quotas and opportunities

C3.1.2 Overview of Works

The successful service providers (contractor) shall execute and not be limited to the following:

a) Security Perimeter fences with boom gates
b) Guardhouse(s)
c) Lighting
d) Security CCTV cameras
e) Demarcated walk ways
f) Support services
g) Municipal name brandings / boards

C3.1.3 Extent of Works

The main components of the works are summarised as follow;

h) Site establishment
i) Setting out of the works
j) Clearing and grubbing
k) Earthworks
l) Construction of guardhouses
m) Erection of fence and gates
n) Installation of CCTV cameras and flood lights
o) Construction and connections of water supply
p) Construction and connection of sewer system
q) Supply, installation and connections of electricity
r) Branding of the offices
s) Site cleaning

t) Site de-establishment

The description of the works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this contract.

C3.1.4 Location of the Works

The project is located in the Musina town central business district (CBD). It is within the jurisdiction of Musina Local Municipality in Vhembe District Municipality of Limpopo Province in Republic of South Africa, and it is Ward 1. The project co-ordinates are as tabled.

Project Co-ordinates		
Description	**Longitude**	**Latitude**
Main Office	30° 2'27.74"	22°21'4.33"
Old Traffic Office	30° 2'42.51"	22°20'36.24"

C3.1.5 Temporary Works

The Contractor is to set up a site office for his use as well as for the Employer's Agent's use. The contractor shall submit proposals relating to the site offices and infrastructure to Employer's Agent for approval. The site office to meet the relevant sanitation requirements.

At the end of construction, the temporary works to be dismantled and the site restored as far as possible to what it is.

C3.1.6 General Information

C3.1.6.1 Drawings

The reduced drawings contained in Annexure C5.3 that form part of the Tender document shall be used for Tender purposes only. Further drawings are to be provided on an on-going basis by the Employer's Agent.

Any information in the possession of the contractor, which the resident Employer's Agent requires to complete the as-built drawings, shall be supplied to the resident Employer's Agent before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Employer's Agent. The Employer's Agent will supply all figured dimensions omitted from the drawings.

C3.1.6.2 Power, Water Supply and Other Services

The contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost of providing these services will be deemed to be included in the rates and amounts Tendered for the various items of work for which these services are required.

C3.1.6.3 Contractor's Camp Site and Security

The contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel and all regulations stipulated by the local authority shall be adhered to.

It is anticipated that the contractor's choice of a camp site will be influenced by the availability of telephone and electrical connections as well as the supply of potable water.

Provision is made in these specifications for the erection of a security fence around the site offices. The contractor shall be responsible for the security of his

personnel and constructional plant on and around the site of the works and for the security of his camp, and the employer will consider no claims in this regard.

C3.1.6.4 Additional Requirements for Construction Activities

C3.1.6.4.1 The contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

C3.1.6.4.2 The contractor shall submit proposals in connection with directional signs to the Employer's Agent for approval.

C3.1.6.5 Programme Requirements for Construction Activities

The contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

C3.1.6.6 Construction in Confined Areas

It may be necessary for the contractor to work in confined areas. In certain areas the width of the fill material and pavement layers may reduce to zero and the working space may be confined. The method of construction in these confined areas depends on the contractor's construction plant. However, the contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and amounts Tendered will be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

C3.1.7 Labour Regulations

C3.1.7.1 **Payment for the labour-intensive component of the works**

Payment for works identified in clause 2.3 “the Extent of the Project” in the Project Specifications as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

C3.1.7.2 **Applicable labour laws**

Sectorial determination 2: Civil Engineering sector

C3.2 EMPLOYER’S AGENTING

C3.2.1 Design

(a) The **Employer** is responsible for the design of the permanent Works as reflected in these Contract Documents unless otherwise stated.

(b) The **Contractor** is responsible for the design of the temporary Works and their compatibility with the permanent Works.

(c) The **Contractor** shall supply all details necessary to assist the Employer’s Agent in the compilation of the as-built drawings.

C3.2.2 Employer’s Design

(a) Detail description of Works

(b) General Works

(c) Sign Gantries.

C3.2.3 Contractor’s Design

Where contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional Employer’s Agent’s design certificate.

C3.2.4 Design procedures

All designs and modifications thereto shall be communicated in writing and the contractor and Employer’s Agent shall maintain master lists to record and track all transactions.

C3.3 PROCUREMENT

C3.3.1 DEFINITIONS

“The community” means individual and communal property owners, organised groups of road users, other interest groups and departments or spheres of government that may be affected by the location, construction, operation and maintenance of the road to which this contract applies.

"Conventional contract" means any contract for the execution of civil engineering or building or similar construction works, in which the liabilities and responsibilities of the two parties thereto are assigned essentially in a manner which is consistent with that set out in the General Conditions of Contract for Road and Bridge Works for State Road Authorities, 1998 (as published by the Committee of Land Transport Officials) or other similar documents.

"Conventional subcontract" shall be similarly and appropriately construed.

“Contract Participation Goal” (or CPG), is the value of goods, services and works, excluding VAT, for which the Contractor proposes to engage labour and subcontractors.

“Contractor" means any person or group of persons in association, or firm, or body corporate who is registered with the Construction Industry Development Board (CIDB) and:

a) have a contractor grading designation equal to our higher than a contractor grading designation specified for the Contract, or

b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above

“Subcontractor" shall be similarly and appropriately construed.

“Emerging contractor” means an ABE that cannot reasonably be categorized as a conventional contractor defined above.

“Affirmable Business Enterprise (ABE)” means a business which adheres to statutory labour practices, is a legal entity, registered with the South African Revenue Service and a continuing and Independent Enterprise for profit, providing a Commercially Useful Function and:

a) Which is at least two thirds owned by one or more previously disadvantaged individuals or, in the case of a company, at least two thirds of the shares are owned by one or more previously disadvantaged individual; and

b) Whose management and daily business operations are in the control of one or more of the previously disadvantaged individuals who effectively own it.

"Key Personnel" means all contracts managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators, and all other personnel in the permanent employ of the Contractor or his subcontractor who posses special skills and/or who play key roles in the Contractor's or subcontractor's operations.

"Worker" for the purposes of this specification means any person, not being one of the defined key personnel of the Contractor or his subcontractor, who is engaged by the Contractor or subcontractor to participate in the execution of any part of the contract works and shall include unskilled labour, semi-skilled and skilled labour, artisans, clerical workers and the like.

“Workforce” means the aggregate body comprising all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all his subcontractors.

“Subcontractor” means any person or group of persons in association, or firm, or body corporate (whether formally constituted or otherwise) not being the Contractor, to whom specific portions or aspects of the works are sublet or subcontracted by the Contractor in accordance with the provisions of the contract.

“Level of subcontractor” means the level of responsibility carried by and the assistance to be provided to the different grades of subcontractor in the execution of subcontracts.

“**Project Committee**” is the committee comprising out of the Employer’s representative, The Engineer or his representative, the Contractor or his representative and the CLO.

“**CLO**” is the Community Liaison Officer as appointed by the Contractor and paid under the Contract.

C3.3.2 LABOUR ENHANCED CONSTRUCTION

The Contractor's attention is drawn to the fact that it is an objective of the contract to maximize the labour content of certain operations or portions thereof. In this regard, where the specified work allows for a choice between mechanical or labour-enhanced means, the former shall generally be kept to the practical minimum.

The Contractor shall submit on a monthly basis on the date as determined by the Employer, daily labour returns on the prescribed templates to the Engineer indicating the numbers of labour employed on the works and the activities on which they were engaged.

It is also an objective to utilize SMME's / ABE's in the vicinity of the project, the development of these resources in the execution of the project, and by maximizing the amount of project funds retained within the project locality.

C3.3.3 TEMPORARY WORKFORCE

a) **Record of workforce and subcontractors**

The Contractor shall maintain accurate and comprehensive records of all workers engaged on the contract and shall provide to the Engineer at monthly intervals from the commencement of the contract, interim records substantiating the actual numbers of employment opportunities which have been generated to date and the amounts actually paid in respect thereof. Such interim records shall be in a format approved by the Employer. Labour records of emerging contractors, SMME or ABE subcontractors, where applicable, shall also be provided by the Contractor and shall be deemed to form part of the workforce.
The Contractor shall, on completion of the contract, and as a pre-requisite to the release of any retention money, provide the Engineer with independently audited documentary evidence of the total number of employment opportunities actually generated during the contract.

The value of the target amount (minimum Contract Participation Goal) spent on local labour is prescribed elsewhere in this document.

b) **Recruitment and selection procedures**

The Contractor shall be responsible for the final selection of workers and subcontractors to constitute the temporary workforce but in doing so, shall adhere to the procedures adopted by the CLO along the following guidelines:

The Contractor shall advise the Engineer in writing, of the numbers of each category of temporary worker which he requires, together with the personal attributes which he considers desirable that each category of worker shall possess (taking due cognizance of the provisions of the contract relating to training).

The CLO shall take the necessary actions to identify potential workers for the temporary workforce from communities in the vicinity of the works. The details of all persons applying for employment shall be recorded, including inter-alia:

- Name, address, age and sex
- Marital status and number of dependants
- Qualifications and previous work experience (whether substantiated or not)
- Period since last economically active
- Preference for type of work or task.

The CLO shall make a selection of workers from amongst the applicants, taking due cognisance of his requirements for the workforce as supplied by the Contractor and the provisions of the contract in regard to the provision of training to selected members of the workforce and in accordance with the following principles:

No potential temporary worker shall be precluded from selection by virtue of a lack of skill in any suitable operation forming part of the works, unless:

- All available vacancies have been or can be filled by temporary workers who already possess suitable skills; or
- The completion period allowed in the contract, or the remaining portion of the contract period (as the case may be) is insufficient to facilitate the creation of the necessary skills;

- The Contractor shall make a final selection from the list provided by the CLO using the following criteria:

- Preference shall be given to the long term unemployed and single heads of households
- In so far as is reasonably practicable, give priority to accommodating the applicants' expressed preferences regarding the types of work for which they are selected and shall not be prejudicial to youth over the age of fifteen years and women.

The same provisions shall apply as is in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time during the contract.

c) **Terms and Conditions pertaining to the Employment of the Temporary Workforce and subcontractors**

The onus shall be on the Contractor to ensure that all the requirements of all the acts relating to the employment of workers and subcontractors are observed.

d) **Labour Relations and Worker Grievance Procedures**

In accordance with the provisions of the General Conditions of Contract, the Contractor shall, at his own cost, be fully responsible for the establishment and maintenance of satisfactory labour relations on site and the resolution of all grievances of temporary workers and subcontractors as may occur.

The Contractor shall at all times adhere to the accepted norms and standards of labour relations prevailing generally in the civil engineering construction industry and shall conduct himself in a fair and reasonable manner, within the constraints as may be imposed upon him by the terms of the contract.

In the event of any temporary worker engaged by the Contractor in terms of the contract, being aggrieved on any issue, he shall have the right to nominate and be supported in any inquiry or disciplinary hearing or investigation instituted by the Contractor, by one member of the temporary workforce.

In the event of any grievance not being satisfactorily resolved through the application of normal dispute resolution procedures described above, then either the Contractor or the worker concerned may require that the matter be referred to the PC for further consideration, with a view to facilitating resolution thereof.

C3.3.4 TRAINING OF THE TEMPORARY WORKFORCE

Contractor is expected to train some local labourers during execution of the works.

C3.3.5 ACCREDITED TRAINING AND ATTENDANCE

Accredited training to be performed by accredited trainer.

C3.3.6 PENALTIES FOR NON-COMPLIANCE

Any deliberate failure or neglect by the Contractor to comply with the provisions of this specification, or any deliberate omission or neglect by the Contractor in adhering to or applying the principles as are described and inherent in this specification, shall be deemed to constitute a warrant for the Engineer to act in terms of the Conditions of Contract or the penalties specified for not attaining the prescribed CPG's will be applied and doubled.

C3.3.7 MEASUREMENT AND PAYMENT

ITEM	**UNIT**
C3.3.6	**Penalties**
b) Targeted Labour	percentage point

The penalty for item (b) for not attaining at least the tendered number of person-days (refer to Part T2: Returnable Documents) will be calculated as follows:

In the event that the Tenderer fails to substantiate that any failure to achieve the Contract Participation Goal was due to quantitative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, it shall be liable to pay to the Employer a financial penalty calculated in the following manner:

$$P = \mathbf{1.0} \times \frac{(D - Do)}{(100)} \times N_A$$

Where

D = tendered Contract Participation Goal percentage

Do = the Contract Participation Goal which the Engineer based on the credits passed, certifies as being achieved upon completion of the Contract

N_A = Net Amount (Contract expenditure, excluding VAT)

P = Rand value of penalty payable.

The Minimum set-aside on this contract for Targeted Labour is **7.5**%

C3.4 CONSTRUCTION

Site Establishment

The Contractor shall negotiate with property owners and make his own arrangements to obtain sites for the erection of offices, laboratories, yards, etc. Written approval must be obtained from the owners on whose property the camp is to be situated. The choice of all sites for the establishment of camps is subject to the approval of the Engineer. Campsites within the road reserve will not be permitted. The site for the Engineer's offices and laboratories shall not be used for the accommodation or housing of the Contractor's personnel and employees.

The Contractor shall make his own arrangements concerning the supply of electrical power, water, telephone and all other services, both for use at the site establishment area as well as for the use in the construction of the Works. No direct payment shall be made for the provision of any service and the cost thereof shall be deemed to be included in the rates tendered for the various items of work for which these services are required

Survey Control and Setting Out of the Works

Reference and level beacons will be shown to the Contractor by the Engineer at the commencement of the Contract and the Contractor will be responsible for transferring the data to the Site of Works.

The Contractor shall check the condition and accuracy of all reference and level beacons and satisfy himself that they have not been disturbed and are true with regard to position and level. A beacon that has been disturbed shall not be used until its true position and level have been re-established and the new values have been certified by the Engineer. The Contractor shall thereafter be held entirely responsible for the protection of all reference and level beacons.

The Contractor shall employ a capable surveyor to set out the Works to the required lines and levels. The Engineer shall be informed immediately should any discrepancy be discovered between the levels or dimensions obtained by the Contractor and those shown on the drawings.

Where a beacon is likely to be disturbed during construction operations, the Contractor shall establish suitable reference beacons at locations where they will not be disturbed during

construction. No beacons shall be covered over, disturbed or destroyed before accurate reference beacons have been established and details of the positions and levels of such beacons have been submitted to the Engineer. The Contractor's reference beacons shall be of at least the same accuracy and sturdiness of construction as the existing beacons.

The Contractor shall submit the method of setting out he proposes to employ to the Engineer. Accurate control of line and level shall be provided by the Contractor at all stages of construction.

Work set out by the Contractor may be checked by the Engineer and any errors found shall be rectified by the Contractor at his own expense. The Contractor shall supply any instrument, equipment, material and labour required by the Engineer for this survey work. Any assistance, including checking given to the Contractor by the Engineer or any setting out done by the Engineer for Contractor shall not be held as relieving the Contractor of his responsibility for the accurate construction of the Works.

The Contractor's survey instruments and survey equipment shall be suitable for the accurate setting out of the Works and shall be subject to the approval of the Engineer. They shall furthermore be checked and correctly adjusted by the authorized agents before the commencement of the contract and subsequently when required by the Engineer and when otherwise necessary.

When required the Contractor shall, at his own expense, provide two labourers to assist the Engineer. The Engineer shall have the sole right of approving of such a labourer.

Survey work shall not be measured and paid for directly and compensation for the work involved in setting out shall be deemed to be covered by the rates tendered and paid for the various items of work included under the contract.

Inspection of Adjoining Properties

The Contractor shall take cognizance of the following:

Before any construction work commences in any section of the Works, the Contractor shall inspect all properties adjoining that section, preferably in the company of the relevant property owner or representative of the owner, and record the following:

- A photographic record of each property;
- All existing visible cracks in the adjoining buildings;
- Alternative accesses to the property;
- Location of services entering the property.

Construction in Confined Areas

It will be necessary for the Contractor to work within confined or restricted areas. No additional or extra over payment will be made as described for in “restricted areas” in the Standard Specifications. The Contractor shall note that measurement and payment will be in accordance with the specifications, excluding payment for work in restricted areas, irrespective of the method used, and that the rates and amounts tendered shall be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined or restricted areas and narrow widths at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

Existing Services

The scope of works for this contract shall be affected by existing services. Where necessary the Contractor must familiarize himself with the position and extent of existing services and to carry out the works in such a manner as not to cause damage to existing services. All manhole covers in the road must be clearly referenced and absolutely no surfacing shall be allowed on any manhole cover.

Any cost of repairs, replacement and/or installation of services and equipment resulting from the Contractor’s negligence or unauthorized action shall be for the Contractor’s account.

Where applicable, the employer’s standard specification for repairing and installation of water and sanitation services shall be used.

Plant and Materials

The Contractor, when using materials that are required to comply with any standard specification, shall, if so ordered, furnish the Engineer with certificates of compliance.

Where so specified, materials shall bear the official mark of the appropriate authority. Samples ordered or specified shall be delivered to the Engineer's office on the site free of charge.

Where proprietary products have been specified, similar products may be used subject to the prior written approval of the Engineer.

Unless otherwise specified, all proprietary materials shall be used and placed in strict accordance with the relevant manufacturer's current published instructions.

Unless anything to the contrary is specified, all manufactured articles or materials supplied by the Contractor for the permanent works shall be unused and fresh, not older than three months or as approved by the engineer.

Existing structures on the site shall remain the property of the employer and except as and to the extent required elsewhere in the contract, shall not be interfered with by the Contractor in any way.

Materials to be included in the works shall not be damaged in any way and, should they be damaged on delivery or by the Contractor during handling, transportation, storage, installation or testing they shall be replaced by the Contractor at his own expense.

All places where materials are being manufactured or obtained for use in the works, and all the processes in their entirety connected therewith shall be open to inspection by the Engineer (or other persons authorised by the Engineer) at all reasonable times, and the Engineer shall be at liberty to suspend any portion of work which is not being executed in conformity with these specifications.

The Contractor shall satisfy himself that any quarry selected for use provides the necessary mined material in accordance with the specification and that the quarry or borrowpits are in compliance with the latest environmental and mining legislation.

a) PROGRAM OF WORK

i) Construction Program

A detailed program in terms of the GCC 3rd Edition (2015) Clause 5.6, complete with a cash flow budget for the execution of the works must be made available to the Employer's Agent for approval within 14 days after the commencement date. Aspects that will require co-ordination with the Employer must be indicated clearly and provision must be made for it in the program.

It will be an explicit requirement of the contract that this program is updated monthly and submitted to the Employer's Agent at least two days prior to the site progress meeting.

When the work must of necessity be carried out in conjunction with the work of other contractors or with that of the Employer, it shall be coordinated and arranged in such a manner as to interfere as little as possible with the progress of such other work, and so as to offer every reasonable facility to other contractors or to employees of the Employer.

The contractor shall allow for the presence on site of other contractors engaged with other contracts on the same site. He shall assure them of access to their places of work and make allowance for short delays while they perform certain work.

No work of a permanent nature may be executed before the program has been approved by the Employer's Agent.

The Employer's Agent retains the right to alter, as circumstances may require, the sequence in which installation is to be executed. Such alterations will only be made after consultation with all parties concerned.

Subject to any requirements in the Specification as to completion of any portion of the Works, it shall be completed within the times mentioned at the end of the Bill of Quantities, subject to any extension of time that may be granted in accordance with the Contract.

ii) Extension of Time due to Inclement Weather

The Contractor shall be responsible for keeping accurate records of weather conditions in the Daily Site Diary to use as substantiation of any claim for extension of time in accordance with GCC 3rd Edition (2015), Clause 5.12. The Contractor will inform the Employer's Agent when he is unable to proceed with the Works in accordance with the approved Contract Program. Subject to the approval of the Employer's Agent, the rainfall and other relevant notes will be noted in the Daily Site Diary for the applicable day/s. After the event the Contractor shall provide a revised Contract Program motivating if the delay affects his schedule to the extent that he will need to motivate for an extension of time in accordance

with the relevant GCC 3rd Edition (2015), Clause 5.12. The Employer's Agent, together with the Employer, will be responsible for granting the extension of time.

Extension of time shall be determined for abnormal rainfall or wet conditions in accordance with the formulae given below, separately for each calendar month or part thereof. It shall be calculated for the full period for completion of the Contract plus any granted extension thereof:

V = (Nw - Nn) Rw/Rn ..... if (Nw - Nn) > 0

The symbols shall have the following meanings respectively:

V = Extension of time in calendar days in respect of the calendar month under consideration.

Nw = Actual number of days during the calendar month on which a rainfall of 10mm or more is record.

Nn = Average number of days, as derived from existing rainfall records, on which a rainfall of 10 mm or more has been recorded for the calendar month.

Rw = Actual rainfall in mm recorded for the calendar month.

Rn = Average rainfall in mm for the calendar month under consideration as determined from existing rainfall records.

When calculating extension of time for a part of a month pro rata values of Rn and Nn shall be used.

The factor Rw/Rn shall be deemed to be a fair allowance for days on which wet conditions disrupted or prevented work, but on which a rainfall of 10 mm or more was not recorded. If the value of Rw/Rn exceeds 2,5 it shall be taken as 2,5.

If Nw for any month is smaller than Nn, the formula used shall be

V1 = (Nn-Nw)

The total extension of time for completion shall be the sum of the values of V, minus the sum of the values of V1.

Total extension of time = Σ V - Σ V1

b) ERECTION, INSTALLATION, ADJUSTMENT AND OPERATION

The Contractor shall be responsible for ensuring that any work by his own staff or any sub-contractor working for him is carried out to his satisfaction and that the equipment meets all the requirements of the Specification as well as of all laws and all statutory regulations applicable to the Works.

All connectors such as anchor bolts (cast in situ or grouted), expansion bolts, base plates, etc, shall be designed by the Contractor to suit the equipment supplied by him and to ensure compliance with these Specifications.

All mechanical/electrical equipment supplied and delivered under this Contract shall be placed and firmly fixed in position by the Contractor on holding bolts supplied by him to ensure that it will operate efficiently to the satisfaction of the Employer's Agent. Affixing shall mean the supply and installation of all nuts, bolts, plates, grout etc and shall include for all labour and other activities such as sawing, cutting, filing, grinding, drilling, welding, repair of corrosion protection, grouting, etc. required for the fixing of the equipment. If the Contractor does not have the qualified personnel at his disposal he shall appoint the necessary specialists at his own cost.

The Contractor shall be responsible for providing and installing all bolts, nuts and washers. All bolts, nuts and washers shall be as specified in Clause PS29.

All dimensions of all equipment shall be checked by the Contractor after manufacture and on delivery.

Before handing over the plant, the Contractor is to ensure that every component is operating satisfactorily. The Contract will not be deemed to have been completed until the Employer's Agent is fully satisfied in this regard.

It is an express condition of this Contract that the guarantee period on all equipment given by the suppliers to the Contractor shall only commence once the works is in operation. This stage will be reached once the Certificate of Completion has been issued.

c) QUALITY OF MATERIALS AND EQUIPMENT

All material, plant and equipment shall be of the best quality available and shall, where applicable, comply with the relevant standard specifications of the SANS. In cases where no specification of the SANS exists, the relevant British, German or American specifications will be applicable as determined by the Employer's Agent. The latest amendments of these specifications shall apply.

The Contractor shall submit for the approval of the Employer's Agent and before any orders are placed, the names of the firms from which he proposed to obtain his supplies of materials and manufactured articles.

He shall also supply samples as and when required by the Employer's Agent.

The Employer's Agent may also, in exercising the powers vested in him, order the Contractor to remove all or any of the material and equipment which, in his opinion, is of an inferior quality and to replace them with proper materials or equipment at his own expense.

d) EMPLOYER'S AGENT TO APPROVE SPECIFIC EQUIPMENTS

It is a condition of this Contract that the Contractor shall submit details of all equipment (i.e. motors, gearboxes, electrical equipment, etc) to the Employer's Agent for his written approval before placing final orders for such equipment. This is to ensure that the equipment ordered is in accordance with that offered according to the Technical Data Sheets.

The shop details for all fabricated steel items shall be submitted to the Employer's Agent for checking prior to commencing fabrication. The Employer's Agent shall require the Contractor to change any design details that on checking are found not to comply with the Specifications given herein, and no extra payment will be made for such changes. The Employer's Agent's approval will not relieve the Contractor of his full responsibilities for the due performance of the equipment installed.

The design of all methods of joining and fixing to concrete structures shall be submitted to the Employer's Agent for approval. Such approval will not relieve the Contractor of his full responsibility for the proper performance of the Works.

Mechanical joints subject to vibration or movement during the working life of the equipment, or those in inaccessible places, shall have the nuts locked or pinned, or the bolts peened over.

The Contractor shall also supply samples as and when required by the Employer's Agent.

The Employer's Agent may also, in exercising the powers vested in him, order the Contractor to remove all or any of the material and equipment which, in his opinion, is of an inferior quality and to replace them with proper materials or equipment at his own expense.

i) Tests on Site

All Site tests shall normally be carried out in the presence of, but always to the satisfaction of the Employer's Agent and at such times as he may reasonably require. The Contractor shall provide all the relevant test equipment and bear the costs of all testing to be done. All equipment must be tested to ascertain whether it performs its intended duties in a manner as specified.

The contractor shall submit to the Employer's Agent, for approval, a schedule of tests to be performed during cold and hot commissioning. The schedule is to be submitted at least 14 days before the planned date for cold and hot commissioning.

On completion of erection and installation the Contractor must carry out the following tests, where applicable, in addition to any other tests which may be specified elsewhere:

Before commissioning:

a) Insulation tests as required by the Council's By-Laws.

b) Earth continuity tests.
c) Tests for correct direction of rotation of motors and reverse if necessary.
d) Test for correct operation of control gear setting of overload protection equipment, etc.
e) Test for correct alignment of shaft bearings.

After commissioning:

Checking overall functions of the unit under specified conditions.

On completion of installation and putting into proper operation all the pumps and equipment, the Contractor will be required to make suitable arrangements for the testing of all equipment supplied under this Contract, in presence of the Employer's Agent or his representative.

The entire cost of testing, including supply of test equipment, must be borne by the Contractor and an adequate allowance for such tests must be made in the tendered price.

ii) Accepted Laboratories

Unless otherwise stated in a specification that forms part of this Contract, only the testing laboratories of the South African Bureau of Standards, the Council of Scientific and Industrial Research, the relevant Government Departments and Local Authorities will be accepted as approved laboratories in which tests or design work required in terms of a specification may be carried out.

iii) Methods of Testing

Unless otherwise prescribed in a specification that forms part of this Contract, all testing shall be carried out and interpreted in strict accordance with the methods specified in relevant SANS, IE or BS Specification(s).

e) SERVICING

Only the defects related works will be monitored during the defects period.

f) DEFECTS LIABILITY PERIOD

Without limiting in any way, the obligations or responsibilities of the Contractor for maintenance, the Contractor shall make regular quarterly visits to the site during the defects liability period. During these visits, he shall make all adjustments to everything necessary to ensure the proper running of the works executed by the contractor. After each supervising visit to the Site, the Contractor shall submit to the Employer's Agent a report on:

a. The condition of the equipment and the servicing work carried out, and
b. Any adjustments which may have been made.

g) PAYMENT CERTIFICATES

Where retention money is applicable to a Contract, the retention money shall be deducted on the invoice from the total amount for work done and then the Value Added Tax (VAT) will be added to calculate the total amount payable on the invoice.

If penalties are payable, these will be deducted prior to the addition of VAT but after the calculation of retention money.

Tax invoices shall be submitted for each interim payment claim. The Contractor shall submit a provisional invoice with his payment claim as soon as possible after the date of measurement.

Once agreement has been reached with the Employer's Agent on the value of the certificate, the Contractor shall submit an original invoice on which payment will be made. The format will be discussed in the month preceding the first claim and to be resolved before the first payment is made.

i) Terms of Payment

The terms of payment shall be as follows:

1) **Supply and Delivery to Site, including storage (where applicable), quality assurance, painting and all necessary insurance**
   (a) 80 % of the contract price for materials upon delivery.
   (b) 20 % of the contract price for materials upon issuing.

Penalty for Late Completion:

Should the work as described under this Contract not be completely installed and commissioned in the time tendered, a penalty will be payable by the Contractor to the Employer in accordance with the Conditions of Contract. The Employer reserves the right to deduct penalties from outstanding payments.

ii) Certificate of Completion

The certificate of completion will be issued after the successful commissioning of all equipment as described in PS 15. The twelve months defects liability period will start on the date stated in the Certificate of Completion.

Guarantees will be reduced or returned to the Contractor after issuing of the Certificate of Completion and retention monies will be paid out after the defects liability period has elapsed. The Certificate of Completion will not be issued until the documents required in terms of this Contract have been lodged with and accepted as satisfactory by the Employer's Agent.

The issuing of the Certificate of Completion could be delayed if the equipment supplied under this contract cannot be commissioned. If the issuing of the Certificate of Completion is delayed for reasons beyond the Contractor's control, the Contractor will be compensated for his expenses because of the time delay between the completion of the works and the commissioning of the equipment. The rate tendered for the payment item for the postponement of the issuing of the Certificate of Completion must include for all the Contractor's expenses.

Measurement and Payment

Compulsory postponement of the issuing of the Certificate of Completion …… Rate/day

iii) Foreign Exchange Risks

The provision of forward cover against foreign exchange fluctuations on the imported content of all equipment required under the contract might be required. In his Tender, the Tenderer must state the value of the imported content of each item and the applicable currencies and the exchange rates on which his tender was based.

The successful Tenderer might be required to take out forward cover on all foreign exchange transactions required in his tender for this contract, the rate applied shall be that ruling at the date of commencement of the Contract that is stated in the Letter of Acceptance.

Amounts tendered will be adjusted for foreign exchange variations up to the date of commencement of the Contract; any fluctuations after this date will be for the Contractor's account.

h) FEATURES REQUIRING SPECIAL ATTENTION

i) Security

The Contractor shall provide his own security to safeguard his site, plant and materials at all times.

ii) Operation of Valves

During the temporary decommissioning of pipelines and structures, the Works Manager shall undertake the closing and opening of valves on behalf of the client. The Contractor shall notify the Works Manager well in advance when this is required.

iii) Work Outside Normal Working Hours

This must be read with Clause 5.8 of the General Conditions of Contract 2015, 3rd Edition (GCC 2015). The Contractor shall pay to the Employer an amount in relation to the annual salary hourly rate per per hour per person needed for supervision by the Employer's Agent

when construction work is carried out outside normal working hours, except in the case as set out in Clause 5.10 of the General Conditions of Contract 2015, 3rd Edition.

iv) Permits

The contractor shall be required to arrange all permits required with unprejudiced support of the Employer's Agent.

v) Key Personnel

The Contractor is deemed to have in making his offer, all personnel available to perform the works entirely in the contracted time and cost. In addition he shall comply with the prevailing Act 85 of 1993, Occupational Health and Safety Act.

The Employer's Agent and his duly appointed representative will be the key contacts on site.

vi) Additional Meetings

The costs of all additional meetings or inspections over and above the normal, that take place because of the Contractor not keeping to his program or because of the quality of his work will be for the account of the Contractor and will be deducted from the following payment certificate. An amount in relation to the annual salary daily rate per meeting will be paid by the Contractor to compensate for the travelling cost, time, etc. of both the Employer's Agent and the Employer including persons needed by the Employer's Agent and Employer for the meeting.

l) QUALITY MANAGEMENT

i) Applicable Quality Assurance Standards

The Tenderer shall provide a coordinated and formally documented statement of his quality management system, including quality management objectives, policies, organisation and procedures, for the compulsory implementation of SANS 0157, Code of Practice for Quality Management Systems, Part III. The same applies to Part II of the said Code of Practice, which must be implemented on certain selected items only. However, although Part II will not be implemented in all instances it will not exempt the Contractor of compliance with the quality

requirements laid down in the tender documents. Monitoring and control by the Employer's Agent may be done at any time on any material.

The Contractor shall submit with his tender an assessment report on his quality management and quality control system issued by an independent Quality Assurance Authority approved by the Employer's Agent. The inspection on which this assessment report is based shall have taken place not more than twelve months prior to the closing date for this tender.

Responsibility for and all associated costs of compliance with this sub clause shall rest with the Contractor.

ii) Quality Assurance Enhancement

Should the Contractor or any of the proposed sub-contractors not comply with Sub-Clause PS 22.1 at the time of tender a Contract may be awarded subject to a written undertaking to enhance his own and/or sub-contractor's quality assurance system to the satisfaction of the Employer's Agent before commencement of the Contract.

iii) Quality Assurance Staff

The Contractor shall satisfy the Employer's Agent that a quality specialist together with sufficient and suitably qualified staff will be assigned to control the quality of material used by the Contractor and to monitor the quality of the material used by each sub-contractor engaged in the supply of critical and major components and sub-assemblies.

The curriculum vitae of the quality specialist shall be submitted to the Employer's Agent at the time of tender. The Employer's Agent shall approve the proposed quality staff in writing and changes of staff shall require the written agreement of the Employer's Agent.

If the Employer's Agent considers that the proposed quality specialist and/or quality staff is inadequate or becomes inadequate during the course of the Contract due to staff changes or for any other reason, the Contractor shall employ for the period of the Contract and at his cost an independent quality specialist and/or sufficient and suitably qualified quality staff approved by the Employer's Agent.

iv) Employer's Agents Quality Assurance Representative

The Employer's Agent may elect to appoint an independent quality assurance representative to act in a surveillance capacity on his behalf for part of or the entire Contract.

v) Classification of Material

Part II of the above-mentioned Code of Practice i.e. a quality system for manufacture and installation, will apply only to certain critical material, products and services indicated in the tender documents, of which the Employer's Agent considers the manufacturing and the installation stages of such critical importance that quality assurance by the Contractor shall be of an even higher level than that prescribed in Part III.

vi) Sub-Letting

All enquiries made and contracts placed by the Contractor for critical components shall require that sub-contractors comply with the requirements of the preceding Sub-Clauses. Responsibility for and all associated costs of compliance shall rest with the Contractor. In instances where SANS 0157 is not applicable, Tenderers must indicate what equivalent alternative Code of Practice is being implemented.

vii) Disqualification

Tenderers who do not include the formally documented statements called for in Sub-Clause *22.1* and who do not respond in terms of Sub-Clause *22.2* above will be disqualified.

j) STANDARD SPECIFICATIONS

Reference made hereinafter to specifications of the South African National Standards (SANS) or the British Standards Institution (BS) shall be deemed to include all revisions of and/or additions to such specifications ruling at the closing date of tenders.

k) PROTECTION AGAINST CORROSION

Where corrosion of metal may be expected, the Contractor shall supply materials which are resistant to corrosion. Any material showing signs of corrosion, tuberculation or pitting before expiry of the Defects Liability Period must be replaced by the Contractor. The tendered prices will be held to include the cost of all painting or other surface treatment which is not separately specified or scheduled but which is nevertheless necessary for the protection of surfaces against corrosion. All corrosion protection shall conform to the Corrosion Protection Specification for Civil, Mechanical and Electrical Employer's Agenting Construction, New Revised 2006 Edition, which will be issued during construction stage. The manual is available with the project Employer's Agents during the tender stage at free of charge should a tenderer wishes to obtain a copy.

l) STRUCTURAL STEELWORK

The design of structural steelwork and the materials and workmanship used in the construction of same shall comply with the requirements of SANS 0162 and 1431. Grade 300 W steel shall be used.

In the case of welded connections, in addition to welds required for structural strength, a sealing weld shall be carried right around the connection so as to facilitate protection against corrosion.

m) MILD STEEL PIPES, FITTINGS AND SPECIALS

All pipe works up to and including 150mm diameter shall comply with the requirements of SANS 62, medium wall standard welded pipes.

All mild steel pipes and fittings with diameter greater than 150 mm shall comply with the requirements of SANS 719 grade A. Specials shall be manufactured from straight pipes in accordance with the relevant requirements of BS534. All welding in pipes and specials shall be electric fusion welding.

Before leaving the factory, all mild steel pipes and fittings shall be protected against corrosion in accordance with the Standardised Corrosion Protection Specification in Volume 2 G02.

Plain ends of pipes and fittings shall be covered and protected against damage while being transported from the factory to the Site.

Wall thickness of pipes and fittings shall be 6 mm, unless specified otherwise in the Detailed Specifications or on the drawings.

n) FLANGES

The dimensions and drilling of standard flanges shall comply with the requirements of SANS 1123 for a working pressure of 1 MPa. Flanges shall be machined flat, i.e. without a raised joint face. Puddle flanges shall have the same dimensions as standard flanges but shall be undrilled.

Faces of flanges which will be in contact with jointing gaskets shall receive a protective coating of such thickness and consistency as will not impair the air/gas/water tightness of the joint.

o) JOINTING MATERIAL FOR FLANGED JOINTS

Bolts for flanges shall comply with the requirements of BS 4504 for the working pressures specified and shall furthermore, together with the nuts and washers used in conjunction therewith, be of the material as specified in Clause PS 29. The jointing gaskets shall comply with the requirements of BS 3063 and shall be cut to the full width of the flange and holed for bolts.

p) BOLTS, NUTS AND WASHERS

All bolts and nuts shall comply with the requirements of SANS 1700 and shall be 4.6 strength grade. Washers shall be provided at each nut and shall be of the same material (or coating where applicable) to match the bolt and nut. Single coil square section spring washers shall be fitted to all nuts subject to vibration.

Bolts other than jacking bolts shall project not less than 3 mm and not more than 10 mm from the heads of the nuts after tightening. An approved nickel based anti-seize compound shall be used on all stainless-steel bolts and nuts.

Unless otherwise shown all bolts, nuts and washers shall of the material as specified below:

Holding down bolts to be built into concrete work as well as bolts to be installed above ground level directly above and under water shall all be of stainless-steel grade 304. Bolts for flexible couplings and flanges for underground installation shall be of the same material as the couplings or flanges. Bolts to be installed inside buildings shall be of the same material as the pipe work and fittings. Corrosion Protection shall be as specified in the

Standardised Corrosion Protection Specification for Civil, Mechanical and Electrical Employer's Agenting Construction in Volume 2 G02.

Suitable plastic sleeves and/or washers shall be used for protection against corrosion by metallic action.

q) METAL WALKWAYS

All metal walkways shall be made of square pattern type of approved open grid flooring manufactured with 40 x 5 mm minimum thickness bearer bars spaced at not more than 40 mm centres.

Individual panels shall be fully banded.

Open grid flooring shall be made of 3CR12 steel. Pickling and passivation shall be carried out in accordance with the Standardised Corrosion Protection Specification.

r) HAND RAILING

Stanchions for hand railing shall be of approved prefabricated ball type made in one piece without welding at ball joints to accept the hand and knee rails and shall have 150 x 75 x 10 mm base plates drilled for M 16 bolts at 100 mm centres.

Hand and knee rails shall consist of 25 mm nominal inside diameter tubing cut and bent to shape. Stanchions shall be spaced not more than 1.5 metres apart. Unless otherwise shown, all hand railing shall be 1000 mm above walkway level.

All tubing, stanchions and base plates shall either be manufactured in 3CR12 stainless steel as scheduled for in the detailed specification or in the Bill of Quantities. Galvanising of handrails shall comply to the Standardised Corrosion Protection Specification. Stainless steel handrails shall have a No.1 surface finish and pickling and passivation shall be carried out in accordance with the Standardised Corrosion Protection Specification.

C3.4.1 STANDARD SPECIFICATIONS

The following Particular Generic Specifications form part of this Contract and shall be used in conjunction with the Detailed Specifications.

i) *SANS 1200 Standardised Specifications for Civil Employer's Agenting Construction as approved by the Council of the South African Bureau of Standards.*

ii) *SANS 10400 The application of the National Building Regulations as approved by the Council of the South African Bureau of Standards.*

iii) *The NHBRC home building manual Parts 1, 2 and 3.*

iv) *The conditions of contract and bill of quantities will be according to JBCC series 2000, 5th edition of July 2007.*

- *Standard unit of measurement*
- *Model preambles of trade*

v) *Association of South African Quantity Surveyors (ASAQS) Preliminaries are hereby attached as a supplementary document*

Should any requirements of the Standardised Particular Specifications conflict with any requirements of the Detailed Specifications, the requirements of the Detailed Specifications shall prevail.

C3.4.1.1 APPLICABLE SANS 1200 STANDARDS FOR CIVIL WORK

The Standard Specification for any associated civil works applicable to this Contract are not issued with this volume but are available at the Contractor's expense from Standards South Africa:

Office Address:	**Postal Address:**
1 Dr Lategan Road	Private Bag X191
Groen Kloof	PRETORIA
PRETORIA	0001
Telephone:	**Telefax**:
National: (012) 428-6883	National: (012) 428-6928
International: + 27 12 428 6883	International: + 27 12 428 6928
Email: sales@sabs.co.za	

C3.4.2 PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

C3.4.2.1 General Conditions of Contract Referred to in the Standard Specifications

"The General Conditions applicable to this Contract shall be the General Conditions of Contract for Construction Works, Third Edition, 2015 issued by the South African Institution of Civil Engineering.

The Contractor shall note that whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the Conditions of Contract specified in this clause and amended in the Contract Document shall apply and the Contractor shall be responsible for interpretation of the equivalent clause.

C3.4.2.2 Project Specifications Relating to Standard Specifications

This part of the project specifications deals with matters relating to the standard specifications. Where reference is made in the standard specifications to the project specifications this part shall also contain the relevant information e.g. the requirements where a choice of materials or construction methods are provided for the standard specifications.

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 and amendments of the standard specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix B 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 new payment item, which does not form part of a clause or a payment item in the standard specifications and is included here, is also prefixed by B 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.

Clauses and pay items referring to labour intensive methods are prefixed by L in the project specifications.

Clauses and pay items referring to emerging contractors are prefixed by E in the

project specifications.

EPWP Special Project Specification

As much as is economically feasible all work shall be implemented by employing Labour Intensive Construction methods. Over and above the normal Building and Allied works to be implemented by employing skilled and unskilled labour the works specified in the “Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP)” shall be undertaken using Labour Intensive Construction methods.

Employer’s objectives

The employer’s objectives are to deliver public infrastructure using labour intensive methods.

Labour-intensive works

Labour-intensive works comprise the activities described in SANS 1921-5, Earthworks activities which are to be performed by hand, and its associated specification data. Such works shall be constructed using local workers who are temporarily employed

EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

Requirements for the sourcing and engagement of labour.

Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

The rate of pay set for the SPWP is R 190 per task or per day. (Insert value determined by public body in terms of clause 2.2 of these Guidelines)

Tasks established by the contractor must be such that:

a) the average worker completes 5 tasks per week in 40 hours or less; and

b) the weakest worker completes 5 tasks per week in 55 hours or less.

The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.

The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

a) where the head of the household has less than a primary school education;

b) that have less than one full time person earning an income;

c) where subsistence agriculture is the source of income.

d) those who are not in receipt of any social security pension income

The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

a) 55 % women;
b) 40% youth who are between the ages of 18 and 35; and
c) 2% on persons with disabilities.

Specific provisions pertaining to SANS 1914-5

- Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

- Contract participation goals
- There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
- The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.
- Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

- Variations to SANS 1914-5
- The definition for net amount shall be amended as follows: Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.
- The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

Training of targeted labour

- The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
- The cost of the formal training of targeted labour, will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

- A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works– Cinderella Makunike, Fax Number 012 328 6820 or email cinderella.makunike@dpw.gov.za Tel: 083 677 4026
- The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.
- The contractors shall do nothing to dissuade targeted labour from participating in the above-mentioned training programmes.
- An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of 1.3.4 above.
- Proof of compliance with the requirements of 1.3.2 to 1.3.6 must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

GENERIC LABOUR-INTENSIVE SPECIFICATION

The Generic Labour-intensive specification below is the same as SANS 1921-5,

Construction and management requirement for works contracts- Part 5: Earth works activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

SCOPE

This specification establishes general requirements for activities which are to be executed by hand involving the following:

a) trenches having a depth of less than 1.5 metres
b) stormwater drainage
c) low-volume roads and sidewalks

PRECEDENCE

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

HAND EXCAVATEABLE MATERIAL

Hand excavatable material is material:

a) Granular materials:
    i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:

i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note:

1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		**COHESIVE MATERIALS**	
CONSISTENCY	**DESCRIPTION**	**CONSISTENCY**	**DESCRIPTION**
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	**DESCRIPTION**	**CONSISTENCY**	**DESCRIPTION**
			penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumbnail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumbnail with difficulty; slight indentation produced by blow of a geological pick point.

TRENCH EXCAVATION

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

COMPACTION OF BACKFILLING TO TRENCHES (AREAS NOT SUBJECT TO TRAFFIC)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

a) to 90% Proctor density;

b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or

c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

EXCAVATION

All hand excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

CLEARING AND GRUBBING

Grass and small bushes shall be cleared by hand.

SHAPING

All shaping shall be undertaken by hand.

LOADING

All loading shall be done by hand, regardless of the method of haulage.

HAUL

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

C3.5 : SPECIFICATIONS

The Project Specifications, consisting of two parts, form an integral part of the Contract and supplement the Standard Specifications.

Part A contains the Standard Specifications.

Part B contains the Project Specifications Relating to Standard Specifications

Part C contains variations, amendments and additions to the Standard Specifications and, if applicable, the Particular Specifications.

Part D contains the Additional Specification.

In the event of any discrepancy between a part or parts of the Standard or Particular Specifications and the Project Specifications, the Project Specifications shall take precedence. In the event of a discrepancy between the Specifications (including the Project Specifications) and the drawings and */* or the Schedule of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

The Standard Specifications, which form part of this contract, have been written to cover all phases of work normally required for road contracts, and they may therefore cover items not applicable to this particular contract.

C3.5.1 PART A : STANDARD SPECIFICATIONS

Although not bound in or issued with this document, the following SANS 1200 Standard Specifications for Civil Engineering Construction and SABS 10400 The Application of the National Building Regulations, as approved by the Council of the South African Bureau of Standards shall form part of the Contract Documents. The Contractor shall be in possession of these Standard Specifications and their related SABS 0120 Code of Practice (latest edition) which apply equally and shall keep a copy thereof on site for reference by himself or the Engineer for the duration of the Contract.

C3.5.2 PART B : PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

This part of the project specifications deals with matters relating to the standard specifications. Where reference is made in the standard specifications to the project specifications this part shall also contain the relevant information e.g. the requirements where a choice of materials or construction methods are provided for the standard specifications.

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 and amendments of the standard specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix B 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 new payment item, which does not form part of a clause or a payment item in the standard specifications and is included here, is also prefixed by B 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.

Clauses and pay items referring to labour intensive methods are prefixed by LI in the project specifications.
Clauses and pay items referring to emerging contractors are prefixed by E in the project specifications.

C3.5.3 PART C : VARIATIONS, AMENDMENTS AND ADDITIONS TO THE STANDARD SPECIFICATIONS AND AND PARTICULAR SPECIFICATIONS.

PSA GENERAL

PSA1 Approval of Material (Subclause 3.1)

The Contractor must supply to the Engineer the test results of samples from stockpiles of proposed construction materials on site.

The Contractor shall be responsible for the cost of all failures on test samples and acceptance testing.

PSA2 Accommodation of Traffic (Sub-clause 5.2)

PSA2.1 General

The Contractor shall ensure that all access routes which are affected by the Works and/or Temporary Works are kept in a safe condition for pedestrian and vehicular traffic.

The Contractor shall organise his work so as to reduce the inconvenience to traffic to a minimum, and no public road shall be completely closed without prior approval.

The Contractor shall provide and maintain in proper condition all necessary barricades, lights, warning signals and all direction signs necessary to enable traffic to flow in both directions. He shall provide flagmen at all deviations and/or obstructions.

All signs shall be in both official languages and all traffic signs and control of traffic shall be in accordance with the South African Road Traffic Signs Manual.

The Contractor shall liaise with and co-operate with the relevant Traffic authorities wherever the works affect existing roads. The Contractor shall sign an indemnity clearing the Local Authority, as applicable, from all liabilities in respect of excavations and works on or adjacent to trafficked roads.

PSA2.2 Measurement and payment

PSA2.2.1 Accommodation of traffic Unit : Sum

Payment for this item shall include for all work necessary to comply with this Project Specification not covered by the specific pay items below. Subject to the provisions of 8.2.3 and 8.2.4, payment of incremental amounts (calculated by the division of the tendered sum by the number of months required to complete the site activities for which the relevant sum was tendered) will be authorised in each of the subsequent progress certificates until the sum tendered has been paid.

PSA2.2.2 Working alongside Residential Roads (Trenching falling outside roadway) Unit : m

PSA2.2.3 Working within Residential Roads (Trenching falling within roadway) Unit : m

Payment for the above items shall be deemed to be full compensation for the following:

a) The maintenance of existing roads and any deviations or temporary sections of road during the period of the contract.

b) Supply, erection, moving and all subsequent re-use on site, including maintenance, removal to store and final removal of all barricades, barriers, signs and flashing lamps.

c) Supply, installation, moving and all subsequent re-use on site, including maintenance, removal to store and final removal of all drums and cones.

d) Provision and maintenance of pedestrian and vehicular access across trenches or ditches to dwellings.

PSA3 Approved Laboratories (Subclause 7.2)

The Contractor in conjunction with the Engineer's Representative shall execute day to day testing such as, P.I's, gradings, CBR's, MOD's, densities, air tests gravity sewers, pressure tests for water mains, etc. Accurate records of all control testing shall be kept by the Contractor and copied to the Engineer on a regular basis. In addition, control testing as well as more sophisticated testing shall be done by a Laboratory chosen by the Engineer.

The Contractor shall ascertain that his site staff are capable of executing his quality control testing as required by the various sections of the Specifications. The Engineer's site staff shall witness and verify the Contractor's testing.

PSA3.1 Payment procedure for acceptance testing

Costs for his quality control testing shall be borne by the Contractor. Cost for control testing by the Engineer's laboratory excluding failures shall ultimately be borne by the Employer.

The procedure for payment of the Engineer's Control Testing will be as follows;

The Engineer's laboratory will invoice the Contractor with all acceptance testing costs including successful tests.

The Contractor shall be reimbursed for all successful acceptance tests via the monthly Payment Certificates.

PSA4 Dealing with Water on Works

The site is situated within a predominantly winter rainfall area.

In addition to the requirements of Subclause 5.5 of SABS 1200 A - 1986 General, the Contractor shall design, construct and maintain all drains and other temporary works necessary for the dewatering and flood protection of the permanent works. All methods of dewatering and flood protection shall be to the approval of the Engineer.

Having served their purpose, all temporary works shall be removed, backfilled or levelled such that the operation of the works shall not be affected in any way.

The Contractor shall be responsible for and shall repair at his expense any damage to the foundations, structures or any part of the works caused by floods, water of failure of

any part of the dewatering and flood protection works.

The cost of all flood protection and dewatering measures shall be included in the relevant items in Section 1 of the Schedule of Quantities.

PSA5 Method of Measurement (Subclause 8.1.1)

The quantities listed in the Schedule of Quantities do not govern final payment. Payment to the Contractor will be made only for the actual quantities of contract items performed in accordance with the plans and specifications and if upon completion of the construction, these actual quantities show either an increase or decrease from the quantities given in the Schedule of Quantities the rates and prices contained in the Schedule of Quantities will prevail.

PSA6 As-Built Information

As the works are progressing, the Contractor shall mark on his drawings, after checking the information, all as-built details and submit them to the Engineer's Representative for approval on a weekly basis. Payment shall be made under "Contractual Requirements."

The Contractor must make an allowance in this contractual requirement to have all services surveyed and forwarded to the Engineer in an electronic format. A Completion Certificate will only be issued once the Engineer has accepted as-built information.

PSA7 DAYWORKS

This Daywork Schedule will be used at the discretion of the Engineer for valuation of extra work which cannot conveniently be valued at rates submitted in the Schedule of Quantities. The rates entered for labour and materials shall be inclusive of overhead charges and profit, site supervision of staff, insurance, holidays with pay and use and maintenance of small hand tools and non-mechanical plant, travelling allowances, other emoluments and allowances.

PSD EARTHWORKS

PSD1 Classification for Excavation Purposes (Subclause 3.1)

Delete SABS 1200 D Subclause 3.1 and replace as follows:

PSD1.1 Method of classifying (Subclause 3.1.1)

The Contractor may use any method he chooses to excavate any class of material but his chosen method of excavation shall not determine the classification of the excavation. The Engineer or his Representative will decide on the classification of the materials. In the first instance the classification will be based on inspection of the material to be excavated and on the criteria given in PSD 1.2 (a) and (b).

In the application of this classification, no differentiation shall be made between "bulk" or "restricted excavations".

For excavation and compaction purposes, the sandy material shall be classified as sand in terms of PSDB4.

PSD1.2 Classes of excavation (subclause 3.1.2)

All material encountered in any excavations for any purpose including restricted excavation will be classified as follows:

a) Hard rock excavation

Hard rock excavation shall be excavation in material (including undercomposed boulders exceeding 0,17 cubic metres in individual volume) that cannot be efficiently removed without blasting, wedging and splitting or by pneumatic means.

Intermediate Excavation

No payment will be made for Intermediate Excavation. All intermediate material will be considered as Soft Excavation and will be paid for under Soft Excavation.

c) Soft excavation

Soft excavation shall be all material not falling into the category of hard rock.

PSD2 Compaction

All sand fill shall be compacted to 100% Mod AASHTO.

PSD3 Blasting

In addition to the provisions of SABS 1200 Section D: Earthworks Clause 5.1.1.3 the following shall apply:

PSD3.1 Overbreak

The Contractor shall make good at his own expense any additional excavation necessitated by the shattering of rock in excess of the following overbreak allowances:

a) Overbreak in the width: nil

b) Overbreak in the depth: 150 mm below invert level.

PSD3.2 Excavation of rock by blasting

In addition to complying with the provisions of Clause 5.1.1.3 above, the Contractor shall record for the information of the Engineer the spacing and loading of the charge in each blast and monitor the velocities but compliance with this or any other requirement will not relieve the Contractor of any responsibility in terms of the contract. The Contractor shall not carry out blasting within 10 m of any service or within 25 m of any building.

Blasting patterns will be designed by experts to limit the particle velocities to the following:

a) At services: 50 mm/sec peak particle velocity.

b) At any building: 25 mm/sec peak particle velocity.

The velocities shall be monitored at the service and building closest to the blast on

each occasion and a copy of the recordings given to the Resident Engineer.

Preblast surveys including photographs shall be taken of buildings within 50 metres of the blast and written confirmation obtained from the owner. All this work shall be undertaken by the Contractor at his own expense.

PSD4 FREEHAUL (SUBCLAUSE 5.2.5.1)

All haulage on the Contact shall be regarded as freehaul.

PSDB EARTHWORKS (PIPE TRENCHES)

PSDB1 Classes of Excavation (Subclause 3.1)

Add:

"Notwithstanding the provision of this Sub-clause the excavation of material will be classified as specified in Clause PSD 1.

Where for reasons of inaccessibility or any other reason that excavation cannot be carried out by mechanical means, and where so directed by the Engineer, the trench shall be excavated by hand."

The final classification of material will be at the discretion of the Engineer or his representative.

PSDB2 Special Water Hazards (Subclause 5.1.2.2)

In addition to the Contractor's responsibilities for dealing with water, as set out in PSA4, the Engineer may order the Contractor to place a crushed stone bedding layer (minimum thickness 150 mm) on the trench bottom.

Should the trench bottom conditions remain unstable due to the nature of the soil and the degree of saturation, the Engineer may order the Contractor to install a filter fabric on the trench bottom prior to the provision of the stone layer. After placing the stone bedding, the filter fabric shall be folded over the stone with a minimum overlap of 300 mm to form an enclosed drain. The specified bedding material shall then be used to bed the pipe.

The Contractor shall only provide and lay the stone bedding layer and filter fabric after receipt of the written order to do so from the Engineer.

PSDB2.1 Measurement and payment

The cost of dealing with water as specified in Subclause PSA4 will be held to have been included in the tendered sums for excavation and under the relevant items in the Preliminary and General section of the Schedule of Quantities.

a) Stone Bedding in water-logged conditions

Where the use of a layer of crushed stone in the trench bottom has been authorised by the Engineer, it will be measured by volume calculated according to the length multiplied by the minimum base width and specified thickness.

The tendered rate shall cover the cost of all additional excavation and preparation of the trench bottom to accommodate the layer of stone, the removal of unsuitable material, the supply and placing of a 150 mm thick layer of stone over at least the specified width and all related activities in order to produce a stable platform.

b) Geotextile filter fabric

Where the Engineer has authorised the use of geotextile filter fabric, this shall be measured by area as:

2 x (specified minimum base width + 300 mm) x nett length.

The tendered rate shall include the cost of supply, placing and losses as a result of overlaps and over excavated trench widths.

PSDB3 Minimum Base Width (Subclause 5.2)

A side allowance of 300 mm on each side will be applicable to pipes of diameter less than 125 mm. Minimum widths for ducting and cables shall be as required on the relevant drawings.

PSDB4 Compaction (Subclause 5.7)

All trenches shall be backfilled and compacted to 100% of Modified AASHTO density in sand and not less than 93% in the case of cohesive materials. There will be no separate payment for compaction in road reserves as specified in SABS 1200 DB item 8.3.3.3.

Sand is defined as material that conforms to the following:

% passing :	4,74 mm sieve	95% min
	0,425 mm sieve	50% min
	0,075 mm sieve	10% max

Plasticity Index : Non Plastic

PSDB5 Shoring

Shoring will be measured and paid for in areas where the sides are unstable and widening of the trench is not possible, impractical or uneconomic. The onus is on the Contractor to request the Engineer to order shoring. The order for shoring shall be given in writing and shall not unreasonably be withheld.

Shoring of unstable trench sides will be measured per linear metre of trench shored whether both sides of the trench are shored or not and irrespective of the depth of the trench.

The rate shall include full compensation for all plant labour and materials required to provide the shoring and shall include for the additional inconvenience of working in a shored trench, and for any damage or replacement of the shoring after blasting, and for widening the trench to accommodate the shoring and walling.

PSDB6 Blasting

The provisions in PSD3 shall apply.

PSDB7 BACKFILL TO PREFABRICATED CULVERTS

The material used shall be selected material of at least subbase quality or such lower quality as may be permitted by the engineer.

Backfilling alongside and over all culverts shall be placed at optimum moisture content and compacted in layers not exceeding 150 mm after compaction to a density of at least the density required for the material in adjoining layers of fill, subgrade and subbase. The density of backfilling excavations made in natural ground shall be at least 90% of modified AASHTO density.

Backfilling shall be carried out simultaneously and equally on both sides of the culvert to prevent unequal lateral forces from occurring. The tendered Rate shall include full compensation for supplying selected material of subbase quality from approved sources including a free haul of 1 km.

PSDK GABIONS AND PITCHING

PSDK1 Materials (Clause 3.1)

PSDK1.1 Quality (Clause 3.1.1.1)

The stone shall be clean, hard, un-weathered and free from fissures and flaking. It shall have a relative density of 2.65 and should pass the requirements of the standard specification in terms of size, durability and finish.

PSDK1.2 SIZE (Clause 3.1.1.2)

No stone shall be of a size such that it will pass through a ring of diameter 88mm.

No stone shall be of a size:

exceeding 250mm, and at least 85% of the stones shall be of a size equal to or exceeding 120mm, in the case of gabion boxes, and;

exceeding 150mm, and at least 85% of the stones shall be of a size equal to or exceeding 100mm, in the case of mattresses.

PSDK1.3 Gabion Cages (Clause 3.1.3)

Unless otherwise shown on the drawings, gabion boxes shall consist of double twisted, hexagonal wire mesh of nominal 80mm mesh, with 4,4mm o/d frame wire and 3,7 mm o/d mesh wire, complete with partitions at 1m centres. All wire to be mild steel to SABS 1580 – 1993, zinc coated by hot dip galvanising to SABS 675 – 1993 and heat bonded with heavy duty PVC coating of nominal 0,5mm wall thickness.

Mattresses shall consist of double twisted, hexagonal wire mesh of nominal 80mm mesh, with 4,0 mm o/d frame and 3,5mm o/d mesh wire, complete with partitions at 1m centres. All wire to be mild steel to SABS 1580 – 1993, zinc coated by hot dip galvanising to

SABS 675 – 1993 and heat bonded with heavy duty PVC coating of nominal 0,5mm wall thickness.

PSDK1.4 Geotextile (Clause 3.1.4)

The geotextile liner shall be Bidim A4 or similar approved.

PSDK2 CONSTRUCTION (Clause 5)

PSDK2.1 Rockfilling (Clause 5.2.4)

The mattresses used for channel lining are to be filled by spreading random rock particles (quality and size as specified in PSDK1.1 and PSDK1.2) starting from the bottom of the channel and moving up the slope. The mattress should be slightly overfilled to allow for settlement

PSDM EARTHWORKS (ROADS, SUBGRADE)

PSDM1 Use of Material (Subclause 5.2.2.3)

PSDM1.1 After completion of the bulk earthworks operation, sandy material cut from roads shall be used in the following order:

a) As compacted fill in roads.
b) As backfill to pipe trenches.
c) As fill in low erven indicated by the Engineer.
d) Spread evenly over erven and public places indicated by the Engineer.

Spoil onto selected areas indicated by the Engineer.

To create embankment as shown on landscape drawing

PSDM1.2 The Contractor shall so organise his work that excavation from the road reserves is placed directly to uncompacted or compacted fill and no additional payment shall be made for stockpiling unless instructed by the Engineer in writing.

PSDM2 BORROW FILL

The material shall not contain any rock fragments with a maximum dimension exceeding 500 mm.

Whenever practical, fill shall be placed in successive layers parallel to the final road surface.

PSG CONCRETE (STRUCTURAL)

PSG1 Concrete Specification

PSG1.1 Mixing water

Only potable water shall be used for mixing water.

PSG1.2 Cement

100% LASROPC shall be used as specified in SABS 471 (1971) as amended. Any variations to these are subject to the Engineers approval.

PSG1.3 Aggregates

The maximum aggregate size shall be 25 mm. Malmesbury shales may be used provided the free sodium alkali content in the concrete mix does not exceed 2,1 kg/m3.

PSG1.4 Admixtures

Admixtures are permitted subject to the Engineers' approval.

PSG1.5 Batching plant

All concrete shall be weight batched.

PSG1.6 Vibrators

All concrete shall be compacted by vibrators and a spare vibrator in working order shall be available for use at all times.

PSG1.7 Concrete mix design

Watertight concrete

40 MPa concrete with the minimum and maximum cement contents of 325 kg/m3 and 400 kg/m3 respectively shall be used. The water cement ratio shall not exceed 0,50 All concrete mix designs shall be approved by the Engineer in advance.

The mix design and casting procedure shall be approved by the Engineer prior to casting.

Cubes shall be taken on all pours in accordance with SABS 1200. Payment shall be included in the rate tendered for the supply of concrete. Where cubes are not taken during a pour no payment shall be made for that pour.

PSL MEDIUM PRESSURE PIPELINES

PSL1 Materials (Clause 3)

(a) Pipes (Subclause 3.1)

Water mains shall be uPVC Class 12 pipes with Z-lock couplings to SABS 966 as indicated. Only full length pipes bearing the SABS mark will be acceptable. Cut pipes shall only be used at pipe junctions to position valves and specials as shown in the drawings. When laying the

pipes the markings shall be visible from above.

The cost of cutting and trimming the pipes shall be included in the rates for laying and jointing of pipelines.

(b) Pipe Specials (Subclause 3.3)

Pipe specials shall conform in all respects with the requirements of the latest edition of the relevant Standard Specification listed below:-

SABS 62

SABS 534

SABS 546

SABS 719

(d) Polyethylene Pipes (Subclause 3.7.2)

High density polyethylene (HDPE) pipes to SABS 533 Type IV Class 10 jointed with compression fittings or "Polycop" pipes with copper fittings shall be required as shown on the relevant drawings.

(e) Bolts and Nuts (Clauses 3.8.3 and 3.8.4)

Bolts and nuts shall comply with SABS 135 and be hot dip galvanised or cadmium plated.

PSL2 Corrosive Soil (Subclause 3.9.6)

Cast iron detachable and flanged joints together with their bolts shall be treated as specified in subclause 3.9.6 or other means approved by the Engineer. This treatment shall also apply to bolts and flanges used in the construction of valves and hydrants. No separate payment will be made for the treatment specified.

PSL3 Valves (Subclause 3.10)

(a) Isolation valves

Valves shall conform with all relevant sections of SABS 664 (1974) and SABS 665 (1981) specifications and subsequent amendments.

Valves shall be “Downright” Class 16 cast iron valves with non-rising spindles and closing to the left.

(b) Air Valves

Vent-o-Mat type.

PSL4 Fire Hydrants (Subclause 3.10)

Fire Hydrants shall have a cast iron body and shall be provided with a V-thread gunmetal outlet of 65 mm diameter with cast iron cap with safety chain.

Test Pressure: 2MPa Working Pressure: 1,38MPa.

Fire hydrants are to be bolted on to the flanged tee-end of a cast iron tee-piece with plan ends suitable for coupling to a pressure pipe. The fire hydrant and box are to be positioned in line with the water main uPVC.

PSL5 Surface Boxes (Subclause 3.11.6)

Surface boxes shall be to SABS 558. Cover and frame for valve surface boxes to be blue polymer concrete as manufactured by AV Mouldings for Stellenbosch Municipality. Cover and frame for hydrant boxes to be yellow polymer concrete Type 5 by AV Mouldings.

No separate payment will be made for the marking or painting of cast iron surface boxes.

PSL6 Construction (Clause 5)

PSL6.1 Depths and Cover (Subclause 5.1.4)

Pressure mains shall be laid so that the cover to the top of the pipe barrel from finished surface level is generally, but not less than 800 mm in roads and 600mm elsewhere.

Where the minimum clearance between pipe crossings would be less than 150 mm the main shall be laid beneath the service crossed at an invert level which allows for the minimum clearance. The main shall be laid horizontally at this level for a distance of at least 1,0 m on either side of the centreline of the service crossed and then revert to the minimum cover as specified in subclause 5.1.4.2.

No decrease in cover or clear space between the pipe barrels as specified will be permitted unless otherwise instructed by the Engineer in writing.

PSL6.2 Jointing (Subclause 5.2)

(a) Flexible couplings

All uPVC pipes shall be jointed to each other by means of the "Z-lock" system. All steel pipes, specials and cast-iron fittings shall be jointed to each other or pipes as detailed by means of Viking Johnson couplings or cast-iron short collar joints.

(b) Flange Jointing

With reference to SABS 1123-1977, the specifications for flange drilling shall be Table 16.

PSL6.3 Thrust Blocks (Subclause 5.5)

All bends and tees shall be provided with 20 MPa concrete thrust blocks to prevent movement of the special concerned.

The block shall be cast so that the pipe and the fitting joints are accessible for repair.

Unless otherwise ordered, the minimum bearing area of the thrust block against the face of the trench measured in a vertical plane shall be as detailed on the drawings.

The thrust face of thrust blocks shall be cast against solid, undisturbed material in the trench walls.

PSL7 Standard Hydraulic Pipe Test (Subclause 7.3)

The Contractor shall do the required test in the presence of the Engineer. All test pressures shall be taken as 1500 kPA. The pipelines shall be tested before construction of the basecourse and before the attachment of the saddles.

Test pressures shall be maintained for a minimum of 3 hours with the pump operating and circulating the water in the container. The surface area of the container shall be sufficiently small to measure the maximum allowable leakage accurately.

No payment for pipe laying will be made prior to testing, disinfecting and acceptance of pipelines.

PSL8 Connection to Existing Mains

The Contractor shall liaise with the relevant Local Authority in this respect and give the required notice of the connection date in order that the Local Authority may attend if necessary.

PSL8.1 Measurement and payment

PSL8.1.1 Connection to existing mains Unit : No

The rate shall cover the cost of liaison with Local Authority, excavating to expose the existing main, the removal of thrust block and/or end cap, breaking into existing main if necessary, dealing with water, completing the connection, backfilling, disposal of surplus material and making good to the satisfaction of the Engineer.

Fittings required for the connection will be measured and paid for elsewhere.

PSL9 STERILISATION OF MAINS

The Contractor shall properly disinfect the mains with an approved substance before they are put into service. All dirt shall be removed by flushing prior to disinfecting.

Water samples shall be submitted to the Engineer for bacteriological testing after the reticulation has been disinfected. The lines shall be properly flushed prior to connection into the existing system.

The Contractor shall be responsible for the provision and costs of all water used for flushing.

PSLB BEDDING (PIPES)

PSLB1 Bedding (Subclause 3.3)

PSLB1.1 General

uPVC and HDPE pipes are to be considered as flexible and bedding details suitable for flexible pipes shall be used throughout. (Class C).

Sand, as specified in PSDB4 shall be suitable for use as bedding material.

PSLC CABLE DUCTS

PSLC1 Scope (Clause 1)

Drawing numbered LC-1 is replaced by the standard details in so far as telecommunication ducts are concerned. The Contractor is referred to Standard Drawings and specific conditions relating to Telkom ducts included herewith.

PSLC2Ducts (Subclause 3.1)

Telkom ducts shall be 110 mm dia green core flow pipes and will be supplied by the contractor. The Contractor shall liaise with Telkom regarding the delivery of pipes.

Electricity ducts shall be 110 mm and 160 mm diameter uPVC Class 4 pipes supplied by the Contractor.

PSLC3Telephone Cable Ducts (Subclause 3.2.2)

Bedding for telephone ducts crossing roadways shall be stabilised using cement constituting 5% of the mixture by volume.

PSLC4Trench Widths and Depths (Subclause 5.1.1.2)

Delete paragraph (a) and replace with :

a) 650 mm for telephone services.

Delete paragraphs (b) and (c) and replace with :

b) 800 mm for all electric cables,

Add the following :

Where this specified depth is such that the level of the duct conflicts with other service pipes, the Engineer will modify the duct depth so as to pass over or under the service pipe.

PSLC5Road Crossings (Subclause 5.8)

Add the following to Subclause 5.8

Ducts together with draw wires shall be laid at right angles across road carriageways unless otherwise indicated on the drawings and shall extend 1,0 m beyond the edge of the road or sidewalk in the case of electrical ducts and as indicated on the drawings in the case of Telkom ducts, or as directed by the Engineer.

PSLC6Duct Route Markers (Subclause 5.9)

Position to be Marked (Subclause 5.10)

The following to be read in conjunction with Subclauses 5.9 &5.10 :

Notwithstanding the method of marking specified in Subclause 5.9 and the positions to be marked specified in Subclause 5.10, the Contractor shall mark the position and type of all ducts on kerbs by cutting the following symbols 5 mm deep into the concrete surface with an angle grinder.

E for electricity ducts
T for Telkom ducts.

After the symbols have been cut a number of notches shall be cut next to the symbol

indicating the number of ducts laid. The symbol and figure shall be painted with an approved red paint.

After the laying of road kerbs and channels the Contractor shall re-excavate the duct trench at the ends of the ducts before marking the position of the duct crossing. The subsequent backfilling of the duct ends shall not be carried out until the Engineer has inspected and approved the position of the markings. The tolerance on marking shall be such that when a line is strung over the centre of the markings the centre of the duct or duct group shall be within 150 mm either side of the line.

PSLC7 Cable Markers (Subclause 8.2.8)

Add the following to the last paragraph of Subclause 8.2.8 :
The tendered rate shall also include for all costs involved in sealing and marking duct ends and the re-excavation and backfilling for marking purposes.

PSLC8 Cement Treated Bedding

The unit of measurement shall be the Cubic metre.

The tendered rate shall cover the provision of 1200 LB 8.2.1 and shall include for the supply and mixing of the cement as specified in PSLC 3.

PSLD SEWERS

PSLD1.1 uPVC Pipe (Subclause3.1.5)

uPVC structured-wall sewers, Class 34 to shall be acceptable for 160 mm dia mains.
Heavy duty uPVC solid wall sewers, Class 34 to SABS 791 shall be used for 110mm dia house connections.

PSLD9 Manholes, Chambers, etc (Subclause 3.5)

PSLD9.1 Precast manholes (subclause 3.5.2 and 3)

Precast concrete manholes shall be acceptable provided that dolomitic aggregate be used and joints between rings be watertight. Chimneys in manholes will not be allowed. Precast bases (six way bases) will not be allowed unless the contractor liase with the Local Authority for acceptance of use.

PSLD9.2 Step irons (subclause 3.5.7)

Step irons shall be manufactured from a polymeric polypropylene with a 12mm dia high tensile strength core.

PSLD9.3 Manhole covers and frames (subclause 3.5.8)

Notwithstanding the requirements of Subclause 3.5.8 all covers shall be Type 2A with circular frame bases in accordance with SABS 558 and shall be embossed with the relevant wording.

PSLD10 Tests (Subclause 7.2)

All acceptance tests shall be carried out in the presence of the Engineer in accordance with the air test.

All manholes will be tested separately for water tightness.

PSLD11 Measurement and Payment (Subclause 8.2.3)

PSLD11.1 Manholes

Depth of manholes shall be defined as the distance from the top of the cast iron cover to the lowest pipe invert level of the manhole.

PSLD12 Connection to Existing Sewer (Subclause 8.2.11)

The Contractor shall connect to existing manholes and pipelines at the positions indicated on the drawings.

PSLD12.1 Measurement and payment

PSLD12.1.1 Connection to existing sewers Unit : No

The rate for this item will include for excavation, backfilling, breaking into the manhole, dealing with the existing flow, connecting and modifying the benching, ensuring no foreign matter enters the existing sewer and making good to the Engineer's satisfaction.

PSLD13 Anchor Blocks to sewers (Subclause 8.2.7) **Unit : m3**

The rate for this item will include for excavation, disposal of surplus, encasing and form work for sewers on a slope steeper than 1 :10.

PSLE STORMWATER DRAINAGE

PSLE1 Concrete Pipes (Subclause 3.1)

Pipes for stormwater drainage shall be reinforced concrete Type SC Class 100D as scheduled, with ogee joints Interlocking joints shall be wrapped with a 500 mm wide geofabric Bidim A2 or approved equivalent strip overlapping at least 300 mm.

PSLE2 PREFABRICATED CHAMBERS AND SHAFTS (SUBCLAUSE 3.4.2)

Brick manholes may be used for depths up to 2.0 m as an alternative to precast concrete manholes.

The maximum length of the shaft shall be 600 mm.

PSLE3 MANHOLE COVERS, GRID INLETS ETC (SUBCLAUSE 3.4.3)

Notwithstanding the requirements of Subclause 3.4.3 and the Specification drawings bound in the document, covers and frames shall be Type 2B in roads and Type 4 in other areas in accordance with SABS 558, unless otherwise specified. Catchpits will have Type 9D covers and frames.

PSLE4 MEASUREMENTS AND PAYMENT (SUBCLAUSE 8.2)

PSLE4.1 Supply and Install Manholes (Subclause 8.2.8)

For measurement and payment purposes the depth of a manhole is defined as the depth from the top of the cover to the pipe invert level to the manhole.

PSMJ SEGMENTED PAVING (SABS 1200 MJ)

PSMJ3 MEASUREMENT AND PAYMENT

PSMJ3.1 Construction of Paving Complete **Unit:m2**

Notwithstanding the provisions of SABS 1200 MJ subclause 8.2.2 the rate shall also cover the cutting of units to fit edge restraints and rolling to lock-up condition.

PSMK KERBING AND CHANNELLING

PSMK1 Bedding Material (Subclause 3.9)

All bedding and backing for kerbs shall be 15 MPa/19 mm concrete.

PSMK2 Precast Concrete Kerbing and Channelling (Subclause 5.2)

Provision shall be made for expansion joints of width 10 mm at intervals not exceeding 20 m.
Joints shall be filled with suitable silicone or polysulphide sealant.

Add to Subclause 5.2 the following:
Notwithstanding the fact that vertical curves have not been specified where changes of grade of up to 2% occur, the kerbs and channels shall be laid to levels based on a minimum vertical curve length of 20 m.

No change in grade shall be applied on kerbs in bellmouths unless specific levels are indicated.

PSMM ANCILLARY ROADWORKS

PSMM1 General (Subclause 3.2.1)

Road traffic signs shall be purchased from an approved manufacturer and shall be fabricated in accordance with the South African Road Traffic Signs Manual and as specified below.

PSMM2 Reflective Material (Subclause 3.2.9)

Add to clause 3.2.9 the following:
Non reflective material shall conform to the respective quality requirements, apart from the reflective quality requirements, of CKS 191.

PSMM3 Supports (Subclause 5.2.1.1)

Posts shall be fabricated 75 mm outside dia 3 mm steel tubing to SABS 657.

The posts shall be straight with a smooth finished surface free rust, scale, grease or foreign matter.

Posts shall be suitably drilled to permit the sign plates or frames being firmly fixed to the

posts by at least two (2) M12 galvanised steel bolts, complete with fibre washers.
The open ends of all posts shall be closed either by the use of standard fittings or by welding on a mild steel plate.

After the posts have drilled, all welding completed, and all sharp edges rounded off and smoothed down they shall be zinc coated using the 'hot-dip' process in accordance with SABS Specifications 763 'Hot-dip' (Galvanised) Zinc coating".

Should any modifications be made to posts after galvanising, the posts shall be completely regalvanised as described above.

PSMM4 Backing Plates and Boards (Subclause 5.2.1.2)

All Regulatory and Danger Warning sign plates and Information signs having a width of 1,5 metres or less shall be NS 4-H6 or SIC-H4 aluminium alloy plates with a thickness of not less than 2 mm and shall conform to BS 1470. The plates shall be stiffened by means of aluminium reinforcement to BS 1476 HE19WP, rivetted to the back of the sign by means of 5 mm diameter aluminium rivets spaced at 200 mm or less from one another.

PSMM5 Installation of Road Signs (Subclause 5.2.4)

Steelwork which is to be cast or grouted into concrete shall be cleaned of loose rust, scale, oil or any other material which may in the opinion of the Engineer impair the bond between the concrete and the steel.

The posts for road traffic signs shall be placed in holes of not less than nought comma nine metres (0,9 m) in depth and shall be embedded in well compacted Class 10 concrete to the full depth of the hole and a minimum of 400 mm x 400 mm.

The top level of concrete shall be seventy-five millimetres (75 mm) below ground level. Traffic signs shall be securely and firmly fixed to the posts by means of M12 bolts.

Road traffic signs erected in place shall be true to the required dimensions, free from buckles or dents, shall be vertical in the required position and shall have a neat workmanlike appearance.

C3.5.4 PART D: ADDITIONAL SPECIFICATIONS

C3.5.4.1 GENERAL

This part of the project specifications deals with matters relating to the additional specifications to the standard specifications, consisting of the following:

- Requirements of The Occupational Health and Safety Act Regulations
- Environmental Management Plan

- Provision of Structured Training
- Requirements of Extended Public Works Programme

These "Additional Specifications" are not bound into this document and can be obtained from the Employer.

BPS-1 DESCRIPTION OF THE SITE AND ACCESS

1.1 Location of site

The project is located in the Musina town central business district (CBD). It is within the jurisdiction of Musina Local Municipality in Vhembe District Municipality of Limpopo Province in Republic of South Africa, and it is Ward 1. The project co-ordinates are as tabled.

Description	Longitude	Latitude
Main Office	30° 2'27.74"	22°21'4.33"
Old Traffic Office	30° 2'42.51"	22°20'36.24"

PS-2 DETAILS OF THE WORKS

The works are fully described in the contract drawings, bill of quantities and are again summarized above in item "*Extent of the Works*" above.

PS-3 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

3.1 General

The Contractor is referred to SANS 1921: 2004 parts 1, 2 and 3: Construction and Management Requirements for Works Contracts. These specifications shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

3.2 Drawings (Read with SANS 1921 – 1: 2004 clauses 4.1.7; 4.1.11 and 4.1.12)

The reduced drawings which form part of the tender documents shall be used for tendering purposes only.

3.3 Responsibilities for design and construction

Only the Engineer is allowed to perform design functions.

3.4 Planning and Programme (Read with SANS1921-1:2004 clause 4.3)

The project programme submitted during tender, as amended and approved by the Engineer shall be the contractual programme.

3.5 Quality Assurance (QA) (Read with SANS 1921 – 1: 2004 clause 4.4)

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of

the Engineer or the Engineer's representative to act as foreman or surveyor.

3.6 Management and disposal of water (Read with SANS 1921 - 1 : 2004 clause

The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that the works or parts thereof are kept dry and properly drained.

Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

3.11 Testing (Read with SANS 1921 – 1 : 2004 clause 4.11)

Process control

The Contractor shall arrange for all tests required for process control to be done. The cost of process control is deemed to be included in the rates, and no special pay item is provided for such.

Acceptance control

The process control test results submitted by the Contractor for approval of materials and workmanship will be taken into account by the Engineer in his appraisal for acceptance. However, the Engineer shall commission further acceptance control testing by a commercial laboratory of his choice. The cost of such acceptance control testing is carried by the Employer.

3.12 Site Establishment (Read with SANS 1921 - 1 : 2004 clause 4.14)

Contractor's camp site and depot

A full-time site camp is allowed.
The Contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment shall 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.

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

Accommodation of Employees
The Contractor shall make his own arrangements to house his employees and to transport them to site. No additional payment shall be made for transport of labour to and from site, and the rates shall be deemed to include the cost of transportation.

No informal housing or squatting will be allowed on the site.

The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees.

3.13 Survey beacons (Read with SANS 1921 - 1: 2004 clause 4.15)

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as bench-marks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or

pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

3.14 Existing Services (Read with SANS 1921 - 1: 2004 clause 4.17)

Existing services known to the Employer are indicated on the drawings. The positions of services are indicative and the exact location thereof shall be confirmed by the Contractor by exposing the services through careful hand excavation. The approval of the Engineer shall be obtained prior to any hand excavation.

3.15 Health and Safety (Read with SANS 1921 - 1: 2004 clause 4.18)

3.15.1 General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No181 of 1993, and the OHSA 1993 Construction Regulations 2003 issued on 18 July 2003 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act in the form as included in section C1.2.4

Health and Safety Specifications and Plans

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification is included in Part E of the Project Specifications.

(b) Tenderer's Health and Safety Plan

The Tenderer shall submit before commencement of his works his own documented Health and Safety Plan for the execution of the works under the contract. His Health and Safety Plan must

comply with the employer's specification, at least cover the following:

(i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 7 to 28;

(ii) pro-active identification of potential hazards and unsafe working conditions;

(iii) provision of a safe working environment and equipment;

statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (Regulation 5);

monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;

details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and

details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2003.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment, if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

Cost of compliance with the OHSA Construction Regulations

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract.

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

PS-5 EXTENSION OF TIME DUE TO ABNORMAL RAINFALL

The formula below shall be used to calculate separately the delay for each calendar month or part thereof. It shall be calculated each month during the period referred to in the general conditions of contract as the time for completion of the works (including any extension thereof that may have been granted), or until the issue date of the certificate or practical completion, whichever is the shorter period. The delay calculated for a given month shall be used to determine the interim extension of time granted for that month. At the end of the applicable period referred to above, the aggregate of the monthly delays will be taken into account for the final determination of the total extension of time for the contract:

$$V = \frac{(Nw - Nn) + (Rw - Rn)}{X}$$

If any value of V is negative and its absolute value exceeds Nn, then V shall be equal to minus Nn.

The delay for a part of a month shall be calculated by substituting pro rata values for the variables in the equation.

The symbols shall have the following meanings:

V = Delay due to rain in calendar days in respect of the calendar month under consideration.

Nw = Actual number of days in the calendar month on which a rainfall of Y mm or more per day has been recorded.

Rw = Actual rainfall in mm for the calendar month under consideration.

Nn = Average number of days in the relevant calendar month (as derived from existing rainfall records provided in the project specifications) on which a rainfall of Y mm or more per day has been recorded.

Rn = Average rainfall in mm for the calendar month, as derived from the rainfall records supplied in the project specification.

X = 20, unless otherwise provided in the project specifications.

Y = 10, unless otherwise provided in the project specifications.

The total delay that will be taken into account for the determination of the total extension of time for the contract shall be the algebraic sum of the monthly totals for the period under consideration. But if the grand total is negative, the time for completion shall not be reduced on account of abnormal rainfall. The total extension of time for any calendar month shall not exceed (Nc – Nn) calendar days, where Nc= number of calendar days in the month under consideration.

The factor (Nw – Nn) shall be considered to represent a fair allowance for variations from the average for the number of days during which rainfalls equals or exceeds Y mm per day.

The factor (Rw – Rn) ÷ X shall be considered to represent a fair allowance for variations from the average for the number of days during which rainfall does not equal or exceed Y mm per day, but when wet conditions prevent or disrupt work.

This formula does not take into account any flood damage, which could cause further or concurrent delays and which should be treated separately in so far as extension of time is concerned.

Accurate rain gauging shall be taken at a suitable point on the site daily at 08:00 unless otherwise agreed to by the engineer, and the contractor shall, at his own expense, take all necessary precautions to ensure that the rain gauges cannot be interfered with by unauthorised persons.Existing rainfall records, fromStellenbosch rainfall station are available from the South African Weather Service.

PS-5 CONTRACTORS RESPONSIBILITY

The Contractor undertakes to render the Services in a proper and workman like manner during the currency of this Agreement and warrants to the Employer that it has the necessary skill and expertise to do so in a competent, professional and on a cost effective basis.

Without derogating from the generality of the provisions of clause 2.1, the Contractor shall at its cost, in rendering the Services:

adhere to directions given to it by the Employer's General managers at the Operations in relation to the utilisation of the Machinery for the purpose contemplated in this Agreement;

ensure that the Machinery is maintained in good order and condition during the currency of this Agreement;

be liable for all loss or damage of whatsoever nature caused to the Machinery for whatsoever reason and shall forthwith repair/replace any damaged Machinery so as to not interrupt the rendering of the Services;

comply with all obligations imposed upon it by any law in relation to the manning and operation of the Machinery and in particular those obligations imposed upon it in terms of the provisions of, inter alia, the Site Instructions and Rules, HSEC SOP and the Compensation for Occupational Injuries and Diseases Act, 1993;

ensure that it has at all times the required Machinery available to render the Services;

at all times comply with relevant legislation relating to coal processing plants, environmental issues and health and safety concerns;

at all relevant times have all permits required in terms of any law or regulation for the operation of the Machinery in terms of this Agreement;

be responsible for the prevention of all spillage of oils, fuels, greases and other deleterious matter from the Machinery, whether operated by it or its sub-contractors and in respect of any such spillage or deposition which may occur, the Contractor shall be responsible for and bear the costs of clearing all resultant pollution to the reasonable satisfaction of The Employer and any relevant authority;

ensure that those persons utilised by it in the rendering of the Services (including but not limited to its employees, sub-contractors, agents and the like) are trained, experienced, competent and efficient in their respective trades and occupations;

ensure that all machine operators are in possession of valid operator certificates (if required in terms of any relevant legislation) from the effective date of their appointment and duly maintain such certificates;

furnish the Employer with such reports in relation to the rendering of the Services as and when so required by the Employer or when so required in terms of any relevant legislation;

attend any meetings reasonably called by the Employer from time to time;

not use the land forming part of the Operations for any purpose whatsoever other than for the rendering of the Services and shall place any facilities and the like as may be required for itself and its employees only on those portions of the Operations as may be approved by the Employer;

take all reasonable precautions to prevent the outbreak of fire;

ensure that a pre use or some such similar record book be kept for each piece of the

Machinery, which book shall record, but not limited to the following information:
Operator's name.
Operator's employee number.
The date and the time when the shift commenced and ended.
The opening and closing meter reading for every shift.
each pre use checklist must be signed off by the Contractor's nominated supervisor at the Operations on a daily basis.

PS-6 PARTICIPATING OPERATION

6.1 The service will be provided by the contractor to the following site:

Musina Local Municipality main and old traffic offices.

PS-7 PROJECT TEAM

7.1 The Contractor is responsible to ensure that enough people are employed to execute the Service thoroughly and properly, based on the following project team.

NAME	DESIGNATION FOR THE CONTRACTOR	PROJECT TEAM

Refer to returnable schedules	Contracts Manager
	Site Agent

PS-8 SITE CONDITIONS

8.1 The prevailing climate at the Site is warm and wet summers and cool and dry winters. Fog may occur during the early hours of the morning during winter.

8.2 The Contractor is expected to take climatic conditions into account in his planning.

8.3 A Geotechnical investigation report is included with the tender document.

PS-9 WORKING HOURS

The Contractor shall determine the required working hours and shift structures which will meet the deliverables requirements.

9.1 The limitations on maximum hours of overtime must be adhered to as defined in the Basic Conditions of Employment Act, Act 75 of 1997.

PS-10 HEALTH AND SAFETY

In performing the Works the Contractor shall meet the requirements of the Employer's Health and Safety standards and have due regard for the guidelines set out in the "Contractor's Pack" that needs to be completed before commencement of the Contract. The Contractor acknowledges that it has made adequate provision in its unit rates to accommodate all such requirements and guidelines.

PS-11 SITE DISESTABLISHMENT

11.1 All structures including fencing and like erected by the Contactor as part of its site

establishment shall, upon the termination or cancellation of the Agreement, must be removed by Contractor at his own cost

PS-12 CONTRACTOR'S PERSONNEL

12.1 General

The Contractor shall ensure that there are, at any given time, sufficient personnel on site to ensure a safe and efficient working environment.

12.2 The Contractor's Representative

The Contractor shall appoint a competent representative, that shall in turn be appointed by the Employer under the Mine, Health and Safety Act. This person shall report to the Employer and shall be responsible for the entire conduct and execution of the Contractor’s Scope of Work.

12.3 Other Senior Personnel

12.3.1 The Contractor shall provide details of all the Senior Personnel nominated for the project together with information on their qualifications and relevant experience. The Employer reserves the right to reject any or all of these persons if their qualifications or experience are, in his sole opinion, inadequate. The Employer reserves the right to have any person removed from site without having to give any reason and without recourse by the Contractor.

12.3.2 The Contractor shall be obliged to ensure that such persons so nominated shall as far as reasonably possible be employed on the project until completion, and, no Senior Personnel shall be transferred off the project without the written consent of the Employer.

12.4 Qualifications: -

The Contractor shall ensure that the following minimum recognized qualifications are applicable for the various positions:

12.4.1 Safety Officer,

Valid First Aid Certificate;

12.4.2 Operators of self-propelled mobile machines

Certificate issued after compliance with requirements of Regulation and approved by the Employer's induction program.

C3.5.4.2 BUILDING CONSTRUCTION SPECIFICATIONS

Except as hereinafter provided for, the Building Construction specifications to be used on this Contract shall comprise the following:

1. RESTRICTED EARTHWORKS

1.1 SCOPE

This section covers generally the excavation and backfilling for pipework, drains, ducts and associated minor structures such as manholes and inlet and outlet structures to culverts.

Included also in this section are restricted excavation for paths or open channels for access or drainage purposes, and the construction of narrow fills of small cross section, all of which normally require the use of either plant of small capacity, such as trench excavators and hand guided compaction equipment.

Insofar as they are included in this Document, Standard Specification Section EE shall cover, respectively, earthworks in bulk, and for major structures.

1.2 MATERIALS

1.2.1 TOPSOIL

Topsoil is the upper layer of the existing soil (prior to the commencement of earthworks) that contains organic material and other substances suitable for supporting plant growth.

1.2.2 HARD

Hard is any material which, in the opinion the Engineer, can be removed only by systematic drilling and blasting, and incidental boulders or detached fragments of solid rock of over 0,2 cubic metres in volume.

If the Contractor considered that any material should be classified as hard, he shall request the Engineer to examine the material before continuing with the excavation, and shall at his own expense provide such assistance, in terms of plant or labour, as the Engineer may require for his examination of the material. Material shall only be classified as hard when the Engineer has given his agreement in writing, and after a full record of the amount of hard material has been agreed upon. No consideration will be given to the re-classification of any material as hard subsequent to its excavation.

1.2.3 SOFT

All other material not classified as hard shall be classified as soft.

The Contractor shall be at liberty to use any means at his disposal, including drilling and blasting, for dislodging material which has not been agreed as hard, but he will only be paid at the rates tendered for soft material.

1.2.4 SELECTED BACKFILL

Unless selected backfill is defined elsewhere in the document, it shall consist of a granular, non-cohesive material that passes a 37,5mm sieve and that is free of organic and other deleterious materials.

1.2.5 SELECTED FILL

Unless otherwise detailed in the Project Specification or on the drawings, selected fill is the top 150mm thick layer of bulk fill that shall have a maximum P.1. of 12, a minimum G.M. of 0,75, and a minimum strength equal to a C. B.R. of 10 at the required compacted density.

1.3 EQUIPMENT

The Contractor shall maintain on the site in good working order adequate equipment for carrying out the required work in a safe and efficient manner in accordance with these Specifications and the conditions of his Contract.

1.4 CONSTRUCTION

1.4.1 GENERAL

The Contractor shall be fully responsible for the execution of the work in accordance with all requirements of the Central and Local Authorities. He shall be fully responsible for the provision, erection, and maintenance of all temporary signs required by and to the satisfaction of the authorities and the Engineer.

The work shall be carried out in a manner which, in the opinion of the Engineer, will cause a minimum of inconvenience to others.

Where the Works are crossed by rights of way, or by any other permanent accesses, the Contractor shall provide and maintain temporary accesses by means of safe and protected paths, roads, bridges, or any other requirements all to the satisfaction of the Engineer.

1.4.2 CLEARING OF SITE

Before commencement of any earthworks, the Contractor shall remove all debris and coarse vegetation over such widths that are adequate to ensure that undesirable material cannot contaminate material that is to be used subsequently, and to allow for access alongside the excavations.

The widths to be cleared shall be to the Engineer's approval. Material cleared shall be burned, carted away, buried or otherwise disposed of to the approval of the Engineer.

1.4.3 REMOVAL OF TOPSOIL

Where required the Contractor shall remove the topsoil over the areas indicated and to the required depths in order to prepare for excavation, filling, or other construction, or to obtain suitable material for supporting vegetation on fill or cut surfaces.

Any material that is suitable and required for use as topsoil shall be kept separate and used as directed immediately in its final position or stockpiled. The remainder of the material removed shall be spread to waster or otherwise disposed of as directed by the Engineer.

1.4.4 USE OF EXPLOSIVES

The Contractor shall be responsible for the acquisition, transport, custody and use of explosives on the Contract and shall comply with the requirements of the Explosives Act of 1956 and Regulations and all amendments thereto and to the requirements of the South African Police.

Copies of all returns, reports and applications to, and licences, permits and authorities issued by such Statutory Bodies shall be furnished to the Engineer by the Contractor. Nothing contained in this Contract nor any approval or instruction by the Engineer shall relieve the Contractor of any of his obligations and responsibilities under any Statutory Acts or Regulations existing or introduced during the period of contract.

The Contractor shall be responsible for the sitting, erection, fencing, and maintenance and licensing of explosives and detonator magazines, required for the satisfactory performance of the Contract. Proposals for the sitting shall in the first instance be submitted to and receive the approval of the Engineer prior to any approach being made to the authorities concerned.

The Contractor shall be responsible for the guarding of magazines in terms of any regulations which may be in force or come into force during the period of contract and shall comply with any instructions given from time to time by any Statutory or Local Authority in this connection.

The Contractor shall accept all risks and liability resulting from any blasting operations which he may conduct on the site. All blasting shall be carried out by a fully qualified surface blaster who shall observe all of the relevant requirements of the current Explosives Act.

If, in the opinion of the Engineer, blasting would be a danger to the public, property or services, or is being carried out in a reckless manner, or justified complaints are received concerning blasting operations, the Engineer may order all blasting operations to cease. The Contractor shall have no claim by reason of such order.

All costs incurred in the acquisition storage, transport and use of explosives shall be deemed to be covered by the rates inserted against the relevant items in the Schedule of Quantities.

1.4.5 EXCAVATION

Excavation shall in general be carried out by the Contractor to suit the programme approved by the Engineer, and in the most efficient manner to ensure the expeditious completion of the Works.

Excavation for pipe trenches shall be undertaken progressively along the route of the pipeline and the haphazard opening of trenches along various sections of the Works will not be permitted.

Where trenches cross roads, however, excavations, pipe laying, and backfilling shall be carried out before the final shaping and compaction of the base course and preferably the sub- base, or such other road layer as may be specified in the Project Specifications or required by the Engineer, even if the pipes in these sections have to be laid ahead of the rest of the work.

The Contractor shall keep the length of open trenches to the minimum practicable. No trench excavation shall be allowed to remain open for more than fourteen days before backfilling is completed. The Contractor may, however, be allowed to undertake advance excavation of hard material.

Excavations shall be done accurately to line and level. Those that are to remain permanently open, and those for drains that are designed to be laid in trench conditions, as specified elsewhere, shall be carried out with the tolerances specified in Clause EC 5. In addition, the bottoms of excavations that are to

remain permanently open shall be trimmed to ensure that water can drain freely and without ponding. The bottoms of trenches for drains and ducts shall be trimmed as specified elsewhere in this document.

Unless otherwise specified elsewhere in this document or on the drawings, pipe trench dimensions for payment purposes shall be the following:
Depth : 100mm lower than the required invert level of the pipe.
Widths : For pipes with an outside diameter of up to 300mm :600.

For pipes with outside diameters exceeding 300mm and up to 1000mm: 1,9 x outside diameter.

For pipes with outside diameters exceeding 1000mm: outside diameter + 900mm.

Pipe trenches may be enlarged locally at the joints to provide adequate clearance for jointing. No additional payment will be made for the extra excavation required at the joints and the cost will be considered to be included in the schedule of rates for excavation.

Should the Contractor carry any excavation deeper than specified, he shall at his own cost refill the excess excavation with concrete or suitable compacted material as directed by the Engineer.

In areas where a high incidence of solid rock is encountered, trench widths for pipes may, with the permission of the Engineer, be reduced, in which case the reduced width will[be used in the calculation of excavation quantities.

1.4.6 EXCAVATION FOR WORKING SPACE

Unless specifically ordered, all excavations for structure, manholes, valve boxes and chambers, etc., shall be measured to the net external dimensions. Should working space be required such as where external formwork is necessary, due to the nature of the excavated material, the Engineer may approve additional excavation for working space.

1.4.7 DEWATERING

Suitable arrangements shall be made for the dewatering and keeping dry of all excavations to the satisfaction of the Engineer and until construction is completed. The Contractor shall be responsible for preventing the ingress of storm water flow into the excavation and for the construction of all necessary drainage channels and sumps, for the supply and running of pumps, and for everything necessary for the exclusion of water from the excavations, whether such water arises from storm water or seepage.

Where the bottoms of excavations are softened through the Contractor's failure to comply with the above, the soft material shall be removed and replaced with Class 10/38 concrete or suitable compacted material to the satisfaction of the Engineer, all at the Contractor's expense.

The Contractor shall take full responsibility for the disposal of water from the excavations.

1.4.8 TIMBERING AND SHORING

The Contractor shall provide all the necessary timbering, strutting and shoring required in order to ensure the safety of the excavations, and shall secure any structures or roads adjacent to the Works. Such precautionary work shall be to the approval of the Engineer. Approval by the Engineer of any such precautionary work shall not indemnify the Contractor against any claims or in any way relieve the Contractor of his responsibility under the Contract with regard to the safety of excavations or adjoining structures.

Timbering and shoring shall be arranged in such a way that obstruction of the work to be carried out will be kept to a minimum.

1.4.9 SELECTION AND DISPOSAL OF MATERIALS FROM EXCAVATIONS

It is essential that all materials obtained from excavations shall be used to the best advantage in the construction of the Works, and the onus shall be on the Contractor to ensure that no material is used incorrectly.

The Contractor shall keep apart excavated materials of different quality that are suitable as backfill at various levels.

Any material that is unsuitable for backfill or is surplus after backfilling has been completed shall be spread to waste within a radius of 20m or loaded and carted to spoil as ordered by the Engineer.

The onus shall be on the Contractor to ensure that no material is wasted or used incorrectly and he shall be expected to replace at his own expense any material that has been misplaced by him.

1.4.10 EXCAVATIONS TO BE PASSED

In no case shall concrete, backfilling or pipe laying be carried out in an excavation before the consent of the Engineer has been obtained.

The Contractor shall advise the Engineer whenever any excavations are ready for inspection, and when it is necessary to cover up the work. In default of such notice, the Engineer shall have the right to instruct that the foundations be uncovered by the Contractor and re-instated without extra charge.

1.4.11 OVERBREAK

In cases where concrete has to be cast against excavated faces in hard material, the over- excavation shall be classified as over-break. Overbreak shall be backfilled with concrete a shown on the drawing or as instructed by the Engineer.

1.4.12 BACKFILLING

No backfilling shall commence before the Works to be covered have been inspected and approved by the Engineer.

All backfilling shall be done in layers not exceeding 150mm and shall be carried out simultaneously and equally on both sides of the pipe or structure to avoid unequal lateral forces.

Materials for backfilling at any level (other than "Selected Backfill" or "Granular Bedding Material") shall be of the same quality and be compacted to the same density as the material at the same level adjacent to the backfill, with a required minimum density of 90% modified AASHTO. Backfill material shall not contain any hard lumps of material exceeding 100mm in greatest dimension, nor shall it contain roots or other objects that may have a deleterious effect on the standard of the backfill.

Should there be insufficient suitable backfill material available from the excavation; the Contractor shall import a suitable material as instructed by the Engineer.

Generally, backfill shall be mounded to a height of 80mm above general ground level to allow for settlement and to prevent scouring.

1.4.13 FILL

Before place any material in a particular fill, all preparatory work such as site clearing, removal of topsoil, where ordered by the Engineer, shall be completed.

Fills shall be constructed in layers approximately parallel to the finished levels and compacted in layers not exceeding 150mm in thickness to the densities specified and shall be finished to conform with the final levels as shown on the drawings or as directed by the Engineer.

Should the Contractor, for any reason, place fill outside the lines specified, he shall at his own expense carry out any cutting, removal, trimming or other operations necessary to restore the finished earthworks to the specified lines and levels. No additional payment will be made for over-filling or for carrying out any remedial measures.

In wet weather conditions the construction operations shall be suspended temporarily if the conditions are such that proper placing and compaction of materials cannot be achieved.

1.4.14 MOISTURE CONTROL

Material shall be compacted at the optimum moisture content for Modified AASHTO. Maximum Dry Density with an allowable tolerance of plus one percent or minus two percent of moisture by mass of dry material. Should the material be too wet, due to rain or any other cause, it shall be allowed to dry out to a moisture content conforming to the above requirement before compaction proceeds.

1.5 TOLERANCES

Where measured trench widths are specified for pipes and drains the depth up to a point 500mm above the drain, may not exceed the width specified by more than 100mm, as increasing the trench width would cause overloading of the pipe or drain.

Levels shall not vary by more than 25 mm from those specified, nor may the actual grade vary from that specified by more than 10% of the specified grade.

The finished outlines of permanent cuts or fills shall nowhere vary by more than 50mm from the lines shown on the drawings.

The compacted thickness of any layer shall nowhere exceed the specified thickness by more than 10%.

1.6 TESTING

1.6.1 GENERAL

The Contractor shall be fully responsible for the quality of all work produced, both in respect of materials used and of workmanship, and shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out in accordance with the Specifications.

The Contractor shall provide adequate staff, equipment and facilities for carrying out such tests. Should the Engineer at any time consider that the staff, equipment, or facilities are

Inadequate, he may instruct the Contractor to cease further work until such time as any deficiency has been remedied.

All results shall be reported to the Engineer on approved forms within one working day after the minimum period of time required to carry out the relevant tests. Any further work or covering up of work before tests have been carried out, or before their results are available, may only be done with the Engineer's approval and at the Contractor's risk, but all remedial work shall be carried out at the Contractor's expense and to the Engineer's satisfaction.

No separate payment will be made to the Contractor for any test required of him, and all costs shall be deemed to be included in the tendered rates.

Should the Contractor fail to carry out any of the tests required of him, the Engineer may arrange for such tests to be carried out at the Contractor's expense. All costs of such tests shall be deducted from any payment moneys due to the Contractor.

The Engineer will carry out such additional check testing as he considers necessary, but this fact will in no way relieve the Contractor of his obligations as specified herein.

1.6.2 SOIL TESTS

All testing shall be carried out in accordance with the methods specified in the latest revision of the "Standard Methods of Testing Materials", and annexure thereto, as issued by the Department of Transport.

If so specified in the Project Specification, the Contractor shall equip himself to carry out the following tests.

Indicators, consisting of sieve analysis and determination of Atterberg constants.

Modified AASHTO moisture-density tests.

Determination of in-place densities and moisture contents.

1.6.3 TEST FREQUENCIES

The Contractor shall be required to carry out in-place density tests at frequencies ordered by the Engineer.

1.7 MEASUREMENT AND PAYMENT

1.7.1 GENERAL

Before commencement of construction of any new portion of the Works, the Contractor shall ascertain, together with the Engineer whether sufficient information is available from the drawings or from existing surveys to enable full measurement to be made of that portion of the Works, and shall indicate in writing whether such information is acceptable to him.

Should the available information be insufficient or unacceptable to either the Engineer or the Contractor, further surveys shall be carried out by the Engineer and the Contractor together, to allow for full agreement of all the necessary information to be made in writing before the start of construction. Any assistance required to be provided by the Contractor shall be at his own expense.

Excavation in excess of the specified dimensions or authorized by the Engineer shall not be measured for payment.

1.7.2 EXCAVATION

Depending on the description in the Schedule of Quantities the unit of measurement for excavation shall be the cubic meter (m3) to the dimensions as specified or lineal meter(m) for different pipe sizes.

Where depth ranges are schedules, each rate shall apply to the full measured depth of trench lying within the relevant depth range. Payment shall distinguish between trench excavation and excavation for minor structures such as manholes, catch pits, etc. Excavation for "hard" material shall be paid extra over that for soft and shall apply irrespective of depth.

The tendered prices shall include for all excavation, for trimming the bottom of the excavation, for disposal of excess or unsuitable material within a radius of 20m from its original position for keeping excavations safe and for any other operations necessary to complete the Works as specified.

The tendered prices for excavation shall also include for site clearances, where this is not measured under a separate payment item.

1.7.3 LOAD EXCAVATED MATERIAL AND CART TO SPOIL

Surplus or unsuitable material from excavation which the Engineer orders to be loaded and carted to spoil shall be measured per cubic metre (m3). Wherever possible the quantities shall be measured from cross sections taken in place before loading, but if acceptable to the Engineer, the quantities may be calculated from a load count of the haul units, with 70% of the measured volume of the haul units being accepted as the equivalent volume in cut before loading.

The tendered price shall include for loading, hauling within a free-haul distance of one kilometre, dumping, spreading, shaping and trimming of the spoil dumps all to the satisfaction of the Engineer.

1.7.4 OVERBREAK

The unit of measurement shall be the square meter (m2), the quantity being based on the net surface area of the structure in direct contact with the surfaces of hard material.

Payment shall include for all trimming, cleaning and backfilling, distinction being made between the various classes of concrete required.

1.7.5 BACKFILL

The unit of measurement shall be the cubic meter (m3') of backfill material in place after compaction, the quantity being calculated from the dimensions of backfill as shown on the drawings, or as ordered by the Engineer.

Payment shall distinguish between backfill and selected backfill, furthermore distinction shall be made between backfill material obtained from the excavation and backfill material imported on Instruction from the Engineer. The free-haul distance on imported backfill material shall be one kilometre. Payment shall include for all placing, watering and compaction to the specified density.

1.7.6 FILL

The unit of measurement shall be the cubic meter (m3) of material in place after compaction, the quantity being calculated from the dimensions of fill as shown on the drawings or ordered by the Engineer.

Payment for fill shall include for all costs of procuring and furnishing within a free-haul distance of one kilometre, placing, watering, compacting, shaping and trimming the material to the specified cross sections. Payment shall distinguish between fill and selected fill.

1.7.7 OVERHAUL

Overhaul shall be measured per cubic metre-kilometre (m3-km), and shall be computed as the product of the measured volume of material hauled further than the free-haul distance and the additional distance (to the nearest 0,1 km over the free-haul distance) hauled, all with the Engineer's agreement. The haul distance shall be the distance from the centre of volume of

the material in place before excavation to the centre of volume of the material in place after disposal in accordance with the Specifications, the Drawings, or the Engineer's Instructions, and measured along the shortest practicable haul route, as determined by the Engineer. The volume of material measured for overhaul shall be taken from the applicable volume measurements for spoil, backfill or fill as specified in Clauses 1.7.3, 1.7.5 and 1.7.6.

The prices tendered for overhaul shall include for all costs involved through the haulage of materials over and above the free-haul distance.

2. CONCRETE

2.1 CONCRETOR

2.1.1 SCOPE

This section of the Specification covers all aspects of concrete work including various grades of mass and reinforced concrete, pre-cast concrete, formwork and steel reinforcing, as well as the supply of all materials and labour.

2.1.2 MATERIALS

2.1.2.1 STANDARDS

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS 82 & BS4466 : Bending dimensions of bars for concrete reinforcement

SABS471 : Portland Cement and rapid-hardening cement

SABS626 : Portland blast furnace cement

SABS831 : Portland cement PC15FA

SABS878 : Ready-mixed concrete

SABS920 : Steel bars for concrete reinforcement

SABS973 : Standard form of specification for concrete work

SABS1083 : Aggregates from natural sources

BS915 : High Alimina cement

CKS158 : Welded wire mesh for concrete reinforcement

National Building Regulations

2.1.2.2 CEMENT

All cement used in the Works shall be of the type specified and approved by the Engineer. Where any particular type is not specified it shall be taken to be ordinary Portland cement or PC15FA. All cements shall comply with the relevant standards above.

2.1.2.3 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, sugar and other organic substances. Water suitable for drinking purposes shall be acceptable. If so required by the Engineer, the suitability of water shall be proved by tests carried out by an approved laboratory.

2.1.2.4 AGGREGATES

Both the coarse aggregate (stone) and fine aggregate (sand) shall comply with the requirements of SABS 1083. Aggregates shall be obtained from approved sources which shall not be changed without the written consent of the Engineer.

When tested in accordance with the above Specification, the following requirements shall also apply:

Soundness

Fine aggregate : maximum loss5%

Coarse aggregate : maximum loss15%

Shrinkage

0,05% maximum

2.1.2.5 ADDITIVE SO RAD MIXTURES

The Contractor will be permitted to use such additives or admixtures as may be necessary to achieve the required consistency of the concrete subject to the prior approval of the Engineer.

2.1.2.6 REINFORCEMENT

All steel reinforcement shall, at the time of placing of the concrete, be free from loose rust, scale, oil and other coatings which might reduce the bond between the steel and the concrete or initiate corrosion of the reinforcement.

2.1.2.7 STORAGE OF MATERIALS

2.1.2.7.1 Cement

Cement which is stored on site shall be kept under cover that provides adequate protection against moisture and other factors which may promote deterioration.

When the cement is supplied in 50kg sacks, the sacks shall be closely and neatly stacked to a height not exceeding 12 sacks and arranged so that they can be used in the order in which they were delivered to the site. The sack shall not be stacked directly on concrete floors.

Storage of cement in bulk in silos or similar containers shall be permitted provided that the cement drawn for use is measured by mass and not by volume.

Cement shall not be kept in storage for longer than 6 weeks without the Engineer's permission.

Different types of cement shall be stored separately.

2.1.2.7.2 Aggregates

Aggregates of different nominal sizes shall be stored separately and in such a way that segregation is avoided.

Intermixing of different materials and contamination by foreign matter shall be avoided.

2.1.2.7.3 Steel Reinforcement

Steel reinforcement shall be stacked off the ground and, in aggressive environments, protection shall be provided in the form of sheds or tarpaulins.

2.1.2.7.4 Storage Capacity

The storage capacity and the amount of material stored (whether cement, aggregates steel or water) shall be sufficient to ensure that no interruptions to the progress of the Works are occasioned by lack of materials.

2.1.2.7.5 Deteriorated Material

Material that has deteriorated, or that has been contaminated or otherwise damaged, shall not be used in concrete. Such material shall be removed from the site without delay.

2.1.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

2.1.3.1 BATCHING PLANT

Batching or dry constituents of a concrete mix shall be done by mass using suitable batching equipment capable of determining the required mass within an accuracy of 3%. Mixing water may be measured either by mass or by using a flow meter with an accuracy of 3% or better.

2.1.3.2 MIXERS

The concrete mixer(s) shall be of adequate capacity to cope with the maximum sizes of casts required. Unless otherwise approved, mixing shall be carried out in a mechanical batch-mixer of approved type and capable of producing a uniform distribution of ingredients throughout the batch. A standby mixer shall be available for immediate use or the mixing plant shall consist of at least two mixing units.

The Engineer shall have the right to stop the use of any mixer, the blades or paddles of which have, in his opinion, been worn, bent or otherwise rendered ineffective by any build-up of hardened concrete until such time as they have been replaced, repaired or properly cleaned.

2.1.3.3 HANDLING EQUIPMENT

The equipment supplied shall be capable of handling the quantities of concrete involved without undue delay. Mixed concrete shall be discharged from the mixer and transported to its final position in such a manner that segregation, loss of ingredients and adulteration are prevented and that the mix is of the required workability at the point and time of placing.

Standby hoists or cranes shall be provided where applicable.

2.1.3.4 VIBRATORS

The Contractor shall supply an adequate number of suitable vibrators, including provision for standby units, to ensure that all concrete is adequately vibrated and that the placing of concrete is not delayed due to a short supply of vibrators.

The Engineer shall have the right to refuse permission for the casting of concrete if, in his opinion, vibrators of suitable quality or numbers are not available on site.

2.1.4 CONSTRUCTION

2.1.4.1 RECORDS

The Contractor shall maintain written records that provide the following information:

Date on which each section concreted, time was taken to place and the position of the section in the Works.

Daily maximum and minimum temperatures and general weather conditions.

Nature of samples and dates on which they were taken, including identifying marks.

Results of tests on samples taken.

2.1.4.2 REINFORCEMENT

2.1.4.2.1 Bending

Reinforcing bars shall be bent to the dimensions shown on the working drawings and in accordance with SABS 82. No hand straightening of reinforcing will be permitted. Bars requiring straightening shall only be straightened by a machine made for that particular purpose. The straightened bars shall have not kinks or waves.

The bending and re-straightening of bars partially built in will not be permitted. Except as allowed for below, all bars shall be bent cold and bending shall be done slowly, a steady, even pressure being used without jerk or impact.

If approved, hot bending of bars of diameter at least 32mm shall be permitted, provided that the bars do not depend for their strength on cold working. When hot bending is approved, the bars shall be heated slowly to a cherry red heat (not above 843°C) and after bending shall be allowed to cool slowly in air. Quenching with water shall not be permitted.

2.1.4.2.2 Fixing

Reinforcement shall be secured against displacement by tying at intersections with 1, 6 or 1,25 mm diameter annealed wire or by the use of suitable clips, or if permitted by the Engineer, by welding. It shall be supported in its correct position by handlers or saddles, and aligned by chairs and spacers of approved design and material. Where such hangers, saddles, chairs or spacers are of steel they will be detailed on the drawings or in bending schedules.

2.1.4.2.3 Cover

The minimum cover of concrete over reinforcement shall be as shown on the working drawings. Where this is not indicated, the minimum thickness of the cover, measured from the outside of a bar of diameter 'd' mm shall be not less than the appropriate value, or greater of the appropriate values, as relevant, provided column 2 of Table 4-1.

TABLE 4-1: COVER TO REINFORCEMENT		
No.	TYPE OF CONSTRUCTION	Minimum cover (mm)
1.	General Over all bars including ties, stirrups and all secondary reinforcement	15 or d
2.	Ribbed floors and roofs	15 or d
No.	TYPE OF CONSTRUCTION Ribs and slabs	Minimum cover (mm) 15 or d
3.	Slabs and walls:	
	(a) Normal	15 or d

	Exposed to water pressure Slabs laid on ground; external walls	25 25
4.	Main bars in:	
	Columns Beams: end cover beyond hooks	40 or d 25 or 2d
	Beams: at other surfaces Members not elsewhere specified	25 or d 25 or 2d
5.	Surfaces in contact with backfilling:	
	(a) Bars of dia. up to and including 16mm	40
	(b) Bars of dia. over 16mm	50
6.	Surfaces of footing or other members cast in contact with the ground or on a blinding layer	75

2.1.4.2.4 Splicing

Splicing or joining of reinforcing bars shall be made only as and where shown on the working drawings or as otherwise approved.

The length of the overlap in a splice shall be not less than that shown on the working drawings.

2.1.4.2.5 Protection of Exposed Bars

If left exposed for future bonding of extensions to the Works, reinforcement shall be protected from corrosion as specified by the Engineer.

2.1.4.3 SHUTTERING

2.1.4.3.1 Design

Shuttering shall be so designed and constructed that the concrete can be properly placed and compacted and that the required shapes, levels, and dimensions shown on the working drawings are maintained.

The shuttering and joints shall be capable of resisting the dead load, pressure of the wet concrete, wind forces, and all other superimposed loads and forces.

Wedges and clamps shall be used in preference to nails. Special care shall be taken if the concrete is to be compacted by vibration.

Joints in forms shall be tight enough to prevent leakage of cement paste.

The Contractor is required to make his own camber allowances for any deflection of formwork which is likely to arise during construction.

2.1.4.3.2 Finish

The quality of the finished surface of the concrete shall be as shown on the working drawings or as otherwise specified, and the type of shuttering used shall be adequate to provide such finishes. Concrete faces shall be sound and solid, free from honeycombing and excrescence.

The finished surfaces of concrete shall, be rough or smooth as called for on the drawings and as described below.

Rough Finish

Rough finishes will normally be called for where they will not be left permanently exposed; the surface texture is unimportant provided that the concrete is sound.

Smooth Finish

Smooth finishes will be called for on exposed concrete faces where a good standard of surface finish is required. The faces shall have a smooth texture such as is left by the use of planed timber, with all board and panel marks lined up in a regular manner.

Open Concrete Surfaces

Horizontal or near horizontal, upward facing concrete surfaces which are not to be measured as formed faces will be described as open surfaces and shall be finished as follows:

- On completion of placing and compaction of concrete, the surface shall be struck off with a template and tamped with a screed board to give a dense concrete skin true to the required lines and levels. Such finishing shall not be considered to be a special finish and the work involved shall be deemed to be included as part of the placing operation.

Special surface treatment, where required, shall be carried out as follows:

"Wood float finish" : Floating shall be done only after the concrete has hardened

Sufficiently and may be done by hand or machine. Care shall be taken that the concrete is worked no more than is necessary to produce a uniform sand paper surface free from screed marks.

"Steel float finish" : Trowelling shall not commence until the moisture film has disappeared and the concrete has hardened sufficiently to prevent excess laitance from being worked to the surface. The surfaces shall be travelled under firm pressure to a glossy texture and left free from trowel marks.

2.1.4.3.3 Foundation Paper

Where the Engineer approves of the casting of the foundation against the sides of an excavation in material other than sound rock, he will require the Contractor to fix foundation paper against the sides of the excavation to provide a clean impervious surface against which to cast the concrete. Such foundation paper shall be two-ply brown paper reinforced with a bituminised cotton mesh between the layers of paper. It shall be of sufficient durability to withstand the force of the concrete during placing without tearing.

2.1.4.3.4 Drip Moulds and Sharp Edges

Where required, drip moulds shall be provided. Drip moulds shall be formed from 20 mm quadrant or 12 mm half-rounds unless otherwise indicated on the drawings.

All sharp edges inside the forms shall be provided with 25 mm x 25 mm triangular fillets, unless otherwise shown on the drawings or directed by the Engineer.

2.1.4.3.5 Ties

Any metal ties and securing devices used to hold the formwork must be a type which can be later withdrawn, and the holes left must be completely filled with mortar; any metal parts left in the concrete must not be closer than 50 mm from any finished face.

2.1.4.3.6 Preparation of Shuttering

Surfaces that are to be in contact with fresh (wet) concrete shall be so treated (by coating with a non-staining mineral oil or other approved material or, in the case of timber forms, by thoroughly wetting the surface) as to ensure easy release and non-adhesion to shutters during stripping.

If any substance other than water is used, every precaution shall be taken to avoid contamination of the reinforcement.

2.1.4.3.7 Re-use of Shuttering

Before re-use, all shuttering shall be reconditioned, and all shutter surfaces that are to be in contact with the concrete shall be thoroughly cleaned without unduly damaging the surfaces of the shutter.

2.1.4.3.8 Openings

Where necessary for the proper placing of the concrete, temporary openings for cleaning, inspection or placing purposes shall be provided.

2.1.4.3.9 Removal of Shuttering

Shuttering shall not be removed before the concrete has attained sufficient strength to support its own mass and any loads that may be imposed on it. This condition shall be assumed to require the shuttering to remain in place, after placing of the concrete, for the appropriate minimum period of time given in Table 4-2.

However, where the concrete strength is confirmed by tests on cubes manufactured and tested in accordance with Clause ZB 6.1 shuttering supporting cast in-situ concrete in flexure may be struck when the cube strength is 10 MPa or twice the stress to which it will then be subjected, whichever is the greater, provided that such earlier striking will not result in unacceptable deflections due to shrinkage, creep etc.

Shuttering shall be removed carefully so that shock and damage to the concrete are avoided.

Weather may be regarded as 'normal' when atmospheric temperatures adjacent to the concrete as measured by a maximum and minimum thermometer, do not fall below 15'C, and as 'cold' when temperatures measured similarly, fall below 5'C.

When minimum temperatures are between these values, stripping times should be inter- mediate between the periods specified.

TABLE 4-2: REMOVAL OF SHUTTERING: MINIMUM TIMES

Type of structural member of shuttering	Portland cement and Portland cement 15		Rapid hardening Portland cement and rapid hardening Portland cement 15		Portland blast furnace cement	
	Normal Weather	Cold Weather*	Normal Weather	Cold Weather*	Normal Weather	Cold Weather*
1. Beam sides and unloaded columns	9 hrs	16 hrs	5 hrs	10 hrs	14 hrs	24 hrs
2. Slabs with props left under	4 days	7 days	2 days	4 days	6 days	10 days
3.Beamsoffitswithpropsleft under and ribs of a	7 days	12 days	3 days	5 days	10 days	7 days

TABLE 4-2: REMOVAL OF SHUTTERING: MINIMUM TIMES						
ribbed floor construction						
4. Slab props	10 days	17 days	5 days	9 days	10 days	17 days
5. Beam props	14 days	28 days	7 days	12 days	14 days	28 days
6. Free standing arches and walls	2 days	4 days	1 day	2 days	3 days	5 days

*Shorter periods may be used for section of thickness at least 300mm.

2.1.4.4 CONCRETE QUALITY

2.1.4.4.1 Classes of Concrete

The following classes of concrete using Portland cement shall be used, as indicated on the drawings.

STRENGTH CONCRETE			
Class of concrete slab a/b	Minimum 28 days strength (MPa)	Slumb limits	Max. agg. size (mm)
30/19	30	25-75	19.0
25/19	25	25-75	19.0
20/19	20	25-75	19.0
15/19	15	25-75	19.0
15/38	15	25-75	37.5
10/19	10	25-75	19.0
10/38	10	25-75	37.5

In the above concrete class notation - class a/b. "a" denotes the minimum 28 day strength and "b" the maximum aggregate size.

PRESCRIBED MIX CONCRETE						
Class of concrete slab a/b	Estimated 28 days strength (MPa)	Slumb limits mm	Max. agg. size (mm)	Concrete Kg	Total aggregated m^3	Maximum total water (1)
1:3:6/38	15	25-75	37.5	50	0.30	42
1:4:8/38	8	25-75	37.5	50	0.40	50

In the above class notation, class alb, "a" denotes the nominal mix proportions of cement, sand and stone by volume and "b'" the maximum aggregate size.

2.1.4.4.2 Mix Design

Before the start of any concrete work on the site, the Contractor shall supply to the Engineer, for his approval, samples of the constituent materials of the concrete and a statement of the mix proportions which he proposes to use for each class of concrete.

The samples shall be accompanied by evidence that they comply with the requirements of Clause ZB 2. The statement of mix proportions shall be accompanied by a concrete mix design prepared in accordance with the recommendations given in Appendix G (Design of Concrete Mixes) of SABS 973-1970 "Standard Form of Specification for Concrete Work". The value of "F" (Table G2 in Appendix G) to be used shall be1,000.

Where the concrete production facility has a record based on at least 30 consecutive strength tests representing similar materials and conditions to those expected, the strength used as a basis for selecting proportions shall exceed the required minimum 28 days strength by 1,000 x the standard deviation of these results. Where the standard deviation exceeds 4,0 MPa or if a suitable record of strength test performance is not available, proportions shall be selected to produce an average strength at least 8,25 MPa higher than the minimum 28 day strength. The amount by which the average strength must exceed the minimum 28-day strength, may be reduced to an appropriate level below 8,25 MPa after sufficient test data becomes available from the Works to indicate the degree of quality control actually achieved. Any such modification of material proportions must be - approved in writing by the Engineer prior to such modification being implemented on the Works.

Volume batching will normally be used for prescribed mix concrete but small variations in the stated quantities of materials may be necessary to improve workability and shall be allowed for in the rates.

2.1.4.4.3 Consistency and Workability

Slump measurement taken in accordance with ZB 6.5 shall comply with the values specified for concrete in the previous sub-clause. Other methods for determining consistency are permissible, if approved.

The concrete shall be of such a workability that it can readily be compacted into the corners of the formwork and around reinforcement without segregation of the materials or excessive 'bleeding' of free water at the surface.

2.1.4.5 BATCHING AND MIXING OF MATERIALS

2.1.4.5.1 Measuring

Cement

Cement supplied in standard sacks shall be assumed to contain 50 kg. All cement taken from bulk storage containers and from partially used sacks shall be batched by mass, the weighing device having an accuracy within 2 percent of the mass of cement required for the batch.

Water

Mixing water for each batch shall be measured, either by mass or by volume, to an accuracy of within 3 percent.

Aggregates

Batching shall be by mass. Weighing devices shall be maintained in good order and shall have an accuracy of within 3 percent. Each size of aggregate shall be weighed.

Additives

Where additives are used, they shall be measured by a dispenser, approved by the Engineer, which shall deliver accurately in one operation the dose required for one batch of concrete.

Note: In the case of small and/or unimportant structures volume batching may be used for concrete up to a 28-day cube strength of 20 MPa, provided the written approval of the Engineer is obtained beforehand. In this case the quantity of cement in the mix shall be increased by 25 kg per cubic metre of concrete over and above the quantity which would have been used when batching aggregates by mass.

2.1.4.5.2 Mixing

Note: The requirements of SABS 878 shall apply in preference to those given in this clause if concrete is delivered to the site 'ready mixed'.

General

Mixing of materials for concrete shall be conducted by an experienced operator. Unless otherwise approved, mixing shall be carried out in a mechanical batch-mixer of an approved type.

Charging the Mixer

The sequence of charging shall be approved and, unless otherwise instructed, the same sequence shall be maintained.

The volume of the mixed material per batch shall not exceed the manufacturer's rated capacity of the mixer.

Mixing and Discharge

The period of mixing shall be measured from the time when all the materials are in the drum until the commencement of discharge. This period shall be at least 1½ minutes for each batch of 1,5m3 or less, and shall be increased by 20 seconds for each additional cubic meter or fraction thereof. During this period the drum shall be rotated at the speed recommended by the manufacturer of the mixer.

Discharge shall be so carried out that there is no segregation of the materials in the mix. The mixer shall be emptied completely before it is re-charged.

Maintenance and Cleaning of Mixer

If the mixer has stopped running for any period in excess of 30 minutes, it shall be thoroughly cleaned out, particular attention being paid to the removal of any build-up of materials in the drum, in the loader, and around the blades or paddles. Worn or bent blades and paddles shall be replaced.

Before any concrete is mixed, the inner surfaces of the mixer shall be cleaned and all hardened concrete shall be removed.

2.1.4.6 PLACING

2.1.4.6.1 General

The Contractor shall give the Engineer at least 24 hours notice of his intention to place concrete to enable the Engineer to check the shuttering and reinforcement. No concrete shall be placed without the prior approval of the Engineer. The concrete shall be placed within one hour from the time of discharge from the mixer and re-tempering by the addition of water or other material shall not be allowed. The forms to be filled shall be clean internally. All excavations and other contact surfaces of an absorbent nature shall be left damp, but no free water shall be permitted to remain on these surfaces.

Where concrete has to be placed on a soft foundation, a blinding layer of lean concrete is to be placed beneath the structural concrete, this blinding layer to be placed immediately the excavation has been completed and approved. Payment for the cost of placing the blinding layer, where ordered, will be made under the appropriate items in the Schedule of Quantities.

Wherever possible the concrete shall be deposited vertically into its final position. In all cases segregation or displacement of reinforcement and other embedded items shall be prevented by using proper methods of placing the concrete.

The working of deposited concrete (whether by means of vibrators or otherwise) to cause it to flow laterally shall be prohibited. The concrete shall be brought up in horizontal layers of compacted thickness not exceeding 450mm and 'heaping' shall be avoided.

Where chutes are used to convey the concrete, their slopes shall be such as not to cause segregation and suitable spouts or baffles shall be provided for the discharge of the concrete.

Concrete shall not be allowed to fall freely through a height of more than 1,5 m, and it shall not be placed in water (standing or running) unless so approved.

Concrete shall only be placed during daylight hours unless proper lighting arrangements have been made and lights are in working order by midday. Furthermore, workers shall not be allowed to work double shifts and the Contractor shall provide a new and rested shift for night work.

2.1.4.6.2 Concrete with Plums

In plain concrete of thickness not less than 300 mm, hard, clean stone "plums" of mass 15 to 55 kg may, if approved, be used to displace concrete up to a maximum of 20 percent of the volume of the concrete. Such "plums" shall have no adhering films or coatings, while no plum shall have a dimension greater than one-third of the smallest dimension of the concrete member or 300 mm whichever is less. Each plum shall be surrounded by at least 75 mm of concrete.

2.1.4.6.3 Pumping of Concrete

Pumping of concrete shall be allowed only after approval by the Engineer of the methods proposed by the Contractor. Samples of pumped concrete shall be taken at the discharge end of the pipe.

2.1.4.6.4 Compaction

The concrete shall be fully compacted by approved means during and immediately after placing. It shall be thoroughly worked against the shuttering and around reinforcement and other embedded fittings without displacing them.

The concrete shall be free from honey-combing and planes of weakness. Successive layers of the same lift shall be thoroughly blended together.

Compaction shall be carried out by mechanical vibration or (if approved) by spading, rodding, or forking. Over-vibration resulting in segregation, surface laitance, or leakage (or any combination of these) shall not be allowed.

2.1.4.6.5 Joints

Construction Joints

Concreting shall be carried out continuously up to the construction joints shown on the working drawings or as approved, except that if, because of an emergency (such as a breakdown of the mixing plant or the occurrence of unsuitable weather) concreting has to be interrupted, a construction joint shall be formed at the place of stoppage in the manner which will least impair the durability, appearance, and proper functioning of the concrete. In general keyways shall be formed in all horizontal and vertical construction joints.

Construction joints that are visible on the surface where smooth face formwork is used, shall be constructed with special care to obtain a perfectly straight line. In order to achieve this, a fillet shall be attached to the shuttering to define the straight line at the junction of the old and the new concrete. In general these straight lines will be either horizontal or vertical except where otherwise directed by the Engineer.

All vertical construction joints shall be formed against adequate shuttering or bulkheads which shall be placed square across the member in which the joint is to be formed.

The Engineer shall approve the method adopted for forming all construction joints, one of the following methods being adopted, as relevant

Construction joints when concrete is less than 3 days old

The surface of the concrete shall be brushed with a steel wire brush or sandblasted, swept clean, and thoroughly wetted and horizontal and sloping joints shall be covered with a 10 mm thick layer of mortar composed of cement and sand mixed in the same ratio as the cement and sand in the concrete mixture. This mortar shall be freshly mixed and placed immediately before the placing of the new concrete.

Construction joints when concrete is more than 3 days old

The procedure given in (i) above shall be followed, except that the old surface shall be prepared and kept continuously wet for a minimum of 24 hours before the placing of the mortar and new concrete.

Epoxy type resins may be used for bonding at construction joints provided that full details thereof are submitted to the Engineer for his approval. The surface of the older concrete shall be clean and dry and pre-treated as stipulated by the manufacturer. The bonding agent shall be applied in accordance with the

manufacturers' instructions and the fresh concrete placed within the period recommended by the manufacturer.

Construction joints at tops of columns

The procedure for brushing and cleaning given in (i) above shall be followed before the steel reinforcement of the floor to be cast on the columns is placed in position.

Contraction and expansion joints

In joints ordered to be formed as sealed contraction joints, the face of the joint in the concrete slab or block cast first shall be formed with a smooth face. The concrete of the adjacent slab or block shall be cast directly against this face. A groove shall be formed at the exposed edge of the joint and sealed with an approved compound or insertion seal. Alternatively, the Contractor may, subject to the approval of the Engineer as to details of the method, form sealed contraction joints in slabs by means of accurately formed or sawn dummy joints. The groove of the dummy joint shall have a depth one third of the thickness of the slab.

In joints ordered to be formed as sealed expansion joints, approved compressible sheets shall be supplied and placed to allow freedom for the adjacent concrete slabs or blocks to expand. The exposed edges of the joints shall be sealed with an approved compound.

In joints which are not ordered to be sealed, the face of the concrete of the slab or block first formed shall be painted with two coats of approved bituminous paint before the adjoining slab or block is concreted.

Where water stops are ordered, they shall be continuous strips of rubber, plastic, or other approved material, and fixed across water retaining joints. Special care must be taken to ensure that the concrete is well worked against the embedded parts of the strips and is free from honeycombing. All necessary precautions must be taken to protect waterstops from physical damage and from light and heat. Waterstops shall comply with the requirements of Clause

2.1.4.6.6 Curing and Protection

Formwork shall be retained in position for the appropriate period given in ZB 4.3.9, and, as soon as it is practicable in the opinion of the Engineer, all concrete shall be protected from contamination and loss of moisture by one or more of the following methods:

Ponding the exposed surfaces by means of water, except' where atmospheric temperatures are less than5°C.

Covering with sand, sawdust, or mats made of moisture-retaining material, and keeping the covering continuously wet.

Continuous spraying of the exposed surfaces with water.

Covering with a waterproof or plastic sheeting firmly anchored at the edges.

Using an approved curing compound applied in accordance with the manufacturer's instructions. Whatever method of curing is adopted, its application shall not cause staining, contamination, or marring of the surface of the concrete.

The curing period shall be at least 5 days for concrete made with ordinary Portland cement at least 2 days for that made with rapid-hardening Portland cement, and at least 7 days if Portland blast furnace cement is used. When atmospheric temperatures are below 5°C, these minimum curing periods shall be extended by 72, 36, and 72 hours respectively.

2.1.4.6.7 Adverse Weather Conditions

Cold Weather

When the surrounding atmospheric temperature falls below 5°C, effective measures shall be taken to ensure that the temperature of the concrete from the time of placing until it has hardened to the approval of the Engineer, is maintained at 10- 25°C. All surfaces shall be protected from ice or frost damage.

Hot Weather

When the surrounding atmospheric temperature is over 32°C, the temperature of the concrete when deposited shall not be allowed to exceed this figure. Stockpiles of aggregates and all metal contact surfaces shall be shielded from the direct rays of the sun or cooled by spraying with water.

2.1.4.7 CONSTRUCTION DETAILS

2.1.4.7.1 Holes, Chases and Fixing Blocks

No holes or chases other than those shown on the working drawings or approved by the Engineer, shall be cut or otherwise formed in the concrete.

No blocks for the attachment of fixtures shall be embedded in the concrete unless approved by the Engineer.

2.1.4.7.2 Pipes and Conduits

No pipes or conduits other than those shown on the working drawings shall be embedded in the concrete without approval. The clear space between any such pipes and the clear distance between such a pipe and any reinforcement shall be at least 40mm or the maximum size of the coarse aggregate plus 5mm, whichever is greater. The amount of concrete cover over pipes and fittings shall be at least 25mm.

2.1.4.7.3 Water stops

Rubber or PVC waterstops shall be of material and pattern approved by the Engineer. The water stops shall be precision moulded or extruded to the required section and shall be free from porosity or other imperfections. Surface defects shall not exceed 1,5mm in depth or 6mm in greatest lateral dimension.

Where joints in water stops cannot be factory made, site joints shall be made to the manufacturer's instructions. In PVC water stops, only butt joints, square to the longitudinal axis and heat fused, will be allowed. Where crossings, T- or V-junctions occur, these elements shall be factory made and jointed into the system with standard butt joints.

Water stops shall be provided with tags by means of which they can be held securely in position during concreting.

2.1.4.7.4 Patching

After removal of the forms, if the concrete shows any serious defect, the Contractor shall, on instructions from the Engineer, remove all defective concrete and replace it (at his own cost) to the satisfaction of the Engineer. No patching shall be carried out by the Contractor without the prior approval of the Engineer.

2.1.4.7.5 Wall Ties (refer BRICKLAYER Specification for tie details)

Where brickwork must be built against concrete walls, beams or columns, anchors shall be cast into concrete as follows:

For brick linings : galvanised wire ties shall be cast minimum 75 mm into concrete, at least four per square metre.

For end on junctions of brick walls: galvanised hoop iron ties shall be cast minimum

150 mm into columns every 450 mm of height per half brick skin (staggered in height where more than one half brick skin

2.1.4.8 TOLERANCES

Reinforcement shall be positioned as shown on the working drawings and maintained in those positions within the tolerances given in Table as follows:

TOLERANCES		
Position of reinforcement		Tolerance (mm)
1.	Main and distribution bars in slabs: spacing between any two adjacent bars	± 10
2.	Main bars in beams, slabs or ribs, placed at: (a) depths up to and including 300mm (b) depths over 300mm and up to and including 600mm (c) depths over 600mm	 ± 5 ± 10 ± 10
3.	Stirrups, spacing	± 10
4.	Vertical bars in columns	± 5
5.	Bars in walls	± 5
6.	Bars in footings	± 20
7.	Longitude location of bend and ends of bars	± 50

Notwithstanding the above tolerances, the minimum amount of cover on reinforcing bars as specified in Table of the Specification must be maintained.

The tolerances applicable to completed concrete work in general and shuttering in particular shall be as per below:

CONCRETE WORK		
Position		Tolerance (mm) *
1.	Depth of slaps and thickness of walls	± 5
2.	Cross-sectional dimensions of beams, ribs and columns Dimensions up to 500mm Larger dimensions for each additional 250mm (or part thereof) add to tolerance	± 5 3
3.	Variation from plumb of columns: Height up to4,5m Greater height: for each additional 3m (or part thereof) add to tolerance	± 5 3
4.	Footings: on width and depth	± 25
		- 10

* These tolerances apply only to structural elements.

The maximum angular deviation from intended lines shall be 1 in 300 for smooth shuttering and 1 in 100 for rough shuttering. Abrupt irregularities for example, between adjacent panels of formwork shall not in any instance exceed 3mm for smooth shuttering and 5mm for rough shuttering.

2.1.4.9 TESTING

2.1.4.9.1 COMPRESSIVE STRENGTH

During the time in which each class of concrete is being placed, samples of the concrete shall be taken at the rate of at least one sample from each 75 m' or daily whichever is the more frequent. In certain circumstances the Engineer may reduce this requirement at his discretion. A group of at least six 150 mm test cubes shall be made from each sample. Three of these cubes shall be tested at or within 7 days as agreed by the Engineer in order to establish the probable 28 day strength of the remaining three cubes. Each group of test. Cubes shall be deemed to represent the whole of the concrete from which the sample was taken and shall be identifiable with the concrete, Appendix C.

The procedure for sampling, making the test cubes, curing, storing and testing, and the moulds used, shall be in accordance with Chapter 5 : Plain and Reinforced Concrete of the South African Standard Building Regulations, Appendix C.

The Contractor shall provide at least 12 moulds, and if so required by the Engineer, additional moulds, should the rate of concreting warrant them. The Contractor shall provide for transportation of test cubes and cores of concrete or shotcrete to a suitable laboratory approved by the Engineer where they will be crushed.

2.1.4.9.2 COMPRESSIVE STRENGTH FAILURE

Concrete from which test cubes have been prepared shall be considered as having failed to meet the specification if the average compressive strengths (each calculated from the results of tests on at least three cubes) at the age(s) specified in Clause is less than the appropriate values given in column 2, Table below.

If in calculating an average strength it is found that the difference between the highest and the lowest individual cube strengths exceeds 20% of the average strength of the three cubes, the result shall be discarded.

COMPRESSIVE STRENGTH	
Number of consecutive tests within 28 days on any on class of concrete	Percentage of specified minimum strength
1	82
2	88
3	95
4	98
5 or more	100

2.1.4.9.3 PROCEDURE IN THE EVENT OF FAILURE

If, the concrete is considered by the Engineer to have failed to comply with the Specification, the Engineer shall have the right to require that any or all of the following measures shall be taken by, and at the cost of the Contractor:

The materials or proportions of the mixture shall be changed.

The periods of time for removal of formwork given in Clause ZB 4.3.9 shall be extended (provided that the extensions shall not exceed the periods given in ZB 4.3.9 by more than 28 days) until such time as cores, drilled from the portions of the structure containing the concrete which failed and tested in accordance with the methods described in the South African Standard Building Regulations, Chapter 5, show that the strength of the concrete has satisfied the strength requirements.

(If the results of the tests on cores taken in terms of (b) above indicate that, despite the additional periods of time allowed, the concrete does not satisfy the specified requirements, the Engineer will decide whether he requires full scale load tests to be carried out in terms of Regulation 5, Chapter 5, of the South African Standard Building Regulations.

If the load tests are in the opinion of the Engineer, impracticable or if a tested portion of the structure fails to pass the tests, the Contractor shall, on the instructions of the Engineer, replace or strengthen by approved means each portion that failed or that contains concrete that failed, as relevant.

2.1.4.9.4 GRADING ANALYSIS

If so ordered by the Engineer, a grading analysis shall be made for each 40 m' of fine aggregate to be used, and for each 75 m of the coarse aggregate to be used. The analysis shall be made by the method given in SABS 1083.

2.1.4.9.5 DETERMINATION OF CONSISTENCY

When the slump test is used to measure the consistency of the concrete mix, it shall be carried out by the method given in SABS878.

2.1.4.9.6 COSTS OF TESTS

The costs of all tests described in this section of the Specification shall be borne by the Contractor.

2.1.4.10 MEASUREMENT AND PAYMENT

2.1.4.10.1 CAST IN-SITU CONCRETE

For all grades of concrete, whether reinforced or unreinforced measurements shall be made on a cubic metre (m^3) basis, calculated from the net dimensions shown on the drawings or variations thereof instructed or authorised by the Engineer. In the case of foundations, or other portions of the structure where the depth is not fixed on the drawings, the concrete shall be measured as the product of the net horizontal area of the concrete as shown on the drawings and the height based upon the agreed levels or depths.

In the measurement of concrete no deduction will be made for chamfers of less than 50 mm in width, nosings, bolts, reinforcement and the like.

Concrete used for blinding layers shall be measured per square metre, the minimum thickness being stated.

The rates for concrete shall include for supplying and a storage of all materials, provision of labour and plant, forming construction joints (but not contraction and expansion joints shown on the drawings), galvanised wall ties where necessary, keyways, all incidental work, curing, testing of materials, provision of slump cones, etc.

2.1.4.10.2PRECAST CONCRETE

The supply of various types and sizes of precast concrete members or elements shall each be measured and paid for separately per number.

The tendered rate for each precast element shall include for the supply of all materials, including formwork and reinforcing, the complete manufacturing, transport and storage.

2.1.4.10.3JOINTS

Where contraction or expansion joints are scheduled in the Schedule of Quantities, they shall be measured as reflected in the Schedule, and rates tendered shall include for the supply of all materials and for all work and formwork involved in forming and sealing the joints.

2.1.4.10.4WATER STOPS

Water stops shall be measured and paid for per lineal metre for the various types and sizes.

The tendered rates shall include for materials and all labour necessary for fixing and jointing and the additional labour required in compacting around the water stops.

2.1.4.10.5CONCRETE SURFACE FINISHES

The rates tendered for floor slab concrete and blinding shall include for screeding of the surface to the required shape and level.

Where steel or wood trowelling is required, it shall be measured and paid per square metre (m^2).

All exposed faces of concrete shall be sound and solid, free from defects. The cost of all remedial work to the requirements of the Engineer is deemed to be included in the concrete rates inserted in the Schedule of Quantities.

No separate measurement will be made for the finishing of surfaces against shuttering other than the measurement made for shuttering as scheduled.

2.1.4.10.6SHUTTERING

All shuttering for producing rough and smooth surfaces shall be measured on the net area of concrete surface exposed after the removal of the forms.

Payment for shuttering shall be deemed to include full compensation for the supply, erection and subsequent removal, if possible, of all false work, staging and shuttering and rubbing down concrete after removal where smooth surfaces are required.

Where specified formwork described as to provided smooth finished concrete shall be provided with chamfers on all concrete arises, re-entrant corners and drip moulds. Shuttering for construction joints whether shown on the drawings or not, shall not be separately measured and shall be included in the tendered rates for measured work.

The cost of all remedial work that may be required to bring concrete work to proper line is to be borne by the Contractor.

No payment will be made for shuttering necessitated on account of over-excavation.

2.1.4.10.7FOUNDATION PAPER

Foundation paper shall be measured per square metre (m2) of the surface area of the concrete cast against it. Payment shall include for the supply of the material and fixing it into position.

2.1.4.10.8REINFORCEMENT

Steel reinforcement shall be measured and paid for per kilogram (kg) calculated from the actual length shown on the drawings, including hooks, bends, etc., and the nominal diameter of the bar. The unit of measurement for high tensile mesh reinforcement shall be the square metre of the reference mesh reinforcement in place and the quantity shall be calculated from the net area covered by the mesh excluding laps.

The rates entered into the Schedule shall include for all supply, bending, waste, fixing into position, spacers, and tying wire or other binding devices. Supporting steel shall be measured with reinforcing steel.

3. BRICKWORK AND CONCRETE BLOCKWORK

3.1 SCOPE

This section of the Specification covers all aspects of brickwork and concrete blockwork including building in of various items, reinforcing of brickwork and blockwork, etc., as well as the supply of all materials and labour.

3.2 MATERIALS

3.2.1 Standards

All materials used in the following standard specifications, the latest issues of which shall be held to apply:

SASS28 Metal ties for cavity walls

SABS227 Burnt clay masonry units

SABS471 Portland cement and rapid-hardening Portland cement SABS1215/1984 Concrete building blocks

SASS626 Portland blast-furnace cement

SASS831 Portland cement 15 and rapid hardening Portland cement15 BS1200 Building sands from natural sources Portland Cement Concrete Masonry Association The Masonry Manual

3.2.2 Masonry Units

3.2.2.1 General

Bricks shall be free from cracks, chips or other defects and:

At least one end of 20% of the bricks shall have the same general colour and texture as the faces.

Special care shall be exercised in loading, stacking and handling facebricks as no damaged bricks shall be used and bats may only be used where required to obtain bond.

General purpose stock bricks or common bricks shall have minimum average compressive strength of 7MPa unless otherwise specified. Where stock bricks are required for load bearing walls or foundations then compressive strength shall be a MPa.

Facing bricks shall be of the type, origin and colour as specified in the Schedule of Quantities or on the drawings and shall be selected for uniformity of dimension and colour.

Satisfactory proof of load bearing capacity of bricks offered shall be submitted before deliveries are made to the site.

For samples, 6 units of each type of brick shall be submitted to the Engineer for approval. All subsequent deliveries shall be to the standard of the approved samples.

All bricks which, in the opinion of the Engineer, do not comply, with the abovementioned requirements, shall be removed from the site forthwith at the Contractor's cost.

3.2.2.2 Burnt Clay Brick

Burnt clay bricks shall comply with SABS 227 and:

Engineering bricks shall be of high compressive strength and durability, 49 MPa minimum average strength and selected for their uniformity of dimension and shape. Bricks shall be clay, and pressed or wire cut. Water absorption after a 24 hour test shall not exceed 12% by mass.

Facing bricks shall have a minimum average compressive strength of 28 MPa. Bricks shall be clay, and pressed to wire cut. Water absorption after a 24 hour test shall not excess 12% by mass. Bricks shall have sharp clean and well defined arises.

General purpose stock bricks or common bricks suitable for general building work shall be clay, pressed or wire cut, even in size, smooth in texture and with sharp well defined arises. Water absorption after a 24 hour test shall not exceed 14% by mass.

3.2.2.3 Concrete or Cement Based Bricks

Cement based bricks shall comply with SABS 987 and attention is specifically drawn to the following:

After strength curing bricks must be left to dry for four to six weeks to minimise subsequent shrinkage.

Bricks must NOT be wetted before laying. Mortars must have a high water retention.

3.2.2.4 Precast Concrete Building Blocks

Precast concrete building blocks shall comply with SABS 1215-1984 and publication "The Masonry Manual" (Concrete Masonry Association) in all respects. Samples of each type of block to be used shall be submitted to the Engineer for approval and all subsequent deliveries shall be to the standard of the approved samples.

All building blocks which, in the opinion of the Engineer, do not comply with the abovementioned requirements shall be removed from the site forthwith at the Contractor's cost.

3.2.2.5 Cement

Cement used in masonry shall comply with the requirements of SABS 471, SABS 626 and SABS 831.

3.2.2.6 Fine Aggregate (Sand)

Fine aggregates used in mortar shall be naturally occurring sand or consisting of crushed rock or gravel, or a combination thereof with naturally occurring sand being hard, clean and free from dust, shale, clay, loam roots and other impurities.

Fine mortar aggregates shall comply in all respects with SS 200 and be well graded from

mm down in accordance with Table 10 therein or Table 11 where specified for reinforced brickwork.

3.2.2.7 Water

Water shall be clean and free from injurious amounts of acids, alkalis, sugar and other organic substances. Water suitable for drinking purposes shall be acceptable. If so required by the Engineer, the suitability of water shall be proved by tests carried out by an approved laboratory.

3.2.2.8 Mortar

Mortar shall, unless otherwise specified, be class A mortar and shall consist of 1 part Portland cement, one part hydrated lime and to 6 parts of sand by volume for normal brickwork. Mortar for foundations, lintols and for all load bearing walls higher than 3000 mm shall be class S mortar and shall consist of 1 part Portland cement, 1/4 part hydrated lime and four parts sand. The ingredients shall be measured in proper gauge boxes on a timber of steel mixing platform with water added and thoroughly mixed in to obtain a uniform consistency throughout. The mortar shall be mixed in with fresh mortar. Alternatively, mixing may be by means of an approved mechanical batch mixer.

In the case of a cement-milled slag mortar, the sand and slag shall be mixed first and then the cement added.

Cement mortar shall be used within two hours of the first contact of the cement with water. No mortar which is older than two hours or has begun to set shall be used.

3.2.2.9 Wall Ties

Metal wall ties in brickwork and blockwork shall be, galvanised crimped steel, single wire type, 4 mm diameter minimum, complying in all respects with SASS 28.

Ties to cavity walls shall be PWD butterfly type (not modified type).

Stainless steel twist type wall ties shall be used for walls subject to corrosion attach or as directed.

3.2.2.10 Reinforcement

Wall reinforcement shall consist of two 3,15 mm diameter longitudinal wires at appropriate centres for the thickness of the wall and with 2,80 mm diameter cross wires welded to the longitudinal wires at 300mm centres. All wire used shall be of high tensile steel-

3.2.2.11 Roof Ties

Roof ties shall be 1,6 mm galvanised hoop iron, 32 mm wide, ends bent at right angles (50 mm) for building into brick joints and length to suit for 8 building courses into brickwork or casting into concrete slabs or beams and left projecting sufficiently to wrap around and spike to rafters of roof trusses.

3.2.2.12 Concrete to Brickwork Ties

End on junctions of brick walling to concrete are to be tied to the concrete by means of 1,,6 x 32 x 500 mm galvanised hoop iron ties.

Brick linings to concrete are to be tied with 4 mm diameter crimped galvanised wire ties to SABS 28.

3.2.2.13 Quarry Tiles

Quarry tiles for cills shall be "Coronation" brand or equal approved, hard burnt of colour to match facing bricks, even in shape and size, free from chips, cracks, twists or blemishes and uniform in colour. Sizes shall be as stated in the schedule and on the drawings.

3.2.2.14 Asbestos-cement Cills

Asbestos-cement cills, shall, unless otherwise specified be 20 mm pressed asbestos- cement in natural colour and of approved manufactured.

3.2.2.15 Airbricks

Airbricks shall be terra-cotta with copper vermin-proofing gauze for coastal conditions. (colour to match facing brick where relevant) and cast plaster for internal use where walls are to be plastered, all of approved manufacture.

3.2.2.16 Storage of Materials

Cement and aggregates shall be stored in such a manner as to prevent deterioration or contamination by foreign matter, damp and chemicals spilled on the ground or which may settle out of the atmosphere.

Perishable materials likely to be damaged by exposure shall be stored under cover.

3.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

3.4 CONSTRUCTION

3.4.1 Brickwork Generally

All brickwork shall be laid in stretcher bond, plumb and true to line. Mortar beds shall be 10 mm thickness, unless otherwise described, and are not to exceed 12 mm in thickness and no four successive joints shall rise more than 40 mm (for 10 mm joints). Clay bricks are to be well wetted (saturated in hot weather) with water before being laid and the course of bricks laid last shall be well wetted before fresh bricks are bedded upon it. Concrete bricks must NOT be wetted before laying. Bricks shall be well buttered and laid on a full bed of mortar and joints shall be flushed up. Bricks in foundation walling are to be extra hard. Beam filling is to be built to eaves 106 mm thick and the space between beam filling and roof covering shall be filled with a stiff mixture of 1 to 3 cement mortar tightly pressed in. The brickwork shall be carried up in a uniform manner, no one section being raised more than 1 200 mm above another section at one time and no brickwork is to be carried marathon 4 courses above immediately adjoining or intersecting brickwork. Block bonding or toothed and keyed construction will only be allowed in alterations to existing work.

Internal walls shall be carried up two courses above ceiling level and all gable walls shall be carried up against the underside of roofing, cut to rake as required and flushed up with 1 to 3 cement mortar. The joints of all walls to be plastered or tiled shall be raked 12 mm to form key for plaster.

One-brick walls (230 mm) built stretcher bond in two skins shall be tied together with galvanised wall ties staggered not more than 1 m apart horizontally and every fourth course vertically with extra ties at reveals and openings etc. as may be necessary. Brick linings to concrete walls shall similarly be tied together, while galvanised hoop iron ties cast into concrete columns, shall be built into the joints of

butting brick walls as specified. Where specifically required e.g. coastal areas, the outer face of the inner skin of all external one-brick walls above damp course level shall be waterproofed before the outer skin is built up. The face to be treated shall be bagged over until all crevices are filled. When thoroughly dry the face shall be twice coated with an approved liquid bituminous compound and worked around wire ties to produce an unbroken waterproof coating.

Where called for on; the drawings, wall and concrete ceiling surfaces shall be bag washed with a wet sack dipped in liquid cement grout whilst the mortar in the brickwork joints is still soft until all joints and crevices are eventually tilled. Projections of concrete shall be rubbed off and any defects shall be made good in cement mortar.

3.4.2 Cavity Walls

Cavity walls unless otherwise described, shall be built with two 106 mm thicknesses of brickwork in stretcher bond with 50 mm, cavity between and tied together with galvanised wall ties spaced at not more than 1 m centres apart at every third course of brickwork and staggered. The cavities shall be carried up from top of foundation concrete level to wall plate level. Cavities shall be kept free from all rubbish, mortar droppings. Projecting mortar and suitable bricks shall be left out temporarily to affect cleaning. The cavity shall be filled up solid with concrete between foundation and floor dampproof course level and for six courses wall plate level.

At door, window and other openings. the cavities shall be stopped back 106 mm from heads, jambs and sills of openings. Weep holes shall be formed at every fourth stretcher at the base of the cavity.

3.4.3 Reinforced Brickwork

Brickwork over door and window openings shall be reinforced with welded wall reinforcement placed in each course of brickwork over openings for a minimum of 4 courses or as shown on the drawings. Reinforced brickwork shall continue at least one and a half bricks on either side of the opening. Where two or more openings are less than 675 mm apart, the reinforced brick lintels shall be continuous over all such openings and their dividing piers, plus 1½, brick bearing at both extreme ends.

Brick lintols in cavity walls which are exposed to the weather shall have a continuous damp- proof course built into the outer skin of the wall immediately above the lintol to cove the top of the lintol, raked up one course and carried through the innerskin.

Where called for on the drawings, brickwork shall be reinforced with wall reinforcement laid in every fourth course of all brick walling or as directed by the Engineer. The reinforcement shall be built in truly central to the wall and all longitudinal laps shall not be less than 450 mm. Reinforcement in half-brick walls shall be built 106 mm into main crosswalls.

3.4.4 Face Brickwork

All facings shall be kept clean during the progress of the work and face-brick surfaces with mortar spattering will not be accepted. Unless otherwise specified, the horizontal and vertical joints shall be pointed and finished with a round key joint and both rubbed smooth as the building work proceeds.

The various colours of the face bricks shall be selected and mixed at random to prevent portions of the face work showing a preponderance of one colour. Where sufficient storage is available on site the full quantity of face bricks required for the works (or such quantity as to keep supply well advanced of construction) shall be delivered to site.

3.4.5 Fairface Brickwork

Where called for on the drawings and in the Schedule of Quantities, internal walls shall be of smooth stock-bricks, built fair and kept clean during construction and jointed as in Clause ZC4.4

3.4.6 Concrete Blockwork Generally

Concrete blockwork construction shall be in accordance with the Portland Cement Institute publication "Concrete Building Construction".

Blocks which shall not be wetted before laying shall be laid in stretcher bond, plumb and true to line. Joints shall not be more than 10 mm thick. The blockwork shall be carried up in a uniform manner with no one section being raised more than one metre above another section at one time unless otherwise shown on the drawings. Blockwork shall be built hard up against door frames, windows, etc., and shall be built solid with cement mortar between foundation and floor dampproof course level, around door and window frames and under wall plate level. All blockwork shall be kept clean during the progress of the work and the cores kept clear of falling surplus mortar. Intersecting walls, except corners, may be built flush against each other with a 10 mm joint between and tied together with brick reinforcement 500 mm long at 400 mm vertical distance apart.

All walls not to be plastered shall be built fair with smooth blocks, the joints shall be pointed and finished with a round key, and the work shall be kept clean during construction. Joints of all walls to be plastered shall be raked out to form a key.

Wall please carrying roof trusses shall be bolted or tied to solid built eaves blockwork while lintol blocks, reinforced with steel bars and filled with concrete, shall be used over doorways, windows, etc., all according to the manufacturer's instructions.

3.4.7 Reinforced Blockwork

Were called for on the drawings blockwork shall be reinforced with wall reinforcement laid in every course of all block walling or as directed by the Engineer.

3.4.8 Precast Prestressed Concrete Lintols

Approved precast prestressed concrete lintols of suitable size of the thickness of the wall and the width of the opening shall be used over openings in plastered and bagged walls. Wherever possible the minimum bearing for precast prestressed lintols, at their ends and over intermediate supports, shall be:

for openings not exceeding 600 mm -1Yz brick (115mm)
for openings exceeding 600mm -1 brick (230mm)

Where this requirement necessitates a total lintel length exceeding 6,6 m, a joint may be introduced centrally over an intermediate pier in a position to be approved by the Engineer. Such joints shall be stiffened by the introduction of welded wall reinforcement as specified, in ZC 4.3, and extending a minimum of 300 mm on either side of the joint,
i.e. 600 mm minimum total length.

3.4.9 Concrete to Brick Ties

At end on junctions of brick walls with concrete columns or walls brickwork is to have galvanised hoop iron ties built into the joints of each ½ brick skin at maximum 8 course height intervals alternately to each skin or at 4 course height intervals if single skin only. Ties are to be cast into concrete at course heights by tacking L-shaped ties to inside face of shutters and bending down ends for building in after shutters stripped or shot fixing to concrete with approved nails and strength of shot to provide adequate fixing.

Galvanised crimped wire ties for fixing of brick linings to concrete are to be cast minimum 75 mm deep into concrete at brick course heights (four per square metre staggered), bent down after shutters stripped and built into brickwork.

3.4.10 Roof Ties

Build roof ties minimum 8 course into brickwork or bend under reinforcement and cast into concrete beams or slab at truss positions, bend around upper truss members and spike and clench to timber with 63 mm wire nails. (See notes re submission of drawings for fabrication designed roof trusses under Carpenter specification - in order to obtain timeous information on tie position setting out).

3.4.11 Airbricks

Where airbricks are shown on the drawings, neat openings shall be formed in the brickwork or. blockwork for the building in of vermin-proof terra-cotta airbricks externally. Cast plaster airbricks shall be used internally where walls are to be plastered.

3.4.12 Tile Cills

Quarry tiles shall be soaked in water for 24 hours before being laid. Cills shall be laid and pointed in class B (1-1/4-4) cement mortar, set level internally and sloping externally and projecting not more than 25 mm beyond face of wall.

Quarry tiles shall be thoroughly cleaned after laying.

Tiles shall be centered and cut or spaced so that not less than a three quarter wide tile occurs in any cill.

3.4.13 Asbestos-Cement Cills

These cills shall be neatly cut and fitted between reveals and set to project slightly and bedded and pointed in class B (1-1/4-4) cement mortar. All cills to be fitted with standard minimum 3 x 15 x 100 mm mild steel 4 times bent anchoring brackets self-tap screwed to underside at maximum 400 mm centres (maximum 75 mm from ends) and external cills shall be slightly sloping.

3.4.14 Sundries

Rough and fair cutting shall be performed as required and the brickwork or blockwork fitted around structural steelwork. Face brickwork shall be carefully cut and fitted when next to other finishings.

Chases shall be lett or formed in brickwork for edges of concrete floors, roofs, staircases, etc. Vertical chases shall be provided in brickwork and blockwork wherever required for pipes, conduits, switch boxes, distribution boards,etc.

Over sailing courses, corbels, etc., shall be built where required.

Ends of cills, thresholds, step joints, etc., shall be built in, cut or pinned in cement mortar where required.

Steel windows to be built into walls shall be set plumb and true with the cill bar resting on wedges to ensure that it is perfectly level. All lugs shall be bolted up tights and built in solid as walling proceeds, the channel frame of the window being caulked; tight with class B (1-1/4-4) cement mortar, pointed up neatly all round and madewatertight.

Pressed steel door frames shall be securely strutted when placed in position for buildlnq on to prevent distortion of any kind during building in. The frames shall be built solid into the walls and grouted solid at back with 12:3 cement mortar as the work proceeds and properly pointed all round.

Timber door frames and windows to be built into walls shall be primed before building in and set plumb and true. The underside of each vertical to the door frames shall be provided with a 12 mm diameter steel peg projecting 75 mm from the bottom of the frame and these pegs shall be securely grouted into the floor threshold. 2 mm thick hoop iron cramps 40 mm wide, screwed to frames shall be built 450 mm .into walls with ends turned up, four cramps to each jamb. At flush junctions of walls and frames a V-joint shall, be ruled between frame and wall rendering. The junctions between timber frames or windows and face brickwork or unrendered concrete on external faces shall be sealed by pointing around the timber frames with an approved polysulphide based waterproofing compound finished off in a neat and workman like manner.

All necessary openings for ends of timber, gratings, cramps, holdfasts, dowels, wood plugs and slips for fixing joiner's work, hoop iron ties, etc. , shall be formed built in with 1:3 cement mortar, and made good with properly performed rough and fair cutting.

Hoop iron roof ties shall generally be built 750mm into walls.

Brickwork and blockwork shall be cut away and made good atter all trades.

3.5 TOLERANCES

Tolerances for clay brick dimensions, strength, warpage and efflorescence shall be as SASS 227.

Tolerances for concrete block dimensions, strength, warpage and drying shrinkage shall be as SASS 527.

Permissible deviations in the final finished surfaces to the degree of accuracy required will be applied to linear dimensions, position, verticality, level, squareness and bow.

The degree of accuracy may be one of the following:

Degree of accuracy III for use where a high degree of accuracy is unnecessary e.g. mass storage warehouse walls and floors.
Degree of accuracy II for what is commonly called "goodwork".
Degree of accuracy I where the use of special, as opposed to normal, methods and/or materials is required.

Over a distance of 2400 mm as in the table hereunder.

Abrupt changes in a continuous surface - over a short distance maximum say 300 mm - shall be 40% of that specified under 5.3.3

3.5.1 Table of Permissible Deviations

Item	Finish	Permissible deviation for degree of accuracy			Corobrick Brick Classification Guide
		III (mm)	II (mm)	I (mm)	
1	Stock brickwork				
	- against earth	20	15	10	NFX
	- to receive plaster	17	10	7	NFP
	- to be bagged	13	8	5	NFP
	- fairface	8	5	3	FBS
2	Face brickwork with bricks				

	- generally uniforn in shape and size	8	5	3	FBS
	- high degree of uniformity in shape and size	5	3	2	FNX
	Non-uniform in shape	13	8	5	FBA
3	Out of alignment with				
	adjoining finishes on	4	3	15	
	projecting items	3.5	2.5	1	
	(windows and door frames)	5	3.5	2	
4	Out of verticality of perps				

Item	Finish	Permissible deviation for degree of accuracy			Corobrick Brick Classification Guide
		III (mm)	II (mm)	I (mm)	
	(dependent on bond)	40	15	5	
5	Out of alignment	2.5	2	1.5	FBS
	horizontally top edge to	2	1.5	1	FBX
	top edge adjoining bricks	3	2.5	2	FBA
6	Out of trueness vertically	2.5	2	1.5	FBS
	(top edge to lower edge	2	1.5	1	FBX
	Of next course)	3	2.5	2	FBA
7	Squareness of rooms overall - measured on the				
	Diagonals *	20	10	5	
8	Out of square or true of a corner or angle measured				
	300mm from the angle *	7	4	2	

*

A similar degree of accuracy will be required to irregular shaped rooms. The governing factor shall be the general appearance and it may be necessary or acceptable to depart from the above guidelines if required.

3.6 TESTING

3.6.1 Compressive Strength

Determination of the minimum average compressive strength of clay bricks and concrete blocks shall be in accordance with SASS 227 and SASS 527 respectively and at frequencies required by the Engineer.

3.6.2 Costs of Tests

The costs of tests described above shall be borne by the Contractor who shall be deemed to have included these costs in the scheduled rates for brickwork or blockwork.

3.7 MEASUREMENT AND PAYMENT

The unit of measurement for all brickwork and blockwork shall be the square metre (m') of the specified type and thickness laid. The measurement of the work will be taken net, with door and window openings deducted, but will include for lintels, airbricks, etc.

The rates tendered for ordinary brickwork or blockwork shall be inclusive of supply of bricks or blocks, testing, all plumbing of corners and faces, linings, levelling, ruling of joints, forming reveals and openings, cutting where necessary but not specially scheduled, supply and building in wall plugs, wall ties, etc., hoisting to various levels, soaking all bricks in water before laying, any selecting of face-bricks on site to maintain an even texture when laid and for cleaning down with spirits of salts all facework on completion. Face brickwork and fairface brickwork or blockwork will be paid for extra over and above ordinary brickwork or blockwork.

4. PLASTERING, PAVING AND TILING

4.1 SCOPE

This section of the Specification covers all aspects of plastering, paving and tiling as well as the supply of all materials and labour.

4.2 MATERIALS

4.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS22	:	Glazed ceramic wall tiles and fittings.
SABS471	:	Portland cement and rapid-hardening Portland cement.
SABS523	:	Limes for use in building.
SABS581	:	Semi-flexible vinyl floor tiles.
SABS786	:	Flexible vinyl flooring.
SABS070	:	The laying of thermoplastic and similar types of flooring.
SABS1083	:	Aggregates from natural sources.
SABS1199	:	Building sands from natural sources.

4.2.2 Cement

Cement used for plastering and paving shall comply with the requirements of SABS 471.

4.2.3 Fine Aggregate (Sand)

Aggregate used in plaster and screed shall be naturally occurring sand or consisting of crushed rock or gravel, or a combination thereof with naturally occurring sand being hard, clean and free from dust, shale, clay, loam, roots and other impurities and shall comply in all respects with BS 1199 for plaster and SABS 1083 for screed.

Fine aggregate for granolithic shall consist of evenly graded particles (granular not flaky), of granite, whinestone or quartzitic stone, all of which will pass a 6 mm test sieve, approximately 40 percent by weight of which will pass a 3 mm sieve, and none of which will pass a 0,15 mm sieve. It is to be free from clay, animal, vegetable or other organic matter and is to comply with such tests as may be required by the Engineer.

Samples of aggregate, proposed to be used, must on no account be used until passed by the Engineer.

4.2.4 Water

Water shall be clean and free from injurious amounts of acids, alkalis, sugar and other organic substances. Water suitable for drinking purposes shall be acceptable. [f so required by the Engineer, the suitability of water shall be proved by tests carried out by an approved laboratory.

4.2.5 Glazed Ceramic Tiles

Glazed ceramic wall tiles shall be 150 x 150 mm first grade tiles including arris rounded capping and angle tiles of approved manufacture, free from chips, cracks, twists, warping, discoloration or other defects, either white or of specified colour, equal to the sample to be submitted and complying with SABS 22. The tiles shall be delivered to the site in unopened containers as packed by the manufacturer and each tile shall have the following information impressed on the back: The name, trade name or registered trade mark of the manufacturer and the date of manufacture or other suitable batch identification.

4.2.6 Quarry Tiles

Quarry tiles for floors shall be "Coronation" brand or equal approved hard burnt dark brown, even in shape and size, free from chips, cracks, twists or blemishes and uniform in colour.

4.2.7 Resilient Floor Coverings

All material shall be delivered to site in unopened containers and all from the same lot for colour consistency. Each container shall be marked with the manufacturer's name, trade name or both, the

name of the material, the thickness and colour, the quantity in the container and the identification number of the batch or run.

Vinyl asbestos floor tiles shall be of approved manufacture, 250 x 250 x 2 mm thick and be grease, oil and alkali resistant.

Vinyl floor sheeting shall be of approved manufacture 900 mm wide x 2 mm thick with welded joints and be grease, oil and alkali resistant.

Vinyl skirting shall be approved and from the same manufacturer as the tiles and sheeting. It shall be top set cover skirting, 1 DO mm high, with performed internal and external corner pieces as required.

Bitumen impregnated felt floor sheeting with smooth surface shall be Mastipave or equal approved, 900 mm wide x 2 mm thick fixed to the floor with adhesive.

Adhesives shall be as recommended by the manufacturer.

Colours and patterns shall be selected from the manufacturers standard colour samples by the Engineer or be as shown on the drawings.

4.2.8 Paving, Slabs and Kerbing

Paving slabs shall be 450 X 450 X 50 mm thick precast non-slip surface concrete slabs and kerbing units shall be 915 X 300 X 75 mm thick precast kerbing, all to the approval of the Engineer.

4.2.9 Storage of Materials

Cement and aggregates shall be stored in such a manner as to prevent deterioration or contamination by foreign matter, damp and chemicals spilled on the ground or which may settle out of the atmosphere. Perishable materials likely to be damaged by exposure shall be stored undercover.

4.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with the specification in a safe and efficient manner.

4.4 CONSTRUCTION

4.4.1 Plastering

Cement plaster shall, unless otherwise specified, consist of 1 part Portland cement to 5 parts of sand by volume. The ingredients shall be measured in proper gauge boxes on a steel or timber mixing platform with water added and thoroughly mixed in to obtain a uniform consistency throughout. Cement plastering mixes shall be used within two hours of the first contact of the cement with water. All plaster remaining after this period shall be discarded and not retempered.

Between the time of the construction of the brick, concrete or other base and the commencement of the plastering, an adequate interval of time must elapse to ensure that the sub-structure has properly dried out. All surfaces are to be thoroughly brushed down to remove dust and loose particles and cleaned of grease and soot. Brick walls which are to be plastered are to be prepared by having the joints raked out to form a key. Concrete surfaces which are to be plastered are to be prepared by roughening (hacking if necessary), or having a slurry composed of one part by volume of cement to two-and-a-half parts by volume, of coarse sand vigorously thrown on by means of a trowel or other suitable device to form the thinnest possible layer and left an adequate period, but not less than two days, until hard and dry before plaster is applied. Both brickwork and concrete are to be properly wetted with water to adjust the suction before plaster is applied.

Where skin coat type finishing plasters (e.g. "Rhinolite") are to be applied to surfaces care is to be taken to ensure that non-ferrous metal surfaces are to be suitably treated or priced prior to the application of the finishing type plaster.

All one-coat cement plastering shall be executed in a 1:5 cement mortar and wood floated smooth unless steel towelling is particularly specified. All plaster undercoats to receive glazed tiling shall be scored and roughened to provide a key for the tiles. Where fine roughcast finish is called for, this shall be applied to one coat cement plaster with a proper "Tyrolean" spattering device in such a way that even thickness of finish is attained throughout the surface without blank spots and patches. Where two-coat putty or other similar type finishing plaster finish is specified, this shall comprise a 1:5 cement plaster undercoat finished with a skim coat of the finishing plaster properly applied in accordance with the recommendations of the specific manufacturer to obtain a smooth steel towelled finish.

The surfaces of all smooth plastering are to be even and true and free from breaks or tool marks, and in textured plaster, to be regular. All plaster is to be floated smooth unless otherwise particularly specified. All external angles are to be clean and sharp or slightly rounded as directed. All damaged or defective plasterwork is to be made good and the whole left in perfect condition. Should any of the plasterwork show signs of efflorescence, blistering, cracking, crazing, flaking, grinning, peeling, pitting, popping or

blowing, or of any other defects during the period of maintenance, such defective work is to be made good and if necessary, the wall in which it occurs, must be entirely stripped and replastered and the whole cost together with the cost of repainting, etc., necessary, shall be borne by the Contractor.

Where required, plaster shall be finished flush with the faces of all switch and plug boxes, the interiors of which shall be kept free from plaster. Plaster surfaces shall be plumb with jambs and reveals formed square. A V-joint shall be made where a junction between concrete and brickwork occurs and at flush junctions of walls and windows and doorframes. V-joints shall be made with an adjustable jointer, the centre blade of which shall be hard on the brickwork to ensure that the plaster is cut through.

No plastering work will be permitted until the electric conduit and boxes and all plumbing pipes chased in walls are completed and the window frames have been packed with mortar.

Conduits, water pipes, etc. are to be firmly fixed into position in chases minimum 6 mm below rough adjoining surfaces and firmly grouted it into position and keyed to take finish.

4.4.2 Floor Screeding

Floor screeds shall be composed of 1:3 cement mortar, and shall be measured off and mixed to the method specified for plaster mixes. Preparatory to the application of the screed, the concrete sub-floor shall be well soaked with water and coated with the thinnest practicable layer of (a) in the case of a concrete surface which is rough enough to ensure a good bond -a grout of neat cement well brushed on, and (b) in the case of a concrete surface which is not rough enough to ensure a good bond -with a slurry composed of one part by volume of cement to two-and-a-half parts by volume of coarse sand vigorously thrown on by means of a trowel or other suitable device. The screed shall be laid before the grout or slurry has set.

The screed shall be well compacted and rammed-in with a wooden punner and finished off level with a wood float or steel trowel as particularly specified, and then left to mature, being protected from injury during this period.

All screeds to receive special floorings shall be laid, surfaced and cleaned off or washed to the satisfaction of the specialist executing such flooring.

4.4.3 Granolithic Surfacing

Granolithic is to be in two coats, the undercoat being of a thickness of 9 mm less than the finished thickness, composed of one part by volume of cement to three parts by volume of aggregate, the finishing coat being 9 mm thick, composed of one part by volume of cement to two parts by volume of aggregate.

The water-cement ratio is to be kept as low as possible (not to exceed 0,45) compatible with workability. The finishing coat is to be wood floated and steel trowelled to a smooth finish. Excessive towelling shall be avoided and dusting on of dry cement shall not be allowed.

The granolithic shall be floated on to ordinary concrete within 12 hours of latter being laid, otherwise the concrete surfaces shall be thoroughly hacked, cleaned, watered and afterwards treated with cement slurry which shall be allowed to set, or treated with an approved bonding agent, as may be directed, before the granolithic paving is laid.

The surface of all granolithic paving shall be kept damp for a period of at least 7 days after laying, by thickly covering with wet sand or sawdust, hessian or polythene membrane kept moist by frequent sprinkling with water.

The granolithic paving as described shall be not less than 20 mm thick, finished to fall as shown on drawings and the applied area shall not exceed 9,0 m for anyone placing. Thresholds shall be finished with granolithic 25 mm thick, treads 25 mm thick, and risers 20 mm thick, including rounded nosings and readings. Panels with neat straight surface v- joints and suitable material to break contact between panels formed against each other, shall be laid alternately and staggered and joints to panels shall coincide with any joints in the concrete sub-floor.

Excessive trowelling shall be avoided and dusting on of dry cement shall not be allowed. Any excess of bleed water is to be removed.

For monolithic granolithic where shown on the drawings, the mixture specified above shall be sprinkled dry whilst the concrete floor slab is still wet and soft, at the rate of 10 kg of mixture per m. This mixture shall be tamped in with a wood float and trowelled twice with a steel trowel to a smooth fine finish, and the surface shall be coated after the floor is dry, with a single application of 10% solution of silicate of soda.

Light duty non-slip surfaces to fioors and stair treads for pedestrian traffic shall where called for, be formed using carborundum, "Alundum" or approved equal, with a 1 to 7 IM1 grading, spread at the rate of 1 kg per m of paving. The surfacing shall be tamped in with a wood float and trowelled to a smooth finish before the granolithic has set, but maintaining the non- slip surface.

Heavy duty non-slip granolithic flooring shall where called for, be formed with "Alundum" topping , or approved equal, placed on the green concrete, mixed in the proportions tabulated below, or as recommended by the manufacturers. The coarse "Alundum" shall be well soaked in water and mixed with the granite chip pings. The heavy duty granolithic shall be finished off with fine "Alundum", with grading 1 to 7 mm, as specified
above for light duty non-slip surfaces.

Material Cement	By Mass	By Volume
Cement	50 kg	1,0m³

Granite sand (grading 0,3 to 3mm)	25 kg	0.5m³
Granite chippings (grading 3 to 10mm)	90 kg	1.6m³
Coarse "Aludum" (grading 7 to 14 mm)	11kg	0.1m³

Coloured granolithic paving shall be a two-coat application laid in one operation comprising an un tinted first coat, plus a tinted finishing coat of not less than 5 mm thickness applied immediately to the first coat, giving a combined thickness as specified. The colour pigment complying with BS 1014, shall be thoroughly mixed with the cement in such proportion as will give the finished surface and colour specified. The tinted finishing coat shall be composed of two parts by volume of aggregate to one part of cement with pigment, which shall in no case exceed 10% of the mass of the cement. The granolithic shall be thoroughly compacted and finished with a steel float. Dusting on of colouring pigment shall not be permitted under any circumstances.

Edges next to walls and partitions shall be finished with 20 mm thick projecting skirting 75 mm high, with rounded or splayed top edges and small cove at the junction with the flooring unless otherwise instructed by the Engineer.

Any granolithic paving laid which does not comply with this specification shall be taken up by the Contractor and re-laid at his own expense.

Floors of showers and changing rooms shall be formed with light duty non-slip surfaces and shall be grooved for drainage as shown on the drawings.

4.4.4 Tiling

Wall tiles shall be set 3 mm beyond plaster, with straight continuous joints in both directions and set on and including a bed of 1:4 cement mortar and fixed in accordance with SABS 0107. Tiling shall be returned into reveals of openings and on to window sills, and shall be butted at internal angles and external angles shall have ground splayed edges to form mitred external angle, unless otherwise specified.

Where quarry or other ceramic tiles are specified for floors, these shall be bedded in cement mortar laid on the floor screed with continuous joints not exceeding 6 mm, unless otherwise specified.

Two mixes are to be used:

Mix A - 2 parts course river sand, 2 parts pitor building sand to 1 part cement with sufficient moisture added so that when the mixture is compressed by hand it clings together in a ball, but when the ball is punctured by the finger then the mixture with separate or collapse back to its loose state.

Mix B-1: part plaster sand, 1: part pit sand to 1: part cement mixed to a creamy consistency (where very dense fined day tiles are to be used on floors then the measures of sand shall be reduced to 1 instead of 1: as above).

Spread and lay base screed using mix A tamping firmly and screeding to lines, levels and falls as required in the finished floor (minimum 15 mm thick).

Spread mix B as a bedding screed to a minimum thickness of 10 mm and bed tiles directly on some.
Joints to be filled with mix B or as otherwise specified approximately 24 hours after floor laid and pinted with average 1 mm deep polished square recersed joints or as otherwise specified.

Prices for all floor and wall tiling are to include for setting and cutting such that equal margins will be used against vertical edges or ends and whole tiles along cappings or top edges, except that where less than 1/4 tiles would be used then allowance shall be made for additional cutting of adjoining tiles to increase. To minimum 3/8tiles.

Resilient floor coverings shall be laid in accordance with SABS 070 by ski lied workmen. Before laying the covering, the flooring specialist is to approve and accept the sub floor surfaces which shall be perfectly dry, smooth, level, clean and in a proper condition. The adhesive used shall be as supplied or recommended by the manufacturer. Top set cove skirtings shall be installed tight against the backing with the space completely filled, corner fittings shall line up and be flush with adjoining surfaces. When laying is completed, all areas shall be thoroughly cleaned and waxed in accordance with the manufacturer's recommendations.

4.4.5 Paving

Paving slabs shall be laid on a 50 m layer of fine sand spread on compacted ground surfaces and shall be laid in neat lines, level or to falls. All joints shall be straight and continuous not exceeding 9 mm and solidly pointed with a 1:5 cement mortar and ruled. The surface of the paved area shall be even and

regular and the block shall not project more than 3 m above the edge of any adjacent block at the joint. A bitumastic joint shall be placed every 5 metres of length of paving for expansion purposes.

Precast kerbing shall be used at edges of paving where specified and laid true to line and levels or falls. Joints shall be pointed in 1:5 cement mortar and rates for laying shall include for bedding the kerbs at each joint in a bed of 1:3:6 concrete to facilitate accurate laying. The kerbs shall generally be firmly bedded in the compacted earth on which they are laid

4.5 TOLERANCES

Sand for plaster shall generally have a fineness modulus between the limits of 1,1 and 2,1.

Plastering on vertical surfaces shall not generally be less than 9 mm nor more than 12 mm in thickness exclusive of keys, unless otherwise described. Plastering on concrete soffits shall not exceed 9 mm in thickness.

Permissible deviations in the final finished surfaces to the degree of accuracy required will be applied to linear dimensions, position, verticality, level, squareness and bow.

The degree of accuracy may be one of the following:
Degree of accuracy III for use where a high degree of accuracy is unnecessary e.g. mass storage warehouse walls and floors.
Degree of accuracy II for what is commonly called "goodwork".
Degree of accuracy I where the use of special, as opposed to normal, methods and/or materials is required.

Any deviation from flatness or plumpness or trueness of plane surfaces will be measured as the maximum deviation of the surface from a straight line joining two points on the surface in two separate measurements:

Over a distance of 2400 mm as in the table hereunder.

Abrupt changes in a continuous surface over a short distance maximum say 300 mm shall be 40% of that specified under 5.6.

4.5.1 Table of Permissible Deviations

Item	Finish	Permissible deviation for degree of accuracy		
		III (mm)	II (mm)	I (mm)
1	Sand/cement plaster			
	- Course rough texture	20	15	10
	- Fine rough texture	17	10	7
	- Wood float	13	8	5
	- Steel trowel			
	- matt paint finish	10	6	4
	- gloss paint finish	5	3	-
2	Gypsum or similar finishing plaster			
	- Steel trowel			
	- matt paint finish	-	4	2.5
	- gloss paint finish	-	2.5	1.5
3	Wall tiling			
	Deviation from pre-determined or average levels in adjoining rooms	5	3	2
4	Total plaster surface out of level or true plane of falls	15	8	3
5	Total screed surface out of level or true plane of falls	15	10	51
6	Sand/cement screed steel trowel			
	- for vinyl type finish	8	5	5
	- for carpet finish	15	8	3
7	Granolithic			
	- wood float	15	8	5
	- steel float	8	5	3
8	Out of square of corner, a reveal or element (such as a column) 300mm from corner	8	5	3
9	Out of alignment with maximum 20mm projecting prefixed items (such as windows and door frames)	4	2.5	1

Item	Finish	Permissible deviation for degree of accuracy		
		III (mm)	II (mm)	I (mm)
	or exposed corners or edges *			

*These deviations diversions could increase to double the stated dimensions at 150 mm projection proportional to the width of the projection.

NOTE: The governing factor out of square or true of a corner or angle measured 300 mm from the angle required.

4.6 TESTING

As the Contractor is fully responsible for ensuring that the quality of all work produced, both in respect of materials used and of workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the Specifications.

4.7 MEASUREMENT AND PAYMENT

The unit of measurement for all plastering, granolithic, floor screeds, wall tiling, paving slabs, floor tiling, etc., shall be the square metre (m²) of the specified type and thickness laid.

Rates for plastering, floor screeds and granolithic shall include for supply, preparation of surfaces, mixing, placing, levelling, colouring, finishing, jointing, rounding of angles and edges, forming of drips on lintels, curing, etc. No extra will be paid if thicker applications than those thickness specified are required due to the unevenness of the concrete or brick surface under.

Rates for tiling shall include for supply, cleaning of the surfaces on which it is laid, mortar bedding, slushing, adhesives, pointing, cutting, fitting around pipes, waste, etc. and thorough cleaning down on completion.

Rates for paving slabs shall include for supply the 50 mm sand layer under, pointing of joints, forming of expansion joints and cleaning down on completion.

5. CARPENTRY AND JOINERY

5.1 SCOPE

This section of the Specification covers all aspects of carpentry and joinery including timber windows, doors and doorframes as well as all aspects of supply and labour.

5.2 MATERIALS

5.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS05	:	Preservative treatment of timber.
SABS540	:	Wood fibre building board.
SABS545	:	Wooden flush doors.
SABS563	:	Softwood structural timber.
SABS629	:	Softwood flooring boards.
SABS737	:	Timber to be used in manufacture of furniture.
SABS803	:	Asbestos-cement celluloses heets.

SABS 876	:	Glued laminated timber structural members.
SABS 1245	:	Stress graded softwood engineering timber.
SABS 082	:	Timber building.
BS1186	:	Quality of timber and workmanship injoinery.
BS2521	:	Lead-based priming paints.
CP112	:	The structural use of timber.

The structural use of timber shall be in accordance with the National Building Regulations, Part L, SABS 082 or BS Code of Practice 112.

5.2.2 General

All timber shall be of good quality, properly dried and free of gum and sap, large loose or dead knots, checks, splits, uneven sides and other defects. The timber shall be free of any signs or rot, worm and beetle and shall be well cut and free of warps and other deformations. The timber shall be supplied in full lengths and sizes and shall be kiln dried to a moisture content suitable for the area in which it is to be used as recommended by the National Building Research Institute.

The timber shall be seasoned to a moisture content of or below the maximum values specified for carpentry, and within the limits given in BS 1186 for joinery, which shall be maintained until the building is completed. Manufacturers shall ensure that the moisture contents of the various joinery items delivered to the site are appropriate to the conditions of use.

All timber used for structural purposes shall be merchantable grade and shall comply with the requirements of SASS 563 or SASS 629.

Unless otherwise specified all materials shall at least conform to the appropriate SASS or SS where such standards exist for timber, plywood, blockboards, nails, screws, bolts, adhesives, etc.

Timber for joinery shall be carefully selected and shall be of best quality, free from large or dead knots, shakes, waney edges or other defects.

Hardwoods and softwoods for joinery shall comply with SS 1186 and suitable species shall be used for the various purposes.

Timber skirtings shall be meranti, of standard size and profile, and shall be as indicated on the drawings and finishing schedules

5.2.3 Connector Plates for Trusses

The metal connector plates shall be fabricated out of 1,2 mm or 2,0 mm drawn quality galvanised steel.

The steel shall have a minimum yield strength of 228 MPa and a minimum ultimate tensile strength of 330 MPa. The corrosion resisting coating shall be 0.38 kg/m commercial class hot dipped galvanised before stamping.

The connector plates shall be capable of transmitting the forces between the members of a truss without exceeding the design stresses set out in the table below:

Design values per pair of connector plates in SA Pine, minimum density = 360 kg/m

Values at 0°angle between load and plate axis and between load and grain:
1,2mmplate 2,21MPa
2,0mmplate 1,34MPa
Values at 90°angle between load & plate axis & between load & grain: 1,2mmplate 1,17MPa
2,0mmplate 0,90 MPa

The connector plates shall have the following Design Plate Strength for pairs of plates in Newtons per lineal millimetre:

	1,2mm (N/mm)	2,0 mm (N/mm)
Tension parallel to plate axis	246	403
Tension perpendicular to plate axis	141	230
Shear parallel to plate axis	109	172
Shear perpendicular to plate axis	105	162

The connector plates shall be shown to be capable of transmitting these forces in structural SA Pine in tests conducted by the Timber Research Institute of the CSIR.

Hurricane clips and U-type hangers shall be as supplied by Timber Engineering Company.

5.2.4 Preservative Treatment

Where directed, all timber shall be treated with a Pentachlorophenol-zinc naphthenate solution, complying with the requirements of SABS 565 and no timber infested with bored or other pests shall be allowed on the Site. The preservative treatment shall be applied by the pressure process described in the SABS Code of Practice No. 05 and the minimum penetration for the various timbers required shall be as specified in Table 11 (Item 13) of the same Code of Practice. All joinery work to be treated shall be completely wrot, fabricated, fitted and then dismantled and sent for treatment before final assembly. The preservative treatment shall not impair the final finish. Any untreated surfaces exposed by subsequent cutting or planning shall be properly painted with the same preservative solution specified above.

Where timber is to be treated for fire resistance, the Engineer shall be provided with .details of the proposed material for approval.

5.2.5 Priming

Carpentry and joinery which is to be painted shall be coated with a thick mixture of white lead and linseed oil, or other approved primer.

No priming shall be applied to surfaces which are to be glued.

The jointing surfaces of all joints exposed to the weather and build-in portions of frames shall be thickly primed except where adhesives are specified.

Carpentry and joinery which is prepared for painting by the manufacturer shall be knotted and primed before it is dispatched to the site.

Primed surfaces shall be touched up where necessary during the progress of the work or where site adjustments have been made.

"Gypsum" or similar type boarding or surfaces to be skim plaster coated shall be fixed with galvanized clout nails, or where screw fixed shall have the heads of both ferrous and non- ferrous metal screws primed or treated as recommended by the manufacturer of the finishing plaster to prevent

deleterious action or pattern staining to the finished product, or alternatively the base material shall be fixed with approved stainless steel fixings.

5.2.6 Ceiling Materials

Ceiling boards shall be 4 mm thick pressed asbestos-cement cellulose sheets manufactured in accordance with SASS 803, or 6 mm thick gypsum plasterboard manufactured in accordance with SASS266.

Joint cover strips shall be asbestos-cement cellulose, 5 mm thick x 50 mm wide or 20 mm half-round timber beads or H-profile steel jointing strips as directed.

Timber brandering shall be 38 x 50 mm or 38 x 38 mm as specified.

Where ceilings are described as suspended, they shall be formed of a grid framework formed of exposed galvanised mild steel or aluminium "Ts" suspended from rafters or purlins and be of the two directional type. The panel size, unless otherwise described shall be 600 mm x 1200 mm.

Size and thickness of main and support members shall be such that the finished ceiling shall have a maximum deflection of 1/360 of span.

Asbestos cement Acoustic ceilings shall be asbestos-cement cellulose sheets manufactured in accordance with SABS 803, with a perforation pattern of 5 mm diameter holes at 19 mm spacing at right angles in both directions.

Cornices shall be stock covered gypsum - plaster board, asbestos-cement, pressed hardboard or timber as indicated on the drawings and schedules.

5.2.7 Door stops

Rubber door stops, 40 mm diameter shall be screwed to plugs in floors and walls as directed wherever it is required to prevent damage to fittings, wall finishes, door handles, etc.

5.2.8 Tempered and Untempered Hardboards

Tempered and untempered hardboard shall comply with the requirements of SABS 540 and shall be a rigid fibre type board of approved manufacture, and of a thickness as indicated on the drawinqs.

Each individual sheet shall have the following information clearly marked on it or on a label attached to it the manufacturer's name, trade name or registered trade mark, the nominal thickness and type of board, and the mark of the South African Bureau of Standards.

5.2.9 Fibre Soft board

Fibre soft board shall comply with the requirements of SABS 540 and shall be a rigid fibre type building board of approved manufacture, and of the thickness specified in the schedules or as shown on the drawings.

Each individual board shall have the following information clearly marked on it or on a label attached to it: the manufacturer's name, trade name or registered trade mark, the nominal thickness and type of board, and the mark of the South African Bureau of Standards

5.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

5.4 CONSTRUCTION

5.4.1 Carpentry (General)

Carpentry work shall be carried out in a proper manner and in conformance with the drawings.

The carpenter shall perform all cutting away and making good in attendance upon all other trades.

The carpenter shall be responsible for the closing-in of openings necessary for the protection of the work during progress. He shall also provide and maintain any temporary coverings required for the protection of any finished work that might be damaged if left unprotected during the progress of the work.

Unless otherwise specified, all joints shall be secured with a suitable type and a sufficient number of nails or other approved type of connectors.

Housings, mortice-and-tenon and other joints shall be carefully made in such a way that they do not impair the strength and stiffness of the beams or members.

"Unwrot" timber shall be as sawn and shall be to the dimensions specified.

All exposed woodwork shall be wrote to a smooth surface, free of machine or other tool marks, scratches, etc., unless otherwise specified. The wrote sizes shall be as specified but with a maximum allowance of 3 mm off full sizes.

5.4.2 Roofs

5.4.2.1 General

All roof timbering shall generally be of sawn sections and only wrot in exposed projections. All timber fascias and bargeboards shall have all surfaces wrot.

All wall plates shall be properly creosote impregnated and bolted to concrete or fixed to brickwork with galvanised hoop iron ties.

Where splices are necessary in rafters, ties or ceiling joists, the timbers shall be lapped at least five

times the width of the timber and securely spiked. Splices in timbers wider than 115 mm shall be bolted with atleast three 9mm bolt sand washers in addition to spiking. All main intersections shall be bolted with 9 mm diameter bolts. "Gang Nail" type prefabricated roof trusses or equal approved may be used.

Wall plates shall be halved at junctions and angles. Purlins, battens, etc., shall be splay scarved at junctions and in all cases the joints shall be placed over the point of support and well spiked.

All purlins and battens shall be properly cross-nailed to rafters as well as brandering to ceiling joists.

5.4.2.2 Prefabricated Contractor Designed Roof Trusses

Design

All trusses shall be designed in accordance with the draft SASS Code of Practice for the design of timber structures by a firm approved by the owner's appointed agent. Trusses shall be designed for a live load of 0,50 kN/m and for the - dead loads described in the schedule. Trusses shall be designed to fall within the maximum centres stated in the schedule. Trusses have been measured at approximately those centres and should the designer or contractor consider that maximum benefit could be obtained by a decrease in the centres he will be free to design and supply such increase number of trusses but

the number of trusses measured and paid for shall remain as measured. The number of trusses to be paid for shall be changed only if the structure to be roofed has been altered.

Shop Drawings

Two prints of the detailed shop drawings and one copy of the design calculations shall be submitted to the Contractor for approval a minimum of three weeks prior to the commencement of manufacture and/or construction of superstructure above door head height, whichever will be the sooner. One copy of the drawings marked up for correction will be returned to the designer fabricator for correction and a corrected sepia is to be submitted to the contractor prior to commencement of manufacture or construction above door head height.

Fabrication

The trusses shall be constructed with jigs especially designed to provide correct cambers and pitches.

All joints are to be close fitted butt joints and made by precision pressing of the metal connector plates into each side of the joint.

The timber roof trusses shall be fabricated in a properly equipped factory by an approved specialist firm of Truss Fabricators using metal plate connector.

Nailing to 'Hurricane" clips and "U" brackets shall be with 2,8 mm x 40 mm galvanised clout nails.

5.4.2.3 Ceilings

Main brandering 38 mm x 50 mm shall be fixed at 400 mm centres at right angles to tie beams with stout galvanised wire nails driven in on skew alternatively in opposite directions. Where trusses are spaced not more than 900 mm apart, the main brandering may be reduced to 38 mm x 38 mm.

Ceiling boards shall be fixed to brandering with clout headed nails 2 mm diameter x 32 mm long and spaced at 100 mm centres to edges and 150 mm centres to intermediate fixings. Joints in ceilings shall receive stock 50 mm wide asbestos-cement cover strips or 20 mm half round wood cover beads or H-profile steel jointing strips as directed. Cornices shall be securely and neatly fixed. Where directed, a trapdoor 600 mm x 600 mm and fitted with a pair of 75 mm steel butts shall be formed in the ceiling.

For suspended ceilings all ductwork, electrical conduit, etc., above the ceiling shall be completed before fixing the suspended ceiling.

Sheets shall not be screwed, nailed or wedged too tightly. Fixing of nails or screws along the extreme edges shall, be avoided and the fixing points shall be not less than 18 mm from the edge of the sheet.

The suspension system shall support the ceiling assembly as shown on the drawings with a maximum deflection of 1/360 of the span. Wall rnouldinqs shall be fastened to the walls at the perimeter of the ceilings.

Where brand name prefabricated type ceiling tiles are specified:

installation shall not be completed (final fixing of tiles) until residual moisture has dissipated and the building is weatherproofed.
tiles from at least four separate containers shall be selected at random during the laying or fixing process.
tiles shall be wedged or fixed in position as recommended by the manufacturers of the specified product.

5.4.2.4 Skirtings
Where indicated on the drawings, standard meranti skirtings shall be fitted with heads of nails punched in, stopped with a matching colour and sanded down.

5.4.2.5 Joinery
All joinery work shall be carried out in a workmanlike manner and in conformance with the drawings.

Joinery work shall consist of the manufacture, delivery to the site and the fixing in the building of all joinery and associated fixtures and fittings described in the specifications and shown on the drawings. It shall also include for the supply and fixing of metal straps, lugs, dowels, etc., the supply and application of priming and preservatives and all ironmongery.

All wrot timber shall be sawn, planed, drilled or otherwise machined or worked to the correct sizes and shapes as shown on the drawings or as specified.

The arrangement, jointing and fixing of all joinery shall be such that shrinkage in any part and in any direction shall not impair the strength and appearance of the finished work, and shall not cause damage to adjoining materials of structures.

All timber that is to be exposed in the finished surfaces of joinery works shall be wrot on the appropriate faces unless otherwise specified, and all machine marks shall be removed by sanding or planning.

The joiner shall perform all necessary morticing, tenoning, grooving, matching, tonguing, housing, rebating, and all other works necessary for correct jointing. He shall also provide all metal plates, screws, nails and other fixings that may be ordered by the Engineer, or that may be necessary for the proper execution of the joinery works specified.

The joiner shall also carry out all works necessary for the proper construction of all framings, linings, etc., and for their support and fixing in the buildings.

Joints shall be constructed exactly as shown on the detailed drawings. Where joints are not specifically indicated they shall be the recognized type of joint for that purpose. The joints shall be made so as to comply with the requirements of BS1186.

Loose joints shall be used where provision must be made for correct positioning, shrinkage, or other movements, and glued joints shall be made where there is no shrinkage or movement in the joints. All glued joints shall be cross tongued or otherwise reinforced. All nails, spikes, sprigs, etc., shall be punched and concealed. Screws shall be countersunk.

All joinery sizes shall be checked with detail drawings and from the building before work is commenced. Jointer's work shall be put in hand as soon as possible but shall not be wedged or glued up until just before being fixed in the building. Joinery on Site shall be carefully stored under cover and protected from rain, wind and sun and should preferably not be introduced into the building until the bricks and plaster have dried out and the windows have been glazed. Joinery built in shall be boarded up and carefully protected to the satisfaction of the Engineer.

The term "arris rounded" means that the corners shall be slightly rounded with sandpaper. Unless otherwise described all wrot timber shall be arris rounded. The term "angle rounded" means that the corners shall be rounded from 3 mm to 9 mm radius and mitred at angles. The term "fully rounded"

means that the edge of the material shall be completely rounded to a semi-circular shape and mitred at angles.

All mortice and tenon joints shall be flush pinned. All linings shall be tongued at angles and framed to conceal the tongued angles. All screws for joinery shall be best quality brass screws unless otherwise stated.

All wrot surfaces shall be steel scraped and sandpapered before and, if necessary, after fixing. Flooring boards, skirtings, cornices and rails of all kinds, shall be in long lengths where possible, but where joints are unavoidable, they shall be concealed. All heading joints shall be splayed. Joinery shall be framed and put together in accordance with the best standard practice. Joiner's work shall be manufactured in the climatic area in which it is to be used and shall be purpose made to detail unless otherwise described as stock.

Where plastic laminates are used the reverse side of the boarding shall be coated with one coat pink primer or other approved sealing agent.

Any work with defects such as shrinkage, warping, opening of joints, etc., appearing before the expiration of the maintenance period for this Contract, shall be removed, refitted and redecorated or replaced by new joinery at the Contractor's expense and any other work disturbed in consequence thereof, shall also be made good at the Contractor'sexpense.

Where shop fabricated joinery is specified to be fixed-in or erected in position after the surrounding or enclosing works of the main building have been completed, it shall be the responsibility of the Contractor to ensure that the necessary fixings are incorporated in the building, alternatively, the Contractor shall construct such groundworks as are required to provide a suitable base and fixing for the joinery.

The Contractor shall secure the fixed-in joinery so that they are plumb and true to the shapes and dimensions as detailed.

5.4.2.6 Panelling

Where panelling is called for, it shall be executed with the type of material as called for in the Schedule of Quantities or on the drawings. Where wood is called for, this shall be selected and used according to colour. Panelling shall be done in such a - manner that nail heads or any other marks may be covered or

filled in. Any joints shall be covered with pre-selected timber strips and where hardboard, asbestos-cement or any other material is used, the cover strips shall be as recommended by the manufacturer.

5.4.2.7 Timber Windows

Windows shall be of the types and sizes as indicated on the schedules. All opening sashes shall be

hung with 75 mm butt hinges and fitted with furniture as indicated on the schedules.

5.4.2.8 Timber Doors, Door Frames and Fanlights

5.4.2.8.1 General

Timber door frames shall be of the types and sizes as indicated on the schedules and shall be rebated for door and angle rounded on exposed salient edge. If the door has a hardwood finish, then the same type of hardwood shall be used for door frame, quadrants and architraves.

Door frames, linings, panel doors, flush doors, sliding doors, etc., shall be supplied and installed, fitted or hung by the joiner and be of the types and sizes as shown on the drawings.

Doors shall be hung in such a manner that they are able to open without binding at any point.

Approved types of joints shall be made at all intersections of timber framed doors and the joints shall be properly doweled and glued.

Doors and frames shall be prepared for oiling, staining, varnishing or painting as specified.

Interior and exterior timber doors and door furniture shall be as shown on the drawings or as indicated in the schedules.

5.4.2.8.2 Flush Doors

All flush doors shall comply with the requirements of SABS 545 and this specification.

Flush doors shall be approved before being fixed in the building, shall not be less than 40 mm thick and shall be constructed to comply with the following requirements:

The frame shall be of solid wood not less than 38 mm wide at the sides and 76 mm wide at the top and bottom and each component shall be of one piece or of approved laminated construction.

The hollow core within the frame shall be filled with compressed corrugated cardboard, so manufactured that it shall retain its shape if removed from the frame.

Both sides of the frame shall be continuous, smooth and capable of taking the adhesive required for fixing the veneer or hard boardfacing.

Lock rails 750 mm long x 76 mm wide shall be doweled and glued to the middle of the side framing.

The door facing shall consist of either 3 mm thick veneer or hardboard, finished at the sides against the edge cover strips.

The edge cover strips shall be of a timber to match the door facing, and shall not be less than 7,5 mm thick for single doors and hanging stiles of double doors, and 19 mm thick for meeting stiles of double doors. The 19 mm thick strips shall be clearly marked.

The frame, core filling, edge strips and door facings shall be bonded together under hydraulic pressure into one single unit using an approved water resistant adhesive, and the exposed surfaces shall be sanded to a smooth and even surface after removal of the door from the press.

The doors shall be guaranteed against defects for the maintenance period after hanging, and the Contractor shall replace at his own expense, any door found to be defective due to hanging or the fitting of door furniture during the guarantee period.

Door stops shall be fitted as indicated in the schedules.

5.4.2.8.3 Framed, Ledged and Braced Batten Doors

Framed, ledged and braced batten doors shall only be for external use unless otherwise specified, and shall not be less than 40 mm thick.

All framed, ledged and braced batten doors shall be approved before being fixed in the building and shall be constructed to comply with the following requirements:

Unless otherwise specified, framed, ledged and braced batten doors shall be constructed with components having the following minimum dimensions, stiles and top rail 40 mm x 114 mm, middle ledge 19 mm x 152 mm, bottom ledge 19 mm x 228 mm and braces 19 mm x 114mm.

The braces shall be splayed at the ends for fitting into notches in the ledges, stiles and top rail.

The stiles and top rail shall be grooved all round on the inner edges for, and filled in with 19 mm thick, tongued and grooved boarding in narrow widths with V-joints on both faces.

The boarding shall be rebated on the outer edges and fitted into grooves in the stiles and top rail, and fixed with countersunk screws from the back of the door at each intersection with the middle ledge, bottom ledge and the braces.

The inner edges of the stiles, top rail and abutting edges of the boarding shall be chamfered on the outer face to form a V-joint.

Where a door is specified with a flush panel on the inner face, the inner edges of the stiles, top rail and middle and bottom ledges shall be rebated for, and filled in flush with a 6 mm thick three-ply plywood panel let into these rebates and secured with panel pins.

Hardwood weather bars as detailed on the drawings shall be fitted to the external face of the doors.

Door stops and approved retaining devices shall be fitted as indicated in the schedules.

5.4.2.8.4 Fanlights

Except where otherwise specified, fanlights shall be formed with 40 mm x 65 mm stiles and top rails, and 40 mm x 76 mm bottom rails properly joined together.

The inner edges of the frame shall be open rebated for the glass, fitted with 13 mm x 19 mm quadrant glazing beads mitred at the corners and fixed with panel pins.

5.4.2.8.5 Blackboards

Blackboards shall be formed with a meranti wood frame and chalkrail with the corners mitred, properly jointed, doweled and glued, all as detailed and dimensioned on the drawings.

mm thick untempered hardboard shall be fitted to the rear of the frame with countersunk screws. The hardboard shall not extend beyond the edges of the frame, and shall be painted with two coats of green school-board paint.

Blackboards shall be rigid and shall have a flat, smooth and plane surface and shall be fitted in an approved manner in positions as indicated in the schedules or as shown on the drawings.

5.4.2.8.6 Pinboards

Pin boards shall be formed with a meranti wood frame with a rebate on the inside to receive the pinning surface corners shall be mitred, properly jointed, doweled and glued, all as detailed and dimensioned on the drawings.

Pin boards shall be rigid and shall have a flat, smooth and plane surface and shall be fitted in an approved manner in positions as indicated in the schedules or as shown on the drawings.

5.5 TOLERANCES

Wrot sizes of timber shall be as specified but with a maximum allowance of 3 mm off full sizes.

No allowance will be made on the thickness of doors, fanlights, flooring and sashes which shall be to the full size specified or on other items where finished sizes are specified.

All doors shall be hung with a maximum clearance of 1,5 mm at the top and sides and 3 mm at the bottom.

5.6 TESTING

As the Contractor is fully responsible for ensuring that the quality of all work produced, both in respect of materials used and of workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the Specifications.

5.7 MEASUREMENT AND PAYMENT

Measurement and payment of roof timbering, flooring, joinery, timber doors, doorframes, windows, ceiling brandering, ceilings, cornices, insulation to ceilings, skirtings and door stops shall be according to the units and rates determined from the Schedule of Quantities and the rates quoted will be deemed to cover the item of work finished complete in every respect.

Pricing of all roof and floor timbers shall include for all preservative treatment, lapping, scarfing, splay cutting, halving, etc., as well as jointing and fixing materials.

Rates for all joinery items shall include for all aspects of fabrication, preservative treatment, mitres, stopped and fair ends, morticing, tenoning, housing, trenailing, flush pinning, wedging, keying, clamping, glueing, etc., as well as for fixing complete with all necessary nails, spikes, screws, plugs or "Rawlplugs" or hardened steel nails, etc., and for making good plaster, tiles, facings or other finish.

Rates for doors shall include for all fixing, hanging, oiling of hinges and accessories and easing required for proper operation.

The following schedules of prices include for the supply of all timber of the required grade and type including all cutting and waste, cutting to exist length and end angles necessary to manufacture the respective truss types, the supply of all connector plates, prefabrication of the trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works and-

Unloading and storing under cover and protected from the weather or,Hoisting up and erecting the trusses at the required truss centre. Truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing, and holding down and connection supplied by the truss fabricator.

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

Rates for all roof sheeting, ceiling boarding, etc. shall include for all straight cutting and waste.

6. PREFABRICATED TIMBER ROOF TRUSSES

6.1 SCOPE

This Specification covers all aspects of the design, fabrication and erection of monoplaner prefabricated metal connectored timber roof trusses.

6.2 MATERIALS

6.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS05 : Preservative treatment of timber. SABS563 : Softwood structural timber.

SABS1245 : Stress graded softwood engineering 1 timber.

The structural design of timber shall be in accordance with the National Building Regulations, Part Land SABS 0163.

6.2.2 General

All timber shall be of good quality, properly dried and free of gum and sap, large loose or dead knots, checks, splits, uneven sides and other defects. The timber shall be free of any signs or rot, worm and beetle and shall be well cut and free of warps and other deformations. The timber shall be supplied in full lengths and sizes and shall be kiln dried to a moisture content suitable for the area in which it is to be used as recommended by the National Building Research Institute.

All timber used for structural purposes shall be stress graded and shall comply with the requirements of SASS 563.

6.2.3 ZEA2.3 Connector Plates for Trusses

The metal connector plates shall be fabricated out of 1,2 mm or 2,0 mm drawn quality galvanised steel.

The steel shall have a minimum yield strength of 228 MPa and a minimum ultimate tensile strength of 330 MPa. The corrosion resisting coating shall be 0.65 kg/m commercial class hot dipped galvanised before stamping.

The connector plates shall be capable of transmitting the forces between the members of a truss without exceeding the design stresses set out in the table below:

Design values per pair of connector plates in SA Pine, minimum density = 360 kg/m

Values at 0°angle between load and plate axis and between load and grain:
1,2mmplate 2,21MPa
2,0mmplate 2,30MPa
Values at 90°angle between load and plate axis and between load and grain: 1,2mmplate1,17MPa
2,0mmplate 0,90 MPa

The connector plates shall have the following Design Plate Strength for pairs of plates in Newtons per lineal millimetre:

	1,2mm (N/mm)	2,0 mm (N/mm)
Tension parallel to plate axis	246	403
Tension perpendicular to plate axis	141	230
Shear parallel to plate axis	109	172
Shear perpendicular to plate axis	105	162

The connector plates shall be shown to be capable of transmitting these forces in structural SA Pine in tests conducted by the Timber Research Institute of the CSIR.

Hurricane clips and U-type hangers shall be as supplied by Timber Engineering Company (Pty) Ltd. (TECO)

6.2.4 Preservative Treatment

Where directed, all timber shall be treated with a Pentachlorophenol-zinc naphthenate solution, complying with the requirements of SABS 565 and no timber infested with bored or other pests shall be allowed on the Site. The preservative treatment shall be applied by the pressure process described in the SABS Code of Practice No. 05 and the minimum penetration for the various timbers required shall be as specified in Table 11 (Item 13) of the same Code of Practice. All joinery work to be treated shall be completely wrot, fabricated, fitted and then dismantled and sent for treatment before final assembly. The preservative treatment shall not impair the final finish. Any untreated surfaces exposed by

subsequent cutting or planning shall be properly painted with the same preservative solution specified above.

Where timber is to be treated for fire resistance, the Engineer shall be provided with .details of the proposed material for approval.

6.3 DESIGN AND FABRICATION

6.3.1 Design

All trusses shall be designed by a registered professional engineer in accordance with SABS Code of Practice 0163 Part 1 by a firm approved by the Architect. Trusses shall be designed for a live load of 0,50 kN/m while dead loads, slope and pitch of trusses, spans and other special considerations are to be determined from the tender drawings.

6.3.2 Shop Drawings

Two prints of the detailed shop drawings and one copy of the design calculations shall be submitted to the Architect for approval a minimum of two weeks prior to the commencement of manufacture of trusses. One copy of the drawings marked up for correction will be returned to the designer/fabricator for correction and a corrected sepia is to be submitted to the Architect prior to commencement of manufacture of trusses.

6.3.3 Fabrication

The trusses shall be constructed with jigs especially designed to provide correct cambers and pitches.

All joints are to be close fitted butt joints and made by precision pressing of the metal connector plates into each side of the joint.

The timber roof trusses shall be fabricated in a properly equipped factory by an approved specialist firm of Truss Fabricators using metal plate connectors.
Nailing to "Hurricane" clips, cleats and "U" brackets shall be with 2,8 mm x 40 mm galvanised clout nails.

6.4 ERECTION

The erection and bracing of pre-fabricated timber roof trusses shall be carried out in accordance with the manual titled "The Erection and Bracing of Timber Roof Trusses" as produced by the Truss Plate

Association of Southern Africa and the National Timber Research Institute of the CSIR. The quality of the timber used for bracing must be at least Grade M4 or better. The provision of suitable holding down arrangements of trusses to walls is essential and is to be provided and built into walls by the main contractor. The designer of the trusses shall confirm in writing to the Architect that the trusses have been erected and braced to his satisfaction.

6.5 PRICING

The price tendered by the fabricator of the prefabricated timber roof trusses shall include for:

All design and drawings costs

The supply of all timber of the required grade and type including all cutting and waste, cutting to exact length and end angles necessary to manufacture the respective truss types, the supply of all connector plates, prefabrication of the trusses in a jig, checking the completed trusses for quality, loading up, transporting to the site of the works and unloading.

Unloading and storing under cover and protecting from the weather.

Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of the wall plates, all in accordance with the working drawings including all bracing, holding down and metal connections supplied by the truss fabricator.

Site supervision to ensure that all erection details have been complied with satisfactorily

7. ROOF AND WALL CLADDING AND RAINWATER ITEMS

7.1 SCOPE

This section of the Specification covers all aspects of roof and wall cladding and rainwater items such as gutters and down pipes as well as the supply of materials and labour.

The Contractor must submit sheeting layout drawings and material take-off lists in duplicate to the Engineer for approval at least 3 weeks before commencement of ordering of material.

The Engineer will return one copy of the Contractor's drawings and material lists within 2 weeks of receipt. These will be corrected where necessary and stamped "Approved in Principle".

7.2 MATERIALS

7.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS542 : Concrete roofing tiles.

SABS685 : Asbestos-cement sheets (Corrugated and flat). SABS934 : Hot dip (galvanised) zinc coatings on steel and strip.

7.2.2 Galvanised Steel Items

7.2.2.1 Roofing and Cladding

The I.B.R. roof sheeting and wall cladding shall have five box rib flutes 37 mm deep, spaced at 171,5 mm centres providing a nett laid cover width of 686 mm and shall be manufactured from plain or embossed galvanised steel sheet in 0,6 mm, 0,8 mm or 1,0 mm thickness with Z275, Z450 or Z600 spelter. Where possible, the sheets shall be a single length, from eaves to eaves for roofs and from floor to roof or as otherwise indicated for walls. However, if these lengths are greater than standard sheet lengths, the number of laps shall be kept to a minimum and shall conform to the manufacturer's recommendations for the roof slopes indicated.

The roofing and cladding shall be complete with all necessary matching flashings, ridging, hip and corner coverings, ridge and eaves closers, etc., with material thickness and spellers as above except that all flashings to be 0,8 mm thick.

7.2.2.2 Gutters and Rainwater Downpipes

Sizes and shapes of the gutters and down pipes with galvanised mild steel brackets and clips shall be as shown on the drawings and shall be galvanised sheet steel 0,8 mm thick.

7.2.2.3 Hail Guards

Hail guards shall be 2 mm diameter crimped galvanised steel wire woven into a mesh with 12 mm x 12 mm openings.

7.2.2.4 Bird Proofing

Bird proofing shall be of 2 mm diameter crimped galvanised steel wire woven into a mesh with 12 mm x 12 mm openings.

7.2.2.5 Roof Ventilators

Roof ventilators shall be an approved type of galvanised sheet steel ventilator, complete with the necessary framework, flashings, etc. Where the buildings have ceilings, the ventilators shall be fitted with extension shafts from the roof to the ceiling with a suitable and aesthetically acceptable grill at the ceiling.

7.2.2.6 Internal Wall Panelling

Internal wall panelling shall be standard "Robertson Horizontal Q Panel" or equal approved manufactured from 1,2 mm thick galvanised sheet steel. The panelling shall consist of 54 mm deep x 320 mm wide interlocking units except for closure units where specials may have to be manufactured.

7.2.3 Asbestos-Cement Items

7.2.3.1 Roofing and Cladding

Asbestos-cement sheeting for roofs and wall cladding shall be of the corrugated type or as otherwise required, of best quality and to the approval of the Engineer. Where possible, the sheets shall be a single length, from eaves to eaves for roofs and from floor to roof or as otherwise indicated for walls. However, if these lengths are greater than standard sheet lengths, the number of laps shall be kept to a minimum and shall conform to the manufacturer's recommendations for the roof slopes indicated.

The roofing and cladding shall be complete with all the necessary flashings, ridging, ridge finals, hip and corner coverings, ridge and eaves closers, fascias, barge boards, etc., and these shall be of the sizes and shapes necessary to suit the sheeting.

7.2.3.2 Gutters and Rainwater Downpipes

Sizes and shapes of the gutters and down pipes with aluminium brackets and clips and other accessories shall be as shown on the drawings.

7.2.3.3 Bird Proofing

Sizes, shapes, and types of bird proofing shall be as indicated on the drawings.

7.2.3.4 Roof Ventilators

Roof ventilators shall be of a type approved by the Engineer and shall be complete with all the necessary accessories. Where the buildings have ceilings, the ventilators shall be fitted with extension shafts from the roof to the ceiling with a suitable and aesthetically acceptable grill at the ceiling.

7.2.4 Translucent Sheeting

It shall be manufactured from 2,4 kg/m2 (heavyweight) "Paxit" (Paxit Pipekor Everite) fibre glass to SABS 1150 -1984, "Opalescent 65" coated both sides with surface tissue.

7.2.5 Aluminium Flashings

Where aluminium flashings are called for, these shall be 1 mm thick.

7.2.6 Concrete Roofing Tiles

Concrete roofing tiles shall comply with the requirements of SABS 542.

7.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

7.4 INSTALLATION

7.4.1 General

The erection of roof sheeting, concrete roof tiles, cladding, accessories and translucent sheeting shall be in accordance with the manufacturer's recommendations.

All laps in roof sheeting, wall cladding, translucent sheeting, and accessories shall be sealed with an approved sealant to the manufacturer's specification which shall be approved by the Engineer prior to use.

All swarf, grindings, and surplus fasteners shall be removed from the roof sheeting, cladding, translucent sheeting and accessories after completion.

All holes for fasteners in roof sheeting, wall cladding, translucent sheeting, accessories, purlins and sheeting rails shall be drilled. (Asbestos cement cladding only)

All roofing and wall cladding fixed to buildings shall be waterproof.

Joints in brickwork shall be raked out for flashings and pointed with cement mortar after fixing of flashings.

7.4.2 Roofing and Cladding

7.4.2.1 Galvanised Steel

Roofing, cladding and accessories shall be fixed to steel purloins and sheeting raiis with hexagon headed No.14 carbon steel top speed fasteners each complete with a 20 mm x 7 mm galvanised bonded washer. Longer drive screws generally 90 mm are to be used with timber purloins.

The sides of the galvanised sheets shall be lapped over for a minimum of one flute or according to the manufacturer's recommendations and shall be sealed and stitched with 25 mm long hexagon headed No.14 carbon steel top speed fasteners, each complete with a 20 mm x 7 mm galvanised bonded washer.

End laps shall only occur at purlins and girts and each sheet shall extend beyond the purlin by 150 mm (min) and the girt by 75 mm (min) to give laps of 225 mm and 150 mm (min) respectively.

Roof sheeting shall be laid with the narrow flutes, uppermost whereas the broad flutes shall be fixed externally for the wall cladding.

All Internal wall panelling shall be welded or screwed to the steel columns of the building framework.

7.4.2.2 Asbestos-Cement

The sheets shall be laid with the smooth side upward for roofing and outwards for cladding and shall be sawn to the correct mitre before fixing. The sheets shall be laid with a minimum end lap of 150 mm and a side lap of 45mm.

Where roof slopes are less than 20' or where specially directed end laps shall be increased and side laps shall be bedded in an approved bitumen mastic.

When laying sheets, consideration shall be given to correct direction of lapping away from the direction of prevailing winds.

Sheets shall be secured to steel members with hook bolts and to timber members with drive screws. The hook bolts and drive screws shall be 8 mm diameter mild steel sherardized and dipped in epoxy tar compound of an approved make and supplied with one nut each where applicable, one conical washer and one bitumastic felt or approved plastic washer, the latter to be placed in contact with the sheet in each case. The hook bolts shall be of the correct length and shall not project more than the length of three thread pitches beyond the nut in the tightened position.

Sheets shall be fixed through the crown of the second corrugation from the side lap and for intermediate rows, one hook bolt or drive screw per sheet per purloin. Eaves shall be fixed by two hook bolts or drivescrews per sheet.

7.4.3 Gutters and Rainwater Downpipes

7.4.3.1 Galvanised Steel

Gutters shall be manufactured with beaded edges and shall be lapped for a minimum of 75 mm at each joint. All joints shall be pop-rivetted and sealed with silicone sealant.

Gutters shall be fixed on suitable galvanised mild steel brackets and shall fall to the outlets as shown on the drawings. The brackets shall be accurately bent to shape with the outer edge clipped over the beaded edge of the gutter and fixed to the roofing in an approved manner.

The seams of the down pipes shall be folded and all slip joints shall be pop rivetted.

The downpipes shall be fixed 25 mm clear of the finished wall face or structure by suitable galvanised mild steel brackets which shall be fixed to the walls.

7.4.3.2 Asbestos-Cement

Gutters and downpipes shall be erected to the manufacturer's instructions and recommendations.

7.4.4 Hail Guards

Where called for, hail guards shall be fitted over the full length of the gutters and shall be supported on suitable stools at approximately 500 mm centres.

7.4.5 Bird Proofing

Bird proofing shall be fixed at the eaves of buildings and where otherwise required in an approved manner as shown on the drawings.

7.4.6 Roof Ventilators

Roof ventilators shall be mounted on the roofs of buildings were shown on the drawings in an approved manner.

7.4.7 Internal Wall Panelling

All units of internal wall panelling shall be welded or screwed to the steel columns of the building framework.

7.4.8 Translucent Sheeting

Translucent roofing and cladding sheets shall be fixed in position in accordance with the manufacturer's recommendations.

7.5 TOLERANCES

The structural properties of the galvanised steel roof cladding must be such that the load given below can be supported by the roof cladding over the given spans within the defined limited deflection:

Maximum super imposed distributed load: 1,5 kPa" Maximum deflection: 1/200th of span
Maximum required spans:
Single span 1,85m

Double span 2,15m

Cantilever 0,45m

The structural properties of the galvanised steel wall cladding must be such that the load given below can be supported by the wall cladding over the given spans within the defined limited deflection:

Maximum super imposed distributed load: 0,75 kPa Maximum deflection: 1/120th of span
Maximum required spans:
Single span 2,85m

Double span 3,15m

Cantilever 1,15m

7.6 TESTING

As the Contractor is fully responsible for ensuring that the quality of all work produced, both in respect of materials used and of workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the specifications.

7.7 MEASUREMENT AND PAYMENT

Measurement and payment for all items under this section shall be according to the units and rates determined from the Schedule of Quantities and the rates quoted will be deemed to cover the items of work finished complete in every respect.

8. ROOF AND WALL CLADDING AND RAIN WATER ITEMS

8.1 SCOPE

This section of the Specification covers the installation of the potable water system, soil waste and vent systems and plumbing fixtures as well as the supply of all materials and labour.

8.2 MATERIALS

8.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS62 :Steel pipes and pipe fittings up to 150 mm nominal bore suitable for screwing to ISO R7 pipethreads

SABS151 :Fixed electric storage water heaters

SABS226 :Water taps
SABS242 :Stainless steel sinks with draining boards for domestic use
SABS460 :Copper and copper alloy tubing
SABS497 :Glazed ceramic sanitary-ware
SABS509 :Malleable cast iron pipe fittings
SABS558 :Cast iron surface boxes and manhole and inspection cover sand frames
SABS559 :Vitrified clay sewer pipes and fittings
SABS677 :Concrete non-pressure pipes
SABS746 :Cast iron pipes and pipe fittings for use above ground in drainage installations
SABS776 :Copper alloy gate valves
SABS906 :Stainless steel wash hand basins and wash troughs
SABS907 :Stainless steel sinks for institutional use
SABS921 :Pitch impregnated fibre sewer pipes and couplings
SABS924 :Stainless steel stall urinals
SABS966 :Components of unplasticized PVC pressure pipe systems.
SABS967 :Un plasticized PVC pipes and pipe fittings for use above ground in drainage installations
SABS974 :Rubber joint rings(non-cellular)
SABS058 :Sewer and drain jointing
SABS074 :Identification of pipeline contents
SABS 0140 :Identification colour marking Part
BS1115 :Cast iron gratings for gullies and stormwater drains
BS1211 :Centrifugally cast (spun) iron pressure pipes for water, gas,and sewage

8.2.2 General

All materials, fixtures and equipment shall be of the best quality and of approved manufacture, new, undamaged in any way and shall bear the manufacturer's name and grading.

8.2.3 Electric Hot Water Geysers

Electric hot water geysers shall be of an approved type and manufacture, and of the type and capacity specified on the drawings and shall comply with the requirements of SABS 151 and be marked accordingly.

Geysers shall be a high pressure type (300 kPa), with a dry element, complete with an approved type of automatic pressure control and vacuum safety valve.

8.2.4 Wash hand Basins for Offices and Houses

Unless otherwise specified, wash-hand basins shall be one of the following types:

Cast iron wash-hand basins shall be of an approved manufacture of minimum overall dimensions 550 mm x 400 mm, with a mass of not less than 20 kg constructed from clean cast iron to an approved shape and finished on the inner face, rim, edges, etc., with white porcelain enamel, which shall be free from all blemishes and be of even thickness over the whole surface, and the outside shall be painted

Vitreous china wash-hand basins shall be of minimum overall dimensions 550 mm x 400 mm, with a mass of not less than 14,5 kg, constructed from vitreous china finished with a vitreous lead less glaze thoroughly fused and united to the body, all complying with the requirements of SABS497.

8.2.5 Wash-hand Basins and Wash Troughs for Workshops and Ablutions

Unless otherwise specified, stainless steel wash-hand basins shall be of approved manufacture of type 3041,2 mm thick stainless steel with splash backs of approved height and shall otherwise comply with SABS 906 and SABS 242.

Basins shall be of minimum overall dimensions 520 mm x 400 mm, and shall be fixed in position on approved 25 mm diameter stainless steel pipe stands fixed to walls and floors in an approved manner.

Stainless steel wash troughs shall be of approved manufacture of type 304 1,2 mm thick stainless steel and shall otherwise comply with SABS 906 and to be of one piece pressed construction.

8.2.6 Fittings to Wash-hand Basins

Wash-hand basins shall be fitted with a 32 mm diameter, threaded, brass waste union, a chromium-plated brass flange and grating, a black vulcanite plug on a chromium-plated chain "Flexi" Butyl rubber trap or approved equal, and one pair of 15 mm diameter "Easy Clean" heavy pattern chromium-plated screw down pillar taps marked with red and green identification spots are separately measured. Where only cold water is supplied, the basin shall be fitted with one pillar tap with a green identification spot (separately measured) and the second tap hole in the basin shall be plugged with a cemented-in fireclay or china plug.

8.2.7 Baths

Unless otherwise specified, baths shall be first grade, of cast iron with rectangular top, porcelain enamelled inside and painted outside. Baths shall be fitted with 38 mm diameter waste connection, overflow, plug, and chain. Two 15 mm "Easy Clean" heavy pattern chromium-plated bib taps marked with red and green identification spots and a "Flexi" Butyl rubber or equal approved trap are separately measured.

8.2.8 Stainless Steel Sinks and Drainers

Stainless steel sinks and drainers shall be manufactured from Type 304 stainless steel, and shall comply with the requirements of SABS 242 for domestic uses, or with SABS 907 for other uses.

All units shall be treated on the underside with a vermin-proof sound deadening material that shall be sprayed on at the factory. All units shall be clearly embossed or stamped, either on the unit itself, or on an attached plate, showing the name, trade name or registered trade mark of the manufacturer and the grade of material used. Each sink for institutional use shall be complete with a 150 mm splash back, a slot overflow, a 40 mm diameter threaded brass waste union, a chromium-plated brass flange and grating, a black vulcanite plug on a chromium-plated chain, and a "Flexi" Butyl rubber trap or approved equal. Where specified, the drainers shall be complete with a tiling key along the back edge and along one or both ends.

8.2.9 Shower Fittings

Unless otherwise specified, each shower cubicle shall be fitted complete with the following fittings which shall be of approved manufacture and pattern:

One pair of built-in type 15 mm diameter heavy pattern chromium-plated shower valves fitted with red and green identification spots. (measured separately)

One "Castle Brass No. AP2-6" vandal proof chromium-plated cast brass shower rose, or approved equal or a 50 mm diameter chromium plated shower rose for screwing to 13 mm pipe as called for on the drawings. (measured separately)

One cast brass heavy pattern shower trap with hinged chromium-plated grating. (measured separately)

One "Vaal No. 6031" soap holder, or approved equal, 150 mm x 150 mm semi-recessed, tongue lipped, white earthenware, built into one wall. (measured separately)

(One full-length heavy-duty plastic shower curtain, complete with chromium-plated rail and fittings, and with heavy-duty plastic curtain rings. The colour of the curtain shall be approved by the Engineer.

8.2.10 Sanitary Fittings

Low level W.C. suites shall consist of "Vaal Protea" or approved equal, white vitreous china closets with "S" or "P" traps and seat lugs, matching flat bottom flushing cisterns with left-hand or right-hand outlets, with or without vents, complete with brackets, ball valves, flush pipes connected to flushing rims of pans with rubber cone joints; solid, heavy duty double flap, plastic toilet seats with hinges and buffers; and with brass gate valves for isolation or maintenance (valves separately measured).

Toilet paper holders shall be "Vaal No. 6030" or approved equal, 150 mm x 150 mm semi- recessed, white earthenware, complete with wood or plastic spring loaded rollers, fitted next to all W.C. pans or an approved stout chromium plated toilet paper holder plugged to the wall as called for in the Schedule of Quantities.

8.2.11 Stainless Steel Urinals

Stainless steel urinals shall be "Citimetal" Model CS102 or approved equal, manufactured from Grade 304 stainless steel, and comply in all respects with the material requirements and constructional details laid down in SASS924.

The urinal shall be of one piece construction approximately 1,2 m high, with a tilling key at the top, complete with an automatic built-in flush system, having a curved back, end panels, channel, and tread plate, and with the channel outlet fitted with a chromium-plated brass grating and frame with a threaded tail for jointing to the outlet pipe.

All urinals shall be clearly embossed or stamped, either on the unit itself, or on an attached plate, showing the manufacturer's name, trade name or registered trademark and the grade of material used.

8.2.12 Mild Steel Pipes and Fittings

Galvanized mild steel piping for water supply and waste drainage shall be solid drawn seamless mild steel pipes, galvanized inside and out, complying with the requirements of SABS 62 medium class

All threads shall be tapered. Parallel threads will not be acceptable.

Flexible joints for galvanized mild steel pipes shall be "Viking-Johnson Junior Couplings" or approved equal.

Fittings for water piping shall be best quality malleable iron pipe fittings of approved manufacture, complying with the requirements of SASS 509.

Fittings for waste piping shall be best quality cast brass of approved manufacture. The fittings shall be of full bore, smooth and clean inside and outside and with sharply cut threads. Cleaning eye fittings shall be fitted with brass spanner headed caps, threaded and screwed into position. Unless otherwise specified cleaning eyes shall be used at all changes in direction of waste pipes.

8.2.13 Iron Pipes and Fittings

Cast iron pipes and fittings for waste pipes underground and vent pipes above ground shall be heavy duty and comply with the requirements of SS 1211, be of approved manufacture, be approved before being installed and shall be badged with the manufacturer's name and trade name.

Cast iron pipes and fittings shall be coated internally and externally with an approved bituminous preservative.

Cast iron pipes and fittings shall be dark grey in colour when fracture tested and be such that they may be easily drilled, tapped and filed.

"Timesaver" couplings or approved equal shall be used for plain ended pipes and fittings.

8.2.14 Vitrified Clay Pipes and Fittings

Vitrified clay, spigot and socket pipes and fittings for soil pipes underground shall comply with the requirements of SASS 559. Plain ended pipes with specified or other approved jointing systems may be used.

The pipes and fittings shall be of the diameter specified.

Each length of pipe and each fitting shall be legibly marked with the manufacturer's name, trade mark or trade name, and the SASS mark,Rubber sealing rings complying with SASS 974 shall be used at joints of socketed vitrified clay pipes and fittings, except for oily sewers where the sealing rings shall be neoprene complying with SASS 974 Class S.

8.2.15 Concrete Pipes

Unless otherwise specified, concrete pipes shall comply with the requirements of SASS 677 for Class "C", Type "SC" spigot and socket pipes. These concrete pipes shall be used below slabs, loading platforms, etc., to convey rainwater discharged from downpipes.

8.2.16 Pipes and Fittings

Rigid PVC pressure pipes and fittings for cold water supply and soil and vent pipes and fittings shall comply with the requirements of SASS 966 and SASS 967 respectively.

8.2.17 Copper Tubes

Copper tubes shall be of the best quality, of approved manufacture and shall comply with SASS 460 when fixed in buildings. Copper tubing shall only be used at connections to fixtures and the length of tubing used shall be kept to a minimum.

8.2.18 Pitch Fibre Pipes and Fittings

Pitch impregnated fibre sewer pipes and fittings shall comply with the requirements of SASS 921.

8.2.19 Water Taps and Valves

All water taps and gate valves shall be of the best quality and manufacture, complying with the requirements of SABS 226 and SABS 776 respectively.

Taps for internal use shall be heavy pattern chromium plated smooth faced easy-clean type, with hot and cold badges where applicable. Taps for external use shall be heavy pattern polished brass hose type.

Gate valves shall be "Prestex" cast brass full way gate valves or approved equal.

15 mm diameter brass "L. K. connector type angle valve", or approved equal, shall be used below wash-hand basins, etc., where called for on drawings.

8.2.20 Traps

Brass traps shall be solid cast brass traps with even and clean bores, fitted where specified with a screwed inspection opening cast into the body with a spanner headed cap screwed in. Butyl rubber traps shall be "Flexi" or equal approved and fitted where specified.

Traps for waste drainage outside buildings shall be 1 00 mm diameter vitrified clay or pitch fibre gulley traps or 100 mm diameter vitrified clay or pitch fiber universal traps with hopper heads with one, two or three vertical or side inlets, encased in Class 15/19 concrete. Each trap shall be fitted with a cast iron hinged grating and frame, with brass locking fittings, set on cement mortar.

8.2.21 Cast Iron Surface Boxes

All surface boxes for valves, inspection eyes, etc., shall be of the sizes and weights specified or shown on the drawings, complying with the requirements of SABS 558 and coated with an approved preservative solution before leaving the manufacturer's works.

8.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this Specification in a safe and efficient manner.

8.4 INSTALLATION

8.4.1 General

All drainage work, sanitary work and plumbing work shall be executed in accordance with the regulations and by-laws of the Local Authorities and to the satisfaction of the Engineer. Only licensed drain layers are to be employed in a skilled capacity for pipe laying.

Plumbing shall be installed in conformance with building and structure conditions. Wherever possible, all pipes shall be positioned before the walls, etc. are built, in order that the pipes may be built into the walls, floors, etc. However, where this is not feasible, the walls shall be chased using carborundum or diamond tipped cutting tools to cut the sides, followed by a sharp chisel to finish the chase. Pipes fixed in chases shall be firmly fastened in position with saddles fixed at minimum 1000 mm centres and a maximum of 150 mm from wall entry or exit points. Depths of pipes below brick or concrete surfaces to receive plaster shall be a minimum of 3 mm to any portion of the pipe or fillings failing which the chases shall be covered by a layer of expanded metal latching minimum 0,8 kg/m 100 mm wider than the chase

prior to plastering. Exposed piping shall be parallel with, or at right angles to walls or structures. Provision shall be made for expansion and contraction without undue stress in the piping systems.

Plumbing shall be carried out in strict accordance with the drawings. No deviations from the drawings may be made without written approval from the Engineer

Water and sewer pipelines shall be a minimum of 300 mm apart, horizontally and vertically.

All WC pans and wash basin pedestals shall be fixed with stout brass cup headed screws to lead plugs embedded in the floor and flush with granolithic or floor tiles. All cisterns, wash basins, and urinals shall be fixed flush to, tiled, plastered, bagged or smooth brick walls with bolts cast in.

Hot and cold water connections as well as all necessary traps and waste pipes, are to be made to wash basins, sinks, showers, cisterns, etc.

Electric geysers shall be mounted as shown on the drawings and all hot water piping shall be laid inside buildings. Approved pressure control valves shall be fitted to the cold water supply to the geysers.

All holes or chases in walls, ceilings, etc. , as well as making good to all finishes, shall be included For under the respective plumbing and drainage items.

8.4.2 Mild Steel Piping

Teflon tape, or approved equal, shall be applied to make threads of screwed joints in the direction of the threads and wound from the barrel of the pipe to the open end.

The interior of all threaded pipes shall be reamed to remove burrs and all scale shall be removed from the inside of the pipes.

Welding shall not be permitted on galvanized mild steel piping.

Unions or flanges shall be provided at connections to each piece of equipment and elsewhere as required for system maintenance. When connecting dissimilar metals, insulating couplings shall be used.

If a reduction in the size of a pipe takes place at an angle, the bend or elbow shall be of the size of the inlet or larger pipe.

8.4.3 Cast Iron Piping

Pipes shall be accurately laid and jointed in accordance with SABS 058.

Spigot and socket joints shall be caulked with hemp rope to half the depth of the socket and completely filled with molten lead in one pour. Other approved caulking compounds may be used if approved by the Engineer.

8.4.4 PVC Pressure Piping

PVC pressure pipe systems shall be laid and jointed in strict accordance with the manufacturer's instructions and recommendations.

8.4.5 Fixing of Pipes

Mild steel pipes less than 50 mm in diameter shall be fixed to walls with galvanized malleable iron "School Board" pattern brackets. Pipes over 50 mm in diameter shall be fixed with galvanized hinged holder bats, fastened with brass pins or bolts. The brackets or holderbats shall be built into the wall with cement mortar. Pipes fixed to timbers shall be secured with strong galvanized iron pipe clips screwed to the woodwork. Pipes laid in clay or in earth with a high acidic level shall be wrapped in "Denso" or other approved wrapping tape.

Cast iron pipes shall be fixed to walls or structures with cast iron hinged holderbats fastened with brass pins, or bolts, fixed into walls with cement mortar, or secured with bolts to wood framing.

Pipe supports shall be spaced at the following minimum distances:

	Horizontal Pipes	Vertical Pipes
For cast iron	1,830m	1,830m
For mild steel		
Up to 20 mm diameter	1,200m	1,830m
From 25 mm diameter up to 40 mm diameter	1,830m	2,450m
From 50 mm diameter up to 100 mm diameter	2,450m	3,050m

Pipes shall be inclined, so that no air can lodge therein and shall generally fall towards the main pipe to ensure complete emptying.

8.4.6 Insulation of Pipes

Insulation of pipes shall be executed where specified with sectional pipe lagging, comprising a compressed resin bonded glass or mineral wool casing covered with hessian or canvas. The running joints shall be secured with clipped-on, galvanized hoop iron bands. Insulation of bends, tees, etc., on pipelines to be lagged, shall be executed with a bandage strip of resin bonded glass or mineral wool wrapped securely around the fitting and covered with an asbestos compound cement.

Where required, exposed hot water pipes shall be insulated to prevent injury.

8.4.7 Gate Valves

Gate valves shall be fitted to service pipes at points of entry to each separate building, or at each separate connection to a building.

Gate valves shall be fitted on branch lines longer than - 3 meters, servicing one or more fixtures.

Gate valves shall be fitted to isolate individual fixtures.

Unless otherwise specified, gate valves shall be the same diameter as the pipe.

8.4.8 Trenching

The sides of trenches for drainage pipes shall be excavated as nearly vertical as possible. Trenches shall not be excavated wider than required to allow adequate working space for laying and jointing the pipes. The bottoms of the trenches shall be evenly graded and firm to the proper inclinations. Should the proper depth of trench excavations be exceeded by carelessness or in error, the Contractor shall, at his own expense, cause such excessive depth to be filled up to the proper level and compacted. Uneven bottoming in rock cutting shall be filled with weak concrete.

All planking, strutting and shoring which may be necessary for maintaining sides of excavation, shall be carried out. Any parts of trenches that fall in through insufficient support will be required to be cut out, if

necessary, to a square section filled with compacted backfilling and the extra excavation and backfilling thereby required shall be filled in at the Contractor's expense.

Trenches shall be kept clear of water during the progress of the work by pumping or other adequate means, where necessary. All drainage sumps shall be sunk clear of the work outside the excavations. The entire expense of replacing or repairing to the satisfaction of the Engineer, any work destroyed or damaged, by rain or flood, shall be borne by the Contractor.

Water pipes laid in ground shall have a clear cover of not less than 500 mm and shall be excavated and backfilled in the same manner as for drainage pipes.

8.4.9 Drain Laying

Drains shall be accurately laid to the lines and gradients shown on the drawings or as directed, with pipes of the diameter as shown. Barrels of vitrified clay pipes shall be rest on solid ground or alternatively, the pipes may be bedded in concrete which is to be haunched up on both sides of pipes once the joints have been made, tested and approved. In all cases the barrels of vitrified clay pipes shall rest on the ground or be bedded in concrete for at least two- thirds the length of the barrels. All vertical bends, gullies, and traps are to be bedded on and encased in concrete. The laying of PVC and pitch-fiber drains shall be in strict accordance with the manufacturer's instructions.

Vitrified clay pipes shall be jointed with a gasket and 2:1 cement mortar as laid down in SABS
Cast iron pipes shall be jointed by caulking with sufficient turns of white hempen yarn to leave unfilled 45 mm depth of socket in the case of 100 mm diameter pipes, and 50 mm depth of socket in the case of 150 mm diameter pipes. These spaces are then to be filled with molten lead and well caulked. PVC and pitch fibre pipes shall be jointed strictly in accordance with the manufacturer's instructions.

Drains shall be provided with all necessary easy bends, junctions, taper pipes, etc., as required. Pipes shall be built into walls of manholes, etc, in 2: 1 cement mortar. Open ends of drains shall be plugged to prevent the entry of soil or mud during wet weather. The drains shall be suitably protected against damage until they have been tested, approved, and covered in. Should they be damaged in anyway, the Contractor shall make good the damage at his own expense.

Where vitrified clay pipes are to be within or connected to a structure, box or manhole, the pipe to be built in shall be a quarter standard length, or shorter if a closure piece is required. To this pipe a half standard length shall be connected followed by standard full length pipes.

Where marked "I.E." on the drawing and at every junction and bend and after all ramps and rodding eyes, inspection (access) eyes shall be provided with stoppers sealed in bitumen.

8.4.10 Back-filling

After drains have been laid and the initial air test successfully carried out, all hand holes shall first be carefully and solidly filled up under and around sockets. The space around and at sides of pipes and above same shall then be filled carefully with clean, soft, loose, soil, well- watered, until a depth of 300 mm has been reached, after which the filling shall be carefully rammed with a wooden hammer.

The filling of the remaining depths of the trenches shall be carried out in 230 mm layers solidly rammed with iron hammers, weighing not less than 5 kg each until the level of the ground is reached. If required, the Contractor is to have the trench soaked with water whilst the filling is being effected. Top soil, or surfacing material, shall be replaced at the top layer of the filling. No pot clay will be permitted to be used for filling. All surplus material shall be carted away (1 km free haul) or spread on site as directed by the Engineer.

8.4.11 Ventilation Pipes

Where shown on the drawings or as required, cast iron or PVC ventilation pipes shall be fixed to walls with hinged holder bats built into walls and carried up not less than one meter above roofs. Ventilation pipes shall be connected below to the drains and roofs shall be cut as required and properly flashed at these intersections.

8.4.12 Construction of Manholes

Manholes shall be constructed in brickwork using NFX type solid clay bricks as detailed on the drawings and fitted with cast iron covers and frames complying with SASS 558 and coated with an approved preservative solution before leaving the manufacturer's works.

8.5 TOLERANCES

Manufacturing tolerances shall be as laid down in the various standard specifications listed in Clause above.

8.6 TESTING

8.6.1 Underground Drains

Upon completion of each drainage connection, it will be inspected by the Engineer and checked for grade, alignment, cleanliness, and appearance of the inner surface. If found to be satisfactory, an air test shall then be applied. The air test will consist of two tests, one before and one after the trenches have been filled in with fine material to a depth of 300 mm over pipe.

Air tests shall be made with an approved air-testing machine and the portion of the drainage connection to be tested shall be closed with expanding plugs or bladders. An air pressure of not less than 40 millimetres head of water shall be applied and the float will be required to stand for one minute. Should any portion of the work fail to pass the test specified, the fault or faults shall be made good by the Contractor at his own expense and the work shall again be tested. No patching up of pipes, joints or connections will be allowed and all defective pipes must be carefully cut out and made good in a proper manner to the entire satisfaction of the Engineer.

After final backfilling, the drain shall be tested by• passing a smooth rubber ball of diameter 12 mm less than the diameter of the pipe, through the pipe to ensure that no obstruction exists. All appliances, labour and materials necessary for testing, shall be provided by the Contractor at his own expense.

8.6.2 Plumbing

Domestic hot and cold water systems shall be flushed out, tested at 700 kPa for one hour and left at supply main pressure for the balance of the construction period.

All outlets of soil, waste and vent pipes shall be plugged and the systems filled with water and individual sections tested with not less than 3 meter water head for one hour with no drop in the water level being permitted.

Plumbing fixtures shall be filled with water and checked for leaks or retarded flow.

All gate valves, taps and similar equipment shall be adjusted to provide for the proper operation of the various systems.

Any leaks and faults found above shall be repaired or replaced and re-tested where applicable.

8.6.3 Costs of Tests

The costs of tests described above shall be borne by the Contractor who shall be deemed to have included these costs in the scheduled rates for plumbing and drain laying.

8.7 MEASUREMENT AND PAYMENT

Measurement and payment of plumbing and drain laying items shall be according to the units and rates determined from the Schedule of Quantities and the rates quoted will be deemed to cover the item of work finished complete in every respect.

9. GLAZIER

9.1 SCOPE

This section of the Specification covers the supply and fixing of glazing.

9.2 MATERIALS

9.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS680 : Glazing putty for wood and steels ashes.

BS Code of : Glazing and fixing of glass for buildings. Practice152

9.2.2 Glass

All glass shall be of such quality that surface deterioration will not develop after glazing. All glass shall be free of bubbles, waviness, scratches, stains and other imperfections.

Unless otherwise specified, sheet glass for glazing shall be fiat drawn clear glass of ordinary glazing quality and of the thickness specified in the following table for the various sizes of glass panes:

Surface Area of Glass Pane	Thickness of Glass
Not exceeding 0,5m²	3mm
Exceeding 0,5m² and not exceeding 1,5m²	4mm

Polished plate glass for glazing shall be transparent polished plate glass of "GG" quality and, unless otherwise specified, shall be 6 mm thick.

Obscure glass for glazing shall be 3 and 4 mm thick "Pacific" or other approved pattern.

Wired transparent glass for glazing shall be 6 mm thick polished "Georgian" or other approved wired glass.

Wired obscure glass for glazing shall be 6 mm thick rough cast "Georgian" or other approved wired glass.

Glass louvre blades shall be 6 mm thick drawn sheet with the exposed edges rounded and smoothed.

9.2.3 Mirrors

Mirrors shall be or the outside dimensions as shown on the drawings and 6 mm thick high Quality polished plate glass with multiple coated copper backing giving a bright silver reflective surface. The edges shall be rounded and polished.

Alternatively, mirrors shall be of 1,2 mm bright polished stainless steel of Grade 18/8 with rounded and smoothed edges.

9.2.4 Putty

The putty shall be delivered to site in sealed containers badged with the SASS mark and the following information clearly legible on the container:

The manufacturer's name or brand name of the product orboth.
The words "Wood-sash glazing putty Type I" or "Steel-sash glazing putty TypeII".
The batch number and the date of manufacture.

Type I putty as specified shall only be used for glazing in wood sashes and Type II for steel sashes.

Where putty is used for glazing in unpainted hardwoods, it shall be tinted to match the colour of the wood.

Putty shall not be too hard or soft or caked when used and shall dry evenly without crazing .; or cracking.

Defective putty shall be cut out and replaced by the Contractor at his own expense, including replacing broken glass and paintwork

9.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

9.4 GLAZING AND FIXING

Industrial type windows shall be glazed from the inside and all other windows from the outside.

Glass shall be cut in panes to suit all glazed openings required, with sufficient clearance all round to prevent cracking by expansion, contraction or vibration. All panes of figured or textured glass shall be uniform in appearance with the pattern parallel to the edges and wire woven glass shall be so cut that the wires are parallel to the edges.

Glass rebates other than in unpainted wood, shall be primed before glazing.

Glass panes exceeding 0,5 m in area, fixed in wood frames without glazing beads, shall be secured in position with glazing sprigs and putty.

Glass panes exceeding 0,5 m in area, fixed in steel frames without glazing beads, shall be secured in position with glazing pegs or clips inserted in holes in the steel frames and putty.

In all cases the glass shall be well bedded and back puttied.

All putty shall be carefully trimmed, cleaned off and be neatly finished off to within 3 mm of the sight lines. The putty shall be straight with smooth surfaces and sharp mitres.

No soft or oily putty shall be covered with paint until it is rectified. All putty shall have formed a surface crust and have a smooth finish before any paint is applied. A paint primer shall be applied as soon as the putty has sufficiently dried out to reduce shrinkage cracks forming.

Glass panes fixed with glazing beads in unpainted hardwood doors or sashes shall be bedded on strips of wash leather, neoprene, felt, velvet or rubber, turned over on both faces of the glass in the rebates, to form a soft packing between the glass and the woodwork.

The edges of all plate glass shall be "blacked" and 6 mm thick float or plate glass shall be glazed in PVC glazing channels.

The whole of the glazing shall be cleaned before the premises are handed over for occupation. Should any glass be cracked or broken prior to handing over the building, the same shall be replaced by the Contractor at his own expense.

Mirrors shall be fixed to walls with four C.P. mirror screws and rubber washers behind, screwed to plugs in the wall.

9.5 TESTING

As the Contractor is fully responsible for ensuring that the quality of all work produced, both in respect of materials used and of workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the Specifications.

9.6 MEASUREMENT AND PAYMENT

The unit of measurement for all glazing work shall be the square metre (m^2) of the specified glass installed and the rate shall include for all supply, cutting, fitting, putty application, priming and cleaning.

10. PAINTER

10.1 SCOPE

This section of the Specification covers all aspects of surface preparation and painting of interior and exterior surfaces such as timber, metal, plaster, concrete and structural steel work as well as the supply of all materials and labour.

10.2 MATERIALS

10.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

Surface Preparation

SIS055900	:	Pictorial Surface Preparation Standards for Painting SteelSurfaces. Primers
SABS312	:	Red lead based primers for structural steel -Type II, Grade II
SABS678	:	Primers for wood for interior and exteriors
SABS679	:	Zinc chromate primers for steel
SABS723	:	Wash primer (metal etch primer)
SABS912	:	Calcium plumbate primer Undercoat
SABS681	:	Undercoats forpaints Finishes
SABS515	:	Decorative paint for interior use
SABS630	:	Decorative high gloss enamel paints for interior and exterior use-Grade I
SABS631	:	Decorative oil gloss paint for interior and exterior use
SABS633	:	Emulsion paints for interior decorative purposes
SABS634	:	Emulsion paints for exterior use
SABS682	:	Finishing paint, aluminium type
SABS683	:	Roof paints -Type B
SABS684	:	Structural steel paint -Type B
SABS801	:	Epoxy-tarpaint
SABS887	:	Varnish for interior use

10.2.2 General

Samples and/or laboratory reports of the materials shall be submitted to the Engineer if and when required.

The Contractor shall provide the following information and details of the paints and decorative materials he proposes to use:

The name of the manufacturer and trade name.

Brand, type or grade of paint.

Manufacturer's data sheets, colour references, instructions for use including surface preparation, sealers, primers, undercoats and finishing coats, all of which shall be considered as being part of these specifications if approved by the Engineer.

Safeguards to protect the applied paint from damage until the work is accepted by the Engineer.

Period of guarantee and details of maintenance, if any, to uphold the guarantee.

Shelf or pot life of materials if applicable.

Where proprietary brands are used, the manufacturer's priming and all subsequent coats of paint suitable for that particular brand shall be employed in accordance with the manufacturer's instructions.

No other materials of a similar character and quality, or another manufacturer may be used instead of those approved, unless permission to do so has been obtained in writing from the Engineer.

All materials shall be brought on to the site in containers sealed by the manufacturer. No paint shall be mixed with another paint of a different quality, type, brand, or colour, or be thinned or adulterated in any way but shall be used as supplied by the manufacturer. Where mixing or thinning is required, it shall be carried out in accordance with the manufacturer's recommendations.

All varnishes and wood sealers shall be approved brands and shall be applied strictly in accordance with the manufacturer's recommendations.

Limewash is to be of 10 parts of fresh unslaked lime; one-and-a-half parts of coarse salt and one part of tallow or boiled linseed oil, all measured by weight. The lime is to be slaked and the salt and tallow or oil are to be well mixed with it whilst it is slaking. After slaking is complete, further water may be added to bring the lime wash to the necessary brushing consistency.

Cement based paint shall be self coloured and waterproof and shall be approved by the Engineer

10.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

10.4 APPLICATION

10.4.1 General

Factory finished products shall not be painted unless otherwise specified.

No paint shall be applied over any surface containing traces of dust, grit, grease, oil, etc., loose rust or mill-scale or corrosion products of – any kind.

All surfaces to which paint is applied shall be free from moisture, Unless otherwise specified, paint shall be applied over dry paint surfaces.

Where surfaces are to be welded, no paint shall be applied within 75 mm of the weld position unless otherwise specified.

Steel embedded in concrete shall not be oiled or painted except to 50 mm below the final level of the concrete.

The paint manufacturer's instructions shall be strictly adhered to.

Each priming coat and each undercoat of painting shall be inspected and approved by the Engineer before any subsequent undercoat or finishing coat is applied.

Each coat of paint shall be a distinctive colour. All colour schemes will be provided by the Engineer and samples of the final colours required shall be submitted to the Engineer for approval and the work shall then be finished to the colour or colours as approved and may include different colours and adjoining surfaces, and the Contractor must allow in his prices For painting of walls, etc., in different colours. Where different colours of paint finishes meet at external or internal angles, projecting rails, V-grooves, frames, steel windows, etc., no item for "cutting in" will be measured.

All metal fittings and fastenings shall be removed before the preparatory processes are commenced. On completion the metal fittings and fastenings shall be cleaned and rectified in position.

10.4.2 Inspection

All surfaces to be treated shall be carefully inspected by the Contractor, who shall satisfy himself that the surfaces are in a perfect state to receive the paint or corrosion protection specified. No claim will be entertained arising from defective work as a result of a paint failure due to not strictly insisting on receiving from other trades, surfaces in a proper condition, fit to receive the type of paint specified.

10.4.3 Preparatory Work

Where necessary, surfaces shall be thoroughly washed to remove all traces of soluble salts, grease, and corrosive air-borne contaminants prior to painting, dried and painted immediately thereafter.

Welds and adjacent parent metal shall be deslagged, inspected and approved and all spatters shall be removed prior to painting.

The weld area shall be abrasive blasted and/or ground and all contaminants such as flux shall be removed prior to painting.

Steel surfaces which are to rest on concrete or other floors shall receive the full paint system prior to erection.

Damaged paint areas of steel surfaces shall be cleaned, rust spots removed and spot priming carried out such that the patch painting extends 20 mm beyond the damaged areas.

Where the shop coat to steel surfaces is allowed to age for a few months before painting, light sanding or rubbing with steel wool or scrubbing with clean water using a bristle brush, shall be carried out.

All metal surfaces being painted shall be cleaned of all rust, scale and dirt by scraping or by means of steel wire brushes; also all oil and grease shall be removed and a perfectly clean surface obtained. If necessary, the surface shall be degreased immediately before applying the priming coat, with a suitable alkaline detergent solution and then thoroughly rinsed and allowed to dry; any salt deposits on the metal surfaces as may occur in industrial and marine atmospheres shall be similarly removed before priming.

New galvanised metal surfaces of all non-ferrous metals, which are to be painted, shall be cleaned down as above and given one coat of primer.

After cleaning off rust on metal work, those portions so affected shall be treated with an approved rust inhibitor.

Before painter's work internally is commenced all floors shall be swept clean and dirt and rubbish removed, and the rooms left practically free from dust, dust-free conditions being maintained during the progress of the work.

All plastered wall, ceiling and similar surfaces shall be perfectly dry and in a fit state to receive the finishing, before the work is put in hand.

All surfaces shall be properly prepared before painting, staining, etc. Each coat of paint excepting the last shall be rubbed down with a fine glass paper before the next coat is applied.

All surfaces not being painted such as face brickwork, window sills, floors, and stained woodwork, shall be covered up and protected against paint spots before any painting is commenced.

All plastered wall, ceiling and such like surfaces being painted shall be filled where necessary with suitable stopping or patching plaster, and the whole rubbed down ready to receive the finishing.

Boarded ceilings and cornices being painted shall be filled where necessary with suitable stopping.

Woodwork being painted shall be well sandpapered down, knots treated with knotting, and all surfaces primed, stopped with hard stopping and rubbed down to an even surface ready to receive the paint.

Woodwork being varnished, sealed or stained shall have all plaster stains, pencil marks and other surface discolouration and blemishes carefully removed, and stopped with tinted stopping and well rubbed down.

Nail holes, etc., shall be cleaned out and stopped with an approved filler or stopping after the priming coat of paint.

Backs of timber door frames and similar frames and surfaces of other new or re-fixed joinery in contact with brickwork, etc., and built in as the work proceeds, shall be primed before building in whether the articles are to be painted or not, to prevent moisture seeping into the wood from the mortar bedding.

Tongued, grooved and rebated edges of boards in batten doors and other such like inaccessible parts of joinery shall, before the joinery is assembled, be primed, or where the joinery is to receive a finish other than paint, be given one coat of such other finishing material.

Priming to external structural timbers shall be applied before the timbers are fixed in position, and shall include all wrot surfaces such as backs of fascia and barge boards.

10.4.4 Workmanship and Finishes

Paint may be applied by spray, brush or roller depending on the materials used, the surface to be painted, and the manufacturer's instructions. In cases where spraying is permitted, all surrounding surfaces shall be properly masked and an approved water trap and air regulating valve shall be furnished and installed on all equipment used in spray painting.

Every coat of paint, irrespective of method of application, shall be adequately and permanently keyed or bonded to the base material or previously applied coat, and shall be evenly distributed, continuous, free from sags, runs, brush marks, pin holes, or other imperfections, and shall dry to a smooth film.

The Contractor shall protect all parts of the structure or fittings against disfigurement by spatters, splashes, and smirches of paint or of paint materials. The Contractor shall be responsible for any damage, paint or dirt caused by his operations to vehicles, persons or property, and he will be required to provide protective measures to prevent such damage and make good where required at his own expense.

Any paint stains which may result in an unsightly appearance shall be removed or obliterated by the Contractor at his expense.

If passing traffic creates sufficient dust to harm or spoil the appearance of painted surfaces, the Contractor shall sprinkle the adjacent roads and shoulders with water at his expense, for a sufficient distance on each side of the location where painting is being done, to keep dust away from freshly painted surfaces. The Contractor shall also furnish and post at his own expense "DRIVE SLOWLY" signs and take other necessary precautions to prevent dust and dirt from adhering onto freshly painted surfaces.

Tinting of undercoats shall be done to distinguish the number of coats applied, or when a light colour has to be applied to a dark surface.

Where white or off-white colours are being used, an additional finishing coat shall be required. The final coat or finishing coat of paint shall be applied after all other work in the building is completed, unless otherwise specified.

The painter shall keep some of the final paint in reserve, in the event of having to make good any patching which may be required as a result of damage or unforeseen circumstances.

Upon completion, the Contractor shall clean all glass, remove all paint spots from walls, floors and fittings and leave the premises clean and fit for occupation.

All inflammable materials, comprising of solvents, thinners, wiping cloths, etc., shall be placed in tightly closed containers and properly disposed of.

10.4.5 Painting of Plaster, Concrete or Brick Surfaces

10.4.5.1 Surface Preparation

Surfaces for painting shall be prepared by means of sandpapering, scraping or wire brushing to remove loose material, dust, laitance, scum or other deleterious materials or high spots. Defects shall be cut out where necessary, and made good with an approved non-shrink filler. Cracks shall be cut out, suitably keyed, and given a coat of approved bonding agent of paint before the filler is applied. All patches shall be rubbed down to an even surface. Surfaces shall be washed and allowed to dry.

All exposed metal, nails, screws, etc., shall be prepared by removing all rust, then painted with zinc chromate primer, followed by a universal undercoat.
All surfaces shall be thoroughly dry before painting.

10.4.5.2 Paint Application

For emulsion painted surfaces (PVA or acrylic), the paint shall be applied in two finishing coats on one full filler coat at the correct consistency and shall not be watered down at all.

Eggshell-finish (alkyd oil based), gloss oil paint or enamel gloss paint shall be applied as follows: One full coat of alkali resistant sealer followed by one coat of universal undercoat. Two finishing coats of semi-gloss eggshell, or gloss oil paint or enamel gloss paint shall then be applied. The finishing coat for shower walls shall be one coat of epoxy paint except where otherwise called for.

10.4.6 Painting of Woodwork

10.4.6.1 Surface Preparation

The moisture content of the timber shall not be more than 20% at the time of applying the first coat.

All cracks, shakes or scars shall be filled flush before painting.

The surfaces shall be cleaned, sandpapered and rubbed down to a smooth, even face before painting. Each successive coat of paint shall be rubbed down to a smooth surface before the next coat is applied.

10.4.6.2 Primer Application

One coat of wood primer shall be applied.

After the open grain timber and plyboard have been prepared and primed, the grain shall be stopped and filled with synthetic filler and rubbed down with water paper

All new woodwork shall be properly primed on all surfaces and edges, before being fixed in position. All woodwork not previously painted, shall be given a prime coat, well brushed in.

10.4.6.3 Paint Application

One coat of universal undercoat shall be applied. Two finishing coats of gloss oil paint or enamel gloss paint or semi-gloss eggshell (alkyd oil based) paint shall then be applied.

10.4.6.4 Varnish Application

After surface preparation has been carried out, interior woodwork (e.g. doors, etc.) shall be treated with three coats of approved mat varnish, sanding between coats.

10.4.6.5 Wood sealing

After surface preparation has been carried out, woodwork shall be treated with three coats of approved wood sealer, sanding between coats.

10.4.6.6 Creosoting

All externally exposed roof timbers shall be treated with two coats of approved creosote wood preservative, before roof cladding is fixed into position. The same treatment is to be applied to roof timbers before being built into walls.

10.4.6.7 Painting of Metal Surfaces

10.4.6.7.1 Surface Preparation

The preparation of metal surfaces shall comply with the Swedish Standard SIS 05 59 00, Pictorial Surface Preparation Standards for Painting Steel Surfaces and shall receive the greatest care to ensure rust free conditions prior to the application of paint and corrosion protection systems.

All surfaces shall be prepared by removing loose paint, rust, plaster, scale, dust, dirt, greases, etc., and by repairing or patching the defective surfaces before painting or repainting.

Damaged shop primed surfaces shall be thoroughly cleaned of rust and patched with a prime coat.

10.4.6.7.2 Paint Application

Iron and Steelwork

All iron and steel work shall be properly primed with a red lead based primer where steel work is likely to be exposed to the elements for longer than 30 days or coastal conditions. Zinc chromate primer may be used elsewhere where over painting will be completed within 30 days after priming. Metal etch wash primers may be used under dry conditions where over painting will completed within 24 hours after priming. After priming, one coat of universal undercoat shall be applied. If necessary, the undercoat shall be tinted to a shade just lighter than the desired finish, using approved liquid stainers. The two finishing coats shall be gloss or matt of alkyd resin based synthetic enamel or oil based enamel paint.

Galvanised Iron and Steel

All traces of protective coating shall be removed with galvanised iron cleaner. One coat of calcium based etch primer shall be applied. One coat of tinted universal undercoat and two finishing coats of alkyd resin based synthetic enamel gloss paint shall be applied.

Non-ferrous Metals

Surfaces of aluminium, copper, etc., shall be prepared and cleaned, and one coat of self- etch zinc chromate wash primer shall be applied. One coat of universal tinted undercoat and two finishing coat of enamel gloss paint shall then be applied.

10.4.6.8 Painting of Asbestos-Cement Items

10.4.6.8.1 Surface Preparation

Surfaces to be painted shall be exposed to the air while drying out after having been thoroughly scrubbed and shall be thoroughly dry before painting.

Treatment of the surface with hydrochloric acid or zinc sulphate shall not be permitted.

10.4.6.8.2 Primer Application

One coat of alkali resistant primer shall be applied.

10.4.6.8.3 Paint Application

Two finishing coats of PVA or acrylic paint shall be applied or two coats high gloss enamel on one undercoat.

10.4.6.9 Painting of Hardboard

10.4.6.9.1 Surface Preparation

All surfaces shall be clean and dry before painting.

10.4.6.9.2 Primer Application

One coat of hardboard primer shall be applied.

10.4.6.9.3 Paint Application

One coat of universal undercoat shall be applied followed by one or two coats of enamel gloss paint.

Two coats of green school-board paint shall be applied to blackboards.

10.5 TOLERANCES

The total dry film thickness shall in no place be less than 0,10 mm when applied by either brush, roller or spray-gun.

10.6 TESTING

As the Contractor is fully responsible for the quality of all work produced, both in respect of materials used and workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the specifications.

10.7 MEASUREMENT AND PAYMENT

Painting of structural steelwork will be measured per metric ton (t) of steelwork painted. No deduction will be made for surfaces required to be left unpainted. The rates entered by the Contractor in the Schedule of Quantities for cleaning and painting of structural steelwork will be deemed to be fully compensation for all material and labour in the preparation of surfaces, priming (excluding shop preparation and priming), painting, repair of damaged areas and final repainting after erection, complete.

11. ASPHALTER AND WATER PROOFER

11.1 SCOPE

This section of the Specification covers the supply and application of damp-proof courses, waterproofing of basements, vaults, stanchion bases, parapet walls and roofs. It also covers joint fillers and sealers.

11.2 MATERIALS

11.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS92	:	Bituminous roofing felt
SABS248	:	Bituminous damp proof courses
SABS297	:	Mastic asphalt for roofing
SABS298	:	Mastic asphalt for dampproof courses and tanking
SABS317	:	Industrial bitumens
SABS952	:	Polythene sheet

11.2.2 Joint Filler

Joint filler shall be "Expandite Flexcell" expansion joint filler or approved equal impregnated fibre board.

The positions and dimensions of the joint filler shall be as detailed on the drawings.

11.2.3 Joint Sealer

Joint sealer shall be "Thiofiex 600" or an approved equal poly sulphide sealer.

The positions and dimensions of the joint sealer shall be as detailed on the drawings.

11.2.4 Polythene Sheeting

Polythene sheeting shall be to the thickness as indicated on the drawings and of manufacturer's approved by the Engineer.

11.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

11.4 CONSTRUCTION

11.4.1 Concrete Surfaces

11.4.1.1 Preparatory Work

All surfaces which are to be damp-proofed or waterproofed shall be dry and cleaned of all loose, flaky material, dust, shutter release oil or other substances which may affect the bonding of damp-proofing materials to the surface.

Laying operations shall not be undertaken on surfaces which are not thoroughly dry or during rainy, damp, frosty or other inclement weather, or where such weather can reasonably be expected within the following 24 hours.

11.4.1.2 Laps in Materials

To ensure that each successive application bonds soundly with previous work, damp-proof material shall be laid with not less than 75 mm laps in vertical work and 150 mm laps in horizontal work.

Laps shall be provided at all internal angles or corners.

Laps are the distances by which abutting edges in successive layers of damp-proofing materials are staggered.

11.4.1.3 Mastic Asphalt

Mastic asphalt shall be applied hot and in the following thicknesses:

Not less than 30 mm thick, applied in three layers on horizontal surfaces for tanking, basements, vaults and stanchions bases below ground level.
Not less than 20 mm thick, applied in two layers on horizontal surfaces on tops of walls and concrete beds above ground evel.

Not less than 20 mm thick on vertical surfaces for basements, vaults and stanchion bases below ground evel.

Not less than 13 mm thick on vertical surfaces. of walls above ground level.

Surfaces that are to be treated with mastic asphalt shall have the individual layers applied in their entirety before additional layers are applied.

Warm, clean and properly made joints shall be made between horizontal and vertical asphalt, with two-coat angle fillets at all internal angles or corners.

11.4.1.4 Protection from Water Pressure

Damp proofing shall be protected from water pressure by maintaining the external water table at 0,3m below the level of the base concrete during the progress of the work.

The application of materials to wet surfaces shall be avoided.

Dewatering shall be maintained until the damp-proofing work is complete and temporary sumps have been filled and sealed.

11.4.1.5 Tanking to Basements

A horizontal damp-proof course shall be laid over the whole area of the basement floor on a concrete bed prepared as indicated on the drawings, in three layers laid with 150 mm laps and carried through walls to connect with the vertical damp-proof course.

The faces of basement walls shall be covered with a vertical damp-proof course applied in three layers with 75 mm laps.

Vertical damp-proofing shall be carried up to a minimum height of 150 mm above ground level, or over the tops of vaults, under paving where these occur, and connected to the horizontal damp-proof course in walls to form a complete tank to the basement.

11.4.1.6 Tanking to Stanchion Bases

Three layers of horizontal damp proofing shall be laid on the prepared surface forming the base to pits for stanchion bases.

Two layers of vertical damp proofing shall be fixed to the inner faces of the pit.

The provisions specified in above, Tanking to Basements, shall also apply to tanking to stanchion bases.

Damp proofing shall be continuous at joints, cross walls, etc.

11.4.1.7 Asphalt Roof Waterproofing

The concrete roof shall be primed with a suitable bonding primer before the asphalt waterproofing is laid.

20 mm of asphalt waterproofing shall then be laid in two layers in bays.

The edges of the second layer shall not coincide with the edges of the first layer.

The edge of unfinished or existing work shall be cleaned and warmed before fresh material is laid against it.

Asphalt fillets and skirtings shall be provided at vertical surfaces and joints in brickwork shall be raked out and enlarged for the turn-in of the asphalt where required and pointed with cement mortar.

Where applicable, the asphalt shall be turned down over the edges of the roof. Care shall be exercised to maintain the specified asphalt thickness throughout.
The completed asphalt shall be painted with two coats of bitumen-based aluminium paint. A minimum slope of 1 % shall be maintained on all roofs.

11.4.1.8 Bitumen Rubber Latex Roof Waterproofing

The surface of the concrete roof slab shall be thoroughly cleaned to remove all dirt, dust, scale or grease.

The concrete roof slab shall be primed with an approved diluted rubber bitumen primer at the rate of 0,3 litre/m, or at the manufacturer's recommended rate.

After the primer is dry, the first coat of bitumen rubber latex emulsion shall be applied with not less than 10 percent rubber, at the rate of 1,5 litre/m, or at the manufacturer's

recommended rate. While the emulsion is still tacky, a layer of fibreglass ("L" staple 0,5 mm thick) shall be bedded onto this emulsion and all air pockets shall be removed.

When the first coat is almost dry, a second coat of the emulsion shall be applied at the rate of 1,2 litre/m, or at the manufacturer's recommended rate. While this emulsion is still tacky, a second layer of fibre glass ("L" staple 0,5 mm thick) shall be bedded onto the emulsion making sure that all air pockets are excluded.

When the second coat is almost dry, a third coat of the emulsion shall be applied at the rate of 1,2 litre/m, or at the manufacturer's recommended rate.

While this final coat is still tacky, it shall be blinded with a single sized fine aggregate (washed stone chips) passing a 5 mm sieve but retained on a 3 mm sieve, at the rate of 0,003 m/m (5 kg/m) or at the manufacturer's recommended rate.

When this final coat has dried, the roof shall be lightly brushed to remove any loose chips and then one coat of bitumen based aluminium paint shall be applied at a rate of 0,4 litre/m.

All timber battens, fillets, corrosion resistant sheet metal for welted aprons, drips or flashing shall be provided and fixed with corrosion resistant nails, bolts, etc.

11.4.1.9 Polyethylene Sheeting under Concrete Surface Beds

Where shown on the drawings, the finished soil surface shall be covered with an approved polyethylene sheeting 0,25 mm thick, or as otherwise specified.

The sheeting shall be laid flat and smooth and shall be free from folds or rips.

Joints in the sheeting shall be heat-welded together or joined together with an approved adhesive to form watertight seams.

Care shall be taken when placing concrete or bricks not to displace or damage the sheeting in any way.

If the sheeting is damaged, the damaged area shall be patched and joined so as to be watertight.

11.4.1.10 Polyethylene Sheeting under Concrete Roof Tiles

For concrete tiled roofs of pitch less than 30< to the horizontal, an approved polyethylene sheeting 0,25 mm thick or as otherwise specified, shall be installed over common rafters and under battens to receive tiles all in accordance with the recommendations of the manufacturer.

11.4.1.11 Protection from Traffic

Where regular maintenance crews or other foot traffic on roofs must be provided for, the waterproofing shall be protected by means of 20 mm thick tiles or slates set in mastic, with joints solidly filled with a 1:3 cement: sand mortar or mastic.

Expansion joints shall be provided in walk ways to form bays not exceeding 8 m.

11.4.2 Damp Proofing to Walls

Black embossed polythene material to SABS 952, Type B with a minimum thickness of 375 micron must be used for all damp-proofing. It shall be laid without longitudinal joints on the full thickness of all foundation walls as well as under upper floor external walls. At ends, angles and intermediate junctions, the material is to be lapped 300 mm. Damp-proofing is also to be placed one course below external windowsills and bent up with an easy bend and tucked under window frames. For cavity wall construction, damp-proofing shall in addition be used at side reveals and lintels of all external doors and widows.

Where the ground level is above the internal floor level, or where necessitated by differences in ground levels, two layers of vertical damp-proofing shall be fixed to the outer faces of external wells. The vertical damp-proofing shall be connected to the horizontal damp proofing with 75 mm laps.

11.4.3 Expansion Joints

Where a concrete roof has expansion joints, a raised kerb shall be provided with an approved metal hood covering or a metal roll flashing of corrosion resistant material, with suitable welted

joints, drips and saddle pieces all neatly soldered where required. Suitable fixing clips, nails, bonding material, membrane, etc. shall be used at the expansion joints.

Where expansion joints have to be constructed elsewhere in concrete and brickwork, these shall be formed with joint filler. Raking out, cleaning, priming, and sealing of these joints shall be done in strict accordance with the manufacturer's instructions.

11.5 TESTING

As the Contractor is fully responsible for the quality of all work produced, both in respect of materials used and of workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the Specifications.

11.6 MEASUREMENT AND PAYMENT

Measurement and payment for all items under this section shall be according to the units and rates determined from the Schedule of Quantities and the rates will be deemed to cover the items of work finished complete in every respect.

12. IRON MONGER AND METAL WORKER

12.1 SCOPE

This section of the Specification covers the supply and building in of materials described under iron monger, founder, and smith and Includes:

Pressed steel doorframes
Steel doors and frames
Standard industrial and residential and special steel windows including fasteners and fittings
Locks and hardware
Miscellaneous fittings.

12.2 MATERIALS

12.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS4 : Door locks
SABS727 : Steel windows and steel doors
SABS064 : Preparation of steel surfaces for painting
CKS79 : Pressed steel doorframes

12.2.2 General

All ironmongery shall be of the best quality and as detailed on the drawinqs or described in the Schedule of Quantities and shall be fixed complete with matching screws of similar metal.

All steel and iron work shall be delivered clean and free from rust, pitting or other defects. Shop primers shall be applied before delivery and shall consist of two coats of primers or other approved anti-rust paint on all surfaces and care shall be taken that defects are eliminated before priming.

Where galvanised steel doors, door frames and windows are called for, these shall be of a quality suitable for hot-dip galvanising. They shall be free from defects that preclude compliance of a zinc coating and from scale, paint or other coatings that are not removable by alkali cleaning or acid pickling. The thickness of zinc coatings shall be 45 microns minimum or the equivalent mass per unit area of 315 grams/m.

After approval of a product, the Contractor shall restrict himself to the use of that product for the duration of the Contract unless otherwise approved by the Engineer.

12.2.3 Pressed Steel Door Frames

Pressed steel door frames shall comply with CKS 79 and shall be manufactured from 1,6 mm thick mild steel sheet, pressed to the required shapes, properly mitred, welded, reinforced at angles, with all welding neatly cleaned off on all faces.

Frames for swing doors shall have the jamb curved in the centre to suit the rounded edge of the door. The head of the frame shall be plain.

Frames shall be of the widths required to suit the thickness of the walls into which they are built.

Frames shall be fitted with suitable tie bars and braces at the bottom, and lugs shall be provided for building in three (3) to each jamb or frames without fanlights and four (4) to each jamb of frames with fanlights.

Where fanlights are shown over doors on the drawings, the frames shall be fitted with pressed metal transoms, properly fitted and welded to the frames. The transoms shall be rebated as necessary for the door and fanlight.

Rebates in frames and transoms for doors and fanlights shall be of the width required to suit the thickness of the doors and fanlights.

Frames for all doors, except swing doors, shall be fitted with rebates in both jambs and head and a pair of 100 mm steel butt hinges welded to frame.

Transoms to bottom hung fanlights shall each be fitted with a pair of 75 mm steel butt hinges welded to frame.

Heads of frames or transoms over swing doors shall be prepared to receive the tops of spring hinges and shall be drilled and tapped for the fixing screws.

Heads of frames or transoms over double doors shall be drilled where required to form keeps for bolts and shall be fitted with one (1) rubber buffer for each leaf of the door.

Frames shall be drilled and tapped where required for screws, fixing fanlight openers, spring-catch keepers, etc.

Where fixed fanlights occur, the frames shall be drilled and tapped in the rebates for the screws securing the fanlights.

Frames for single doors shall be fitted in one (1) joint with approved chromium plated, or other specified, adjustable striking plate keeper, boxed in at the back of the frame with a welded on sheet metal box. The frames shall be fitted with a minimum of two (2) rubber buffers.

Door frames as specified, shall be ordered prepared for the specific type of hinge, lock keep, etc., to be used, and frames shall be cut out or recessed at these points, with back plates welded on, drilled and tapped to fix the specified fitting.

All frames shall be supplied complete with adjustable striking plates and rubber buffers in rebates.

12.2.4 Electrical Switch room Ventilators

Ventilators shall be standard factory steel units, standard type ALU (900 x 745 mm) or BLU (1590 x 745 mm) as indicated on the drawings.

The frames shall comply in all respects with the requirements for pressed steel door frames. The frames shall be built into walls, with two suitable lugs on either side.
The frames shall be fitted with mild steel blades of approved manufacture and pattern welded to the pressed steel frame.

An approved non-corrosive insect-proof screen shall be fitted in an approved manner to the frame of each ventilator.

12.2.5 Electrical Switch room Doors

Electrical switch room doors shall be framed, ledged and braced batten hardwood doors.

Each electrical switch room door shall be fitted with a five pin cylinder rim night latch of approved manufacture.

Where electrical switch room doors consist of two (2) leaves, one (1) leaf shall be fitted with an approved five pin cylinder night latch and the other leaf shall be fitted with barrel bolts top and bottom, and a striker plate shall be fitted to its reveal.

Each electrical switch room door shall be fitted with 100 mm "Boustred B657" chromium plated brass flush handle, or approved equal, on the outside of the door.

12.2.6 Vertically Opening Steel Sliding Doors

Vertically opening steel sliding industrial doors shall be "Henderson Slide-over" doors or approved, equal.

The component parts of the doors shall be dimensioned according to the manufacturer's recommendations for the weights and sizes of the doors shown on the drawings and shall be as detailed below.

Door sections shall be cold-rolled 0,63 mm thick galvanised steel sheet, ribbed and grooved for maximum strength.

Intermediate stiles shall be ribbed for reinforcing and formed from 1,6 mm thick galvanised steel.

End stiles shall be of channel section, formed from 1,6 mm thick galvanised steel. Double end stiles shall be used for wide and/or heavy doors.

Hinges and roller holders shall be of galvanised steel. Hinges shall be located between every door section on the intermediate stiles. Adjustable roller holders shall be assembled with hinges on the end stiles.

Vertical and horizontal side tracks shall be cold-rolled from galvanised steel, welded to galvanised steel reinforcing angles and jamb-mounting angles.

Head plates shall be paint-finished steel plates welded to the horizontal tracks. The head plate assembly shall incorporate a grease-packed bearing for the location of the cross shaft.

Cross shafts shall be 25 mm diameter bright steel bars.

Bracing shall be required for certain wide and/or heavy doors and shall consist of a deep-rolled galvanised steel brace, spanning the door sections and bolted internally to the stiles.

Roller wheels shall be of hardened steel, mounted on grease-packed ball bearings, and their diameter shall match the size of tracks used. The spindles shall be fully floating in their holders and the lengths of the spindles shall depend on whether single or double end stiles are specified.

Counterbalance torsion springs shall be helically wound from high tensile steel wire and be purpose made for each individually weighed door. The springs shall be mounted on cast iron end and winding plugs.

Cable drums shall be helically grooved die-cast aluminium drums, keyed to the cross shaft and locked with set screws. The drums shall be selected to match the vertical lift and travel of the door.

Cables shall be preformed galvanised wire of a diameter which will give a minimum safety factor of eight (8) to one (1) for all door weights.

Doors shall be supplied complete with lifting handles, step-plates, pull-down chains, or chain hoists, bumper springs, and spring door-holders to secure the top section against the head jamb.

Each, door shall be fitted with two padbolts, one on either side securing into the vertical side tracks, and one padlock per padbolt.

All bolts, nuts and screws shall be of galvanised steel.

The weather strip fitted to the bottom of the doors shall be vinyl or other approved material which is unaffected by oil or grease. The weather strip shall be a one piece moulding held in place by a retaining strip.

Where indicated on the drawings, vision panels shall be watertight, 600 mm x 180 mm nominal size, 5 mm thick glass fitted in neoprene seals.

12.2.7 Horizontally Opening Steel Sliding Doors

Horizontal sliding steel doors shall be constructed similar to "Robertson Q-Doors".

The doors shall be constructed from "Robertson galvanised steel pressed Q-panel sections" or approved equal, bolted together and bolted to 70 x 70 x 6 mm structural steel angles at the top and bottom of each door.

"Helm" sliding door gear or approved equal, shall be fitted to the top and bottom of the doors. The sizes and series types shall be as indicated on the drawings, and the bottom guide rail shall be flush with the floor.

12.2.8 Steel Window Frames

All steel window frames shall comply with SABS 727 and shall be of the type and sizes shown on the drawings.

Standard and purpose-made residential type steel window frames shall be constructed from rolled mild steel residential sections, 25 mm wide by 3 mm, welded at angles and properly jointed at intersections.

Standard and purpose-made industrial type steel window frames shall be constructed from rolled mild steel industrial sections 35 mm wide by 3 mm thick, with opening sections constructed from standard residential sections 25 mm wide by 3 mm thick, welded at angles and properly jointed at intersections.

Window frames shall be formed perfectly flat, truly square, properly jointed at all angles and the opening portion must fit properly on all faces and open and close freely.

Glazing bars shall be continuous with jointed intersections, the ends being neatly scribed and fitted to the frames and with the shouldered ends passed through the frame and securely welded in position.

Frames shall be fitted with standard fixing lugs, unless otherwise shown on the drawings.

Opening sections shall open as indicated on the drawings and shall be fitted with steel butts with brass pins. Pivoting sections shall be fitted with bronze ring centres. All inaccessible windows shall be fitted with projecting butts to facilitate cleaning of the windows from the inside.

Side hung or top hung opening sections shall be fitted with brass handles and friction stays. Bottom hung sections shall be fitted with friction pivots and spring catches.

Weather bar drips shall be attached to the fixed frames, for the complete width of the window at the head of outward opening sections, or at cills of inward opening sections and attached to the opening frame.

Composite windows may either be delivered completely assembled with mullions and transoms or as separate units for assembly on site, but "one piece" construction shall be preferred.

Where windows are to be fitted with burglar bars, these burglar bars shall be of standard pattern bars, welded at all intersections, flattened and drilled at the ends and screwed to the window frames. Only opening sections are to be fitted with burglar bars.

Permanent louvered window ventilators shall be standard factory units with mild steel blades of approved manufacture and pattern welded to residential type window frames and with a fine gauge expanded metal screen welded to the frame to prevent the entry of insects.

12.2.9 Combination Units Comprising Steel Framed Doors, Windows, Sidelights and Fanlights

Combination units shall comply with SASS 727 and shall be of approved manufacture and design. They shall be constructed from rolled mild steel sections, properly mitred and welded at angles with the welding cleaned off smooth on all faces.

Door frames shall be constructed from universal sections 30 mm wide by 4 mm thick.
Frames for windows, sidelights and fanlights shall be constructed from standard residential section 25 mm wide by 3 mm thick.

All opening sections shall fit perfectly on all faces and shall open and close freely without binding at any point.

Side hung sections shall open to at least ninety (90) degrees and top hung sections to at least eighty (80) degrees Bottom hung sections shall open to at least thirty (30) degrees and shall be fitted with concealed opening stays.

Side hung sections in windows not readily accessible for cleaning, shall be hung on cleaning hinges.

Suitable weather bars shall be provided where necessary to render the doors and windows perfectly watertight.

All handles, stays, catches and other fittings shall be best quality die-cast brass unless otherwise specified. The fittings shall be approved before being fixed in position and shall be secured with set screws.

The frames shall be provided with fixing lugs on each jamb, one near the top, one near the bottom and not more than 750 mm apart in between. Where the frames are to be fixed in timber frames or to plugs in concrete columns, etc., the steel frames shall be drilled and countersunk for fixing screws at similar spacing.

Windows exceeding 1,0 metre wide, but not exceeding 2,0 metres wide, shall be provided with a fixing lug or a countersunk hole in the centre of the top and bottom of the frame. Windows exceeding 2,0 metres but not exceeding 3,0 metres in width shall be provided with two (2) lugs or countersunk holes at the top and bottom of the frame. For every additional 1,0 metre in width of the window, either an additional fixing lug or a countersunk hole shall be provided in the top and bottom of the frame.

Standard and purpose-made windows shall be of "one piece" construction wherever possible.

Where two (2) or more windows are to be coupled together, the coupling shall be effected with standard coupling mullions and transoms as necessary.

Coupling mullions shall project not less than 50 mm at tops and bottoms or as shown on the drawings for building into lintels and sills.

Before leaving the works of, the manufacturer, the units shall be cleaned by acid pickling, rinsing, and drying in accordance with the requirements of SABS 064. They shall then be primed with a red oxide primer using the double-dip process, with the article being suspended from the diagonally opposite corner for the second dip.

The overall sizes of the units shall be as shown on the drawings.

12.2.10 Door Locks

All door locks shall comply with the requirements of SABS 4 and shall be of approved manufacture and pattern.

All locks shall be supplied with two (2) keys.

Each key shall be distinctly numbered with consecutive numbers and each key shall be stamped with the same number as that of the lock which it controls.

No two (2) locks in anyone building shall have the same key.

Unless otherwise specified, all internal doors shall be fitted with two (2) lever mortise locks which shall' not be master-keyed.

Unless otherwise specified, external doors to changing and mess facilities shall be fitted with two (2) lever mortise locks which shall not be master-keyed.

Unless otherwise specified, external doors to workshops and buildings shall be fitted with four
(4) lever heavy-duty mortise locks that shall be master-keyed.

External doors to electrical switch rooms shall be fitted with a five-pin cylinder rim night latch.

All night latches on electrical switch room doors, or where specified, shall be supplied with "all to pass keys" stamped with a number. All keys and night latches shall be stamped No.1.

Each building shall have different lock numbers and master keys from the other buildings except for those buildings that house only electrical equipment. These shall be fitted with night latches having the same "all to pass keys" as the electrical switch room doors and all keys and night latches shall be stamped No.1.

A schedule of the suiting and master keying of the locks shall be prepared and supplied to the Engineer.

Door handles shall be cast zinc or anodised aluminium of approved manufacture and pattern "as called for in the Schedule of Quantities.

12.2.11 Padlocks

Padlocks shall be solid cast brass cylinder padlocks of approved manufacture and pattern. No two (2) padlocks on one (1) building shall have the same key.

12.2.12 Barrel Bolts

Barrel bolts shall be of solid chromium plated brass of approved manufacture and pattern. The sizes and positions of the barrel bolts shall be as shown on the drawings or as indicated in the schedules.

12.2.13 Pad Bolts

Pad bolts shall be of galvanised mild steel of approved manufacture and pattern. The sizes and positions of the pad bolts shall be as shown on the drawings or as indicated in the schedules.

12.2.14 Hasps and Staples

Hasps and staples shall be of galvanised mild steel or brass of approved manufacture and safety pattern.

The sizes and positions of the hasps and staples shall be as shown on the drawings or as indicated in the schedules.

12.2.15 Indicating Bolts

Indicating bolts shall be of chromium plated brass of approved manufacture and pattern. The engaged/vacant mechanisms shall only display coloured indicators.

12.2.16 Door Hinges

Door hinges in wooden frames shall be "Boustred No. 398" (PWD 34) or approved equal. The hinges shall be solid drawn brass butt hinges, 100 x 75 x 3 mm, fitted with double steel washers between the leaves on a 6 mm diameter steel pin. Each leaf of the hinge shall have four 6 mm diameter countersunk holes.

Where fitted to wood, the hinges shall be attached using suitable brass countersunk wood screws.

Where fitted to steel, the hinges shall be attached using suitable brass countersunk bolts.

12.2.17 Overhead Door Closers

Door closers shall be of approved manufacture and pattern. The finish of the door closers shall be a gold bronze.

Light duty door closers shall be fitted to internal doors. Heavy-duty door closers shall be fitted to external doors.

The position and type of door closer, whether single control, dual control or delayed action. shall be as shown on the drawings or as indicated in the Schedules.

12.2.18 Hat and Coat Hooks

Hat and coat hooks shall be "Boustred No. B 810" or approved equal.

The hooks shall be solid cast chromium plated brass, fitted with a rubber buffer.

12.2.19 Towel Rails

Towel rails shall be of approved manufacture and pattern, 20 mm diameter x 610 mm long, of chromium plated brass complete with suitable chromium plated brass brackets.

12.2.20 Miscellaneous Fittings

All fittings such as retaining devices, etc. shall be of solid cast brass, plated as required, and of the pattern indicated on the drawings or in the schedules. Where no specific pattern is indicated, the fitting shall be not less in quality than that described as PWD pattern. All fittings shall be secured by screws or set screws of the same material and finish as the fitting.

No fitting requiring fixing to plastered walls or masonry shall be fixed directly to the wall surface, but to hardwood blocks of suitable size, plugged and screwed to the plaster or masonry. Such hardwood blocks shall be fixed to plastered walls or masonry with patent plastic or fibre plugs fitted into drilled holes.

Panic bolts shall be polished brass of approved manufacture.

Doorstops shall be provided at every door and shall be 40 mm diameter rubber stops fixed with brass screws, in patent plastic or fibre plugs fitted into holes drilled in the floor orwall.

All nails, spikes, screws, etc., required for the proper completion of the Contract shall be supplied by the Contractor, and shall be the best of their respective kinds.

12.3 EQUIPMENT

Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in accordance with this specification in a safe and efficient manner.

12.4 INSTALLATION

All working parts of items installed shall be eased, oiled, adjusted and left in perfect working order on completion.

All exterior doors shall be fitted with door stops and retaining devices where required. Doorframes shall be protected during transit and erection from twitching and damage.
All built-in door and window frames shall be set straight, plumb, and level, and shall operate to the satisfaction of the Engineer after fixing is complete.

Fittings shall be either removed, or wrapped and protected from damage until all rough trades have been completed.

Each vertically opening sliding door shall be installed in an approved manner complete with all necessary structural steelwork, hangers, supports, etc. to suspend the door tracks from the roof structure.

All horizontally opening sliding doors shall be installed complete with padlocks, handles, barrel bolts, pad bolts, and stops, etc.

All locks shall be properly installed and after completion striker plates shall be adjusted and the locks serviced.

Barrel bolts, pad bolts, hasps and staples, indicating bolts and door closers shall be firmly fixed in position in an approved manner where shown on the drawings or as indicated in the schedules.

Coat hooks shall be fitted behind doors or as otherwise required, using suitable brass wood screws in positions as indicated in the finishing schedule.

Towel rails shall be fitted adjacent to wash-hand basins and sinks in an approved manner and in positions as shown on the drawings or as indicated in the schedules.

12.5 TOLERANCES

Manufacturing tolerances shall be as laid down in the various standard specifications listed in Clause above.

12.6 TESTING

As the Contractor is fully responsible for the quality of all work produced, both in respect of materials used and of workmanship, he shall carry out sufficient control tests as the Engineer considers are necessary to ensure that all work is carried out within the Specifications

12.7 MEASUREMENT AND PAYMENT

Unless otherwise stated in the Schedule of Quantities, the unit of measurement for all items of this section shall be the number of specified items installed. The rates shall include for supply and installation as well as shop priming, galvanizing and servicing where specified.

13. ALUMINIUM WINDOWS, DOORS AND SHOP FRONTS

13.1 SCOPE

This section of the specification covers the manufacture, supply and installation of aluminium framed windows, doors and shop fronts.

All material and workmanship shall unless otherwise described conform with the information contained in the publication "Association of Architectural Aluminium Manufacturers of South Africa - Selection Guides dated April 1986".

13.2 MATERIALS

13.2.1 Standards

All materials used in the Works shall comply in all respects with the following standard specifications, the latest issues of which shall be held to apply:

SABS1202 : Modular dimensional specification for aluminium windows and sliding doors (domestic range)
SABS999 : Anodic coatings on aluminium
SABS989/992 : Aluminium and aluminium alloys

13.2.2 Aluminium

Aluminium alloy shall be Huletts architectural AA 6063 (50S) or other approved for extrusions and AA 1100 (2S) or other approved, for sheet LM 5 (A 1 Mg5) for castings and AA 5005 for forgings. It is imperative that all material for the contract shall be of the same type from the same manufacturer.

13.2.3 Finish

Unless otherwise specified to be natural mill finish Where anodised finish is specified than the exposed surfaces shall be chemically etched and sulphuric acid anodised to give an anodic film thickness as follows:

10 microns for interior applications 20 microns for exterior applications
25 microns for exterior applications in heavy industrial areas or coastal areas

The above thickness may not anywhere be less than 2 microns less than the specified thickness.

Where colour anodising is specified then the finish shall be obtained by the "ANOLOK" process carried out by a licensed anodiser (Hulett's Aluminium). Unless otherwise specified the colour is to be "545 DarkBronze".

The anodiser is to submit, via the supplier or manufacturer two samples of the chosen colour, namely a light and a dark, which shall be approved by the Architect prior to the work commencing. All colour anodised aluminium subsequently supplied for the works shall remain within the range of the accepted colour samples.

13.3 SUB-FRAMES

Where sub-frames are specified, prices for units are to allow for the manufacture and delivery to site of an approved sub-frame. And suitably temporarily cross-braced to prevent distortion. The sub-frames are to be free from warp or twist and true in plane to a tolerance of ± 3 mm and rectangular to suit the tolerances as specified for the finished units.

The sub-frames shall be fitted with building in lugs as specified under main frames.

Where sub-frames are to be exposed then they shall be anodised to match the main units.

13.4 MAIN FRAMES

13.4.1 Colour Matching

The manufacturer shall select from the material supplied for the project so as to ensure minimum colour variation in anyone or any adjacent units.

13.4.2 Framing, Joints, etc.

All external corners of units shall be mitred and internal junctions shall be scribed and fitted. Welded joints shall only be permitted in sub-frames except where an approved flash-butt welding process is used.

Where welded joints are employed the welding is to be completed prior to any surface treatment being executed and is to be done in such a manner as not to alter the material characteristics or the face to form the final exposed surfaces. Finished surfaces are to be true and identical to adjacent "unaffected" surfaces.

Where non-welded joints are used the method of fixing is to be invisible from the finished faces and all joints are to be suitably reinforced to ensure that no movement takes place in the joint prior to final fixing in position.

The gap between any two mitred or butted joints shall not exceed 0,05 mm. Sample of jointing methods are to be submitted for approval.

13.4.3 Design

Glazed window frames shall be capable of withstanding an outward pressure of 1 200 Pa and an inward pressure of 950 Pa. The glazing system to be used shall be by glazing bead or approved neoprene gasket.

The design shall be such that a double seal is created between opening and fixed sections and shall provide for adequate drainage of water penetrating the outer seal or arising from condensation. Provision shall also be made for the accommodation of a damp course at cills and reveals.

Hinges, furniture, latches, stays, etc. shall be of solid construction, anodised to match the window frame material and shall be screw fixed or bolted with stainless steel screws or bolts and shall not be pop-riveted.

Two copies of all working drawings are to be submitted for approval at least two weeks prior to commencement of manufacture.

Bearings and bushes shall be used and these shall be nylon or of an approved non-ferrous metal. Hinge pins shall be of an approved non-ferrous metal. Latch handles stays and the like shall be free from play and shall preferably be capable of adjustment subsequent to fixing. Samples of all fittings are to be submitted for approval.

13.4.4 Fixing of Frames

13.4.4.1 Frames or Sub-frames to be Built-in

Fixing lugs shall be such as to allow for building a minimum of 300 mm into brickwork or fixing to concrete in an approved manner. Fixing lugs shall be of a material resistant to corrosion by contact with water, mortar, etc. and shall be separated from the aluminium frame in an approved manner if not electrolytically compatible with aluminium.

13.4.4.2 Fixing of Frames to Sub-frames Grounds or Pre-fixed Fixing Lugs and Fixing of Lugs to Frames

Frames shall be countersunk screwed to fixing members or lugs with pre-finished screws or bolts coloured to match main frames at maximum 450 mm centres along the full length of the frame and at no greater distance than 150 mm from the corners. The screws or bolts' shall

be manufactured from materials electrolytically compatible with aluminium. Screws or bolts on which the exposed finish has been damaged shall be replaced.

13.4.5 Protection

Where frames are to be built in then all manufactured frames are to be protected prior to delivery by means of an approved heavy-duty low adhesive type of tape. This tape shall not be removed until the building is ready for final cleaning prior to completion inspection. The tape shall be removed by the manufacturer who shall be fully responsible for all damage caused in the process of removal.

Where frames are fixed to sub-frames previously built in then the frames shall be fixed into position after the completion of all wet trades and other adjoining work. Tape protection will not be required but the frames are to be protected after installation in order to prevent any damage.

No scratched or damaged surface will be accepted and "touching up" with matching paint will only be permitted where permission is obtained in writing from the Architect.

13.5 TOLERANCES

Units shall be constructed to an overall horizontal or vertical tolerance of 3 mm out of true and a maximum of 5 mm out of square measured on the diagonal. Edges and lines running within 50 mm of each other shall be parallel to a tolerance of ± 1 mm over 600 mm.

Composite windows shall be linked so as to provide a double weather seal created by the coupling member and the coupled units and joints shall be sealed with an approved non-hardening mastic sealant complying with SABS.

13.6 MEASUREMENT AND PAYMENT

The unit of measurement of the units shall be by number. Rates shall include for glazing as specified.

Rates shall include for all fittings, anodising, protection, etc.

Rates shall include for the removal of factory applied protection by the manufacturer.

Rates are to include for the complete servicing and adjustment of windows prior to hand-over. Rates are to allow for the submission and approval of shop drawings.

14. KITCHEN CUPBOARD UNITS AND SINK

14.1 SCOPE

This section of the Specification covers the supply and fixing of kitchen cupboard units and sink/cupboard units.

14.2 MATERIALS

All units shall be of the sizes, types and manufacture as indicated on the drawings and/or Schedule of Quantities or as detailed.

The units shall be manufactured from either mild steel or timber as indicated and finished with a high gloss enamel paint.

Worktops to cupboard units shall be Grade 18/8 stainless steel or panelyte as indicated on the drawings and/or Schedule of Quantities.

Tops of sink/cupboard units shall be Grade 18/8 stainless steel.

14.3 EQUIPMENT

The Contractor shall provide adequate equipment to manufacture and/or install the units to the satisfaction of the Engineer.

14.4 INSTALLATION

The units shall be fixed to both floors and walls in an approved manner in the positions as indicated on the drawings

14.5 MEASUREMENT AND PAYMENT

The unit of measurement shall be the number of type and size of units installed and the rates shall include for all aspects of supply and installation complete.

15. TERMITE PROOFING

15.1 SCOPE

This section of the Specification covers the supply and application of termite proofing using a soil poisoner.

15.2 MATERIALS

The poison shall comply with the requirements of CKS 376 "Insecticidal emulsifiable concentrate containing aldrin (soil insecticide for the protection of buildings)".

Only soil poisoner brought on to the site as a "ready for use" solution in sealed drums prepared by the manufacturer shall be used.

The Contractor shall not be permitted to prepare his own solutions. The poison shall be stored in a safe place behind lock and key.

15.3 EQUIPMENT

The Contractor shall provide and maintain in good working order, adequate equipment for carrying out the required work in a safe and efficient manner.

15.4 APPLICATION

Termite proofing shall be carried out strictly in accordance with the manufacturer's recommendations.

The poison shall be handled and applied with the utmost care and workmen shall wear suitable protective clothing.

All grass and other cellulose material shall be removed from the area which is to receive termite proofing.

After the poison has been applied, the surface of the poisoned layer of material shall not be disturbed or damaged. If the poisoned layer is damaged in any way, the damaged area shall be restored and re-treated by the Contractor at his own expense.

15.5 SUPERVISION

Termite proofing shall be carried out under the supervision of the Engineer.

15.6 MEASUREMENT AND PAYMENT

The unit of measurement for termite proofing shall, unless otherwise stated in the Schedule of Quantities, be the square metre (m²) of the treated area and the rate shall include for all aspects of supply and labour complete in every respect.

16. DOOR SIGNS AND NUMBER PLATES

16.1 SCOPE

This section of the Specification covers the supply and installation of door signs and number plates to doors or door frames.

16.2 MATERIALS

Door signs and number plates shall be of an approved type and manufacture and shall either be:

Pressed or engraved rigid plastic, or
Hard matt polyvinyl chloride film transfers on rigid bases.

Character and symbols shall be a different colour from the background of the door signs and number plates.

Standard symbols shall be used.

Door signs and number plates on external doors shall be of a permanent type, weather-resistant and colour fast.

Materials, sizes and colours of signs, number plates, character and symbols shall be submitted to the Engineer for approval.

16.3 INSTALLATION

Signs and number plates shall be attached to doors or door frames in an approved manner and in approved positions.

All doors shall be numbered. Numbers and number sequence shall be as instructed by the Engineer.

Door signs shall be installed on doors to toilets, ablutions, kitchens, mess rooms, locker rooms, or where instructed by the Engineer.

16.4 MEASUREMENT AND PAYMENT

The unit of measurement for Door Signs and Number Plates shall unless otherwise stated in the Schedule of Quantities, be the number and the rate shall include for all aspects of supply and labour complete in every respect.

17. MINOR FABRICATED STEEL AND OTHER METALWORK

17.1 MILD STEEL

17.1.1 COLD ROLLED STEEL

All cold rolled sections shall be cold rolled from mild steel strip, to the shapes and dimensions specified and shall be used in accordance with British Standard PD 4064 - "The use of Cold Formed Steel Sections in Building" - (Addendum 1 to BS449).

17.1.2 STAINLESSSTEEL

Fabricated items of stainless steel shall generally be made from material complying with the American Iron and Steel Institute Standard types 304 or 316. If the grade is not stipulated it shall be assumed to be type304.

Stainless steel for castings shall comply with the standards CF-8 and CF-8M of the Alloy Casting Institute, the cast counterparts of AISI types 403 and 316 respectively.

17.1.3 ALUMINIUM

Fabricated aluminium items

shall be made from material complying with the requirements of BS 1476 and 1477 unless otherwise required.

17.1.4 BOLTS AND NUTS

All bolts and nuts shall be of such length as to project 6 to 12 mm beyond the nut when tightened up. The bearing surfaces of the nuts shall, in every case, be at right angles to the axis of the holes through the nuts. Where heads of nuts are seated on bevelled surfaces of beams or channel flanges, bevelled washers shall be inserted. The heads and bodies of the bolts shall be forged from one piece of metal.

Black bolts shall be cleanly finished and the threads shall comply with the tolerances given for "Black Bolts" in Table 3 of BS 4190: 1976. The dimensions of black bolts shall comply with those given in Table 10 of BS 4190.

High strength friction grip bolts shall comply with BS 4395: Part 1 and shall be used in accordance with BS 4604: Part 1.

All bolts having counter-sunk heads shall have strong feathers forged on the neck and head to prevent turning, and the bolt holes shall be cut to receive same.

All nuts for ordinary black bolts shall be furnished with circular washers of sufficient thickness, the outside diameter to be at least twice the nominal diameter of the bolt, unless otherwise indicated on the drawing.

17.1.5 WELDING ELECTRODES

Electrodes for welding purposes must satisfy the conditions as stipulated in SABS 455. Electrodes damaged either due to chipping of the flux or contamination with moisture must not be used. All welds are to be properly cleaned after welding.

Electrodes for use in welding stainless steel shall be of the same basic analysis as the parent metal in order to obtain optimum corrosion resistance.

17.2 GENERAL

All materials shall be straight and free from wind and twist. Cold straightening that will not damage the material will be permitted.

17.3 EQUIPMENT

The Contractor shall be responsible for providing, to the satisfaction of the Engineer, all such equipment as may be required for the proper execution of the work described in this specification.

17.4 CONSTRUCTION

17.4.1 WORKING DRAWINGS

The Engineer will prepare all design and general arrangement drawings and these shall form the basis for all of the necessary shop drawings and erection drawings which must be made by the Contractor for the fabrication and erection of all steel and other work.

17.4.2 FABRICATION

Unless otherwise stated, all materials and workmanship shall comply with BS 153: Part 1 and BS 449: Part 2 but where the two specifications are in conflict, BS 153 shall take precedence.

Temporary attachments may only be welded on with the approval of the Engineer and shall eventually be removed to leave a smooth surface, primed and made good to the satisfaction of the Engineer.

All bolt holes must be accurate to size and location, the centres of holes shall not be placed closer to the edge of the plate than 1% diameter, with and extra allowance of 6 mm for sheared edges. Bolt hole diameters shall generally exceed the diameter of the bolt for it was made by 2 mm. Where possible, the adjoining parts forming a connection shall be drilled or reamed together. After assembly of the parts, the holes shall be true throughout the thickness of all parts and perpendicular to the axis of the member.

Bolted joints and connections shall be made strictly in accordance with the drawings as regards the diameter, size, and type of bolt to be used. All mild steel surfaces in contract with one another shall receive one coat of red lead paint to SABS type II Grade I before bolting together.

All flame cutting of sections in long lengths as well as welding of built up sections shall be carefully done in a manner and sequence in accordance with acknowledged good practice to avoid distortion.

17.4.3 WELDING

Welding procedure shall be such that distortion is reduced to a minimum and local distortion is rendered negligible in the final structure. Welding to be according to the American Welding Society "Code of Welding in Building Construction "AWS B1.0-69. Butt welds in flange plates and/or web plates shall wherever possible be completed before the flanges and webs are welded together.

Unless indicated on the drawings that a particular weld surface is to be ground, such weld surface is to be convex and of uniform contour and must blend reasonably well into the parent metal. Any spatter must be removed.

Pre-heating shall be carried out for repair work, where welding has been interrupted, where the temperature of the metal is below 10" or where instructed by the Engineer.

Special care shall be taken when welding stainless steels to take into account the higher coefficient of thermal expansion and lower thermal conductivity of chromium nickel steels. Tack welding will generally be necessary beforehand.

17.4.4 OPEN GRID FLOORING

Open grid flooring shall generally be of the type with square or rectangular openings and all flooring panels shall be completely framed by a fiat peripheral bar of the same depth as the span bars and welded to all span and transverse bars. Where fusion welded grid flooring is specified, these shall be of the Irving Grating type as manufactured by Andrew Mentis, or other approved similar. Open grid stair treads for stairs shall be of the type manufactured by Andrew Mentis or Angus McLeod, or similar approved to the dimensions specified, and shall be provided with approved side plates and non-skid nosing strips.

Stair treads shall be bolted to stair stringers. Normal flooring for walkways shall be fixed to structural steel angle stringers using patent clips, to the satisfaction of the Engineer.

Open grid flooring shall generally be cleaned and double dipped in an approved bituminous paint. If required, gratings shall be galvanised to SASS 763.

17.4.5 HAND-RAILINGS

All handrails and standards shall be "Monoweld" tubular or equal approved by the Engineer. Standards shall be straight and mounted plumb, and all straight sections of hand railing shall be mounted in straight lines without kinks or irregularities. Prefabricated radius bends shall be supplied where necessary. All connections between handrails and between handrails and standards shall be welded all round and filled or ground to a smooth finish. Handrail standards and railings shall be cleaned and galvanised to SASS 763 or shop primed as required.

17.4.6 HANDLING AND SITE STORAGE

All items shall be carefully handled and protected against mechanical damage and corrosion during transit and storage on site. The Contractor will be held responsible for all damage arising from neglect of the above precautions, and shall make good at his own expense.

Items delivered to Site shall be stacked off the ground, by means of timber bearers, and stacked in such a manner that it is self-draining or, alternatively, protected by means of tarpaulins.

17.4.7 ERECTION OF STEELWORK

The correction of mistakes on Site by burning may only be undertaken with the special approval of the Engineer, and to his satisfaction.

C3.5.4.3 PARTICULAR PROJECT SPECIFICATIONS

In the event of any discrepancy between the Project Specifications and a part or parts of the COLTO Standardized Specifications, SANS 1200 Standardized Specifications, the Schedule of Quantities or the Drawings, the Project Specifications shall take precedence. Where discrepancies arise with regard to the units of the payment items only, the units stated in the Schedule of Quantities shall prevail.

PS 1: CONSTRUCTION PROGRAMME

It is a prerequisite of this contract that minimal disruption of the public is ensured during construction. Construction methods must be of such a nature that no property or life is endangered. The Municipality accepts no responsibility for any work done outside the site boundaries without the Engineer's approval. The Contractor himself is responsible for liaison and arrangements with the Engineer in connection with the finalization and approval of the construction programme.

The Contractor is responsible for liaison with residents and house owners via the Project Steering Committee in respect of the programming of construction through private erven and the crossing of driveways to erven. No additional payment will be made in this regard and it shall be deemed to be covered by the relevant items.

Sufficient digital photographs of all existing structures and obstructions in the pipe line routes must be taken by the Contractor, compiled electronically, indexed and handed over to the Engineer before construction commences.

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The Contractor shall submit a programme of work to the Engineer/Municipality not later than 14 (fourteen) days after the Contractor has been notified of the acceptance of his tender. This programme must take into account, and allow for phased completion of the work. The Engineer may instruct the Contractor to stop construction work at any stage and time, as may be dictated by financial constraints highlighted by the Clients Cost Control Programme.

If necessary, the Engineer may instruct the Contractor to adjust his programme to suit other activities.

The programme shall not be in the form of a bar chart only, but shall clearly show the anticipated quantities, the production rates and value of work to be performed each month.

A network-based programme according to the precedence method shall also be provided showing the various activities and critical path in such detail as may be required by the Engineer. The programme shall be updated monthly in accordance with the progress made by the Contractor.

Failure to comply with these requirements will entitle the Engineer to use a programme based on his own assumptions for the purpose of evaluating claims for extension of time or additional payments.

If the programme submitted by the Contractor in terms of Clause 15 of the General Conditions of Contract, has to be revised because the Contractor is falling behind in his programme, he shall submit a revised programme of how he intends to regain lost time to ensure completion of the Works within the period defined in Clause 45 of the General Conditions of Contract or within a granted extension of time. A proposal to increase the tempo of work must incorporate positive steps to increase production either by more labour and plant on the site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit or to work according to the programme or revised programmes shall be sufficient reason for the Engineer to take steps as set out in Clause 58 of the General Conditions of Contract.

The approval by the Engineer of a programme shall have no contractual significance other than the Engineer will be satisfied if the work is carried out according to the programme. The said approval shall not limit the right of the Engineer to instruct the Contractor to vary the programme if necessary. The Contractor shall allow for the effect of normal rainfall and special non-working days in his programme.
(CRITICAL PATH MUST BE INDICATED ON PROGRAMME)

PS 2: SITE FACILITIES AVAILABLE

PS 2.1: Camp site

The Contractor shall negotiate with property owners and make his own arrangements to obtain sites for the erection of offices, laboratories, yards, etc. Written approval must be obtained from the owners on whose property the camp is to be situated. The choice of all sites for the establishment of camps is subject to the approval of the Engineer. Campsites within the road reserve will not be permitted.

PS 2.2: Water, electricity and sewage

The Contractor shall make his own arrangements concerning the supply of electrical power, water, telephone and all other services, both for use at the site establishment area as well as for the use in the construction of the Works. No direct payment shall be made for the provision of any service and the cost thereof shall be deemed to be included in the rates tendered for the various items of work for which these services are required.

PS 2.3: Rain gauge

The contractor must set up his own rainfall gauge. This item is included in the Schedule of Quantities under other fixed-charge obligations.

PS 3: SITE FACILITIES REQUIRED

PS 3.1: Facilities for the Engineer

No separate office is required for the Engineer's representative but the Contractor must provide a table, a chair and a plan cupboard in one of his offices for the exclusive use of the Engineer's representative. The Engineer's representative shall be allowed free use of the Contractor's facilities. The Engineer's representative shall be allowed free use of survey equipment and survey assistants to carry out control work as and when required.

PS 3.2: Equipment for Engineering staff

The Contractor shall allow for providing the following protective clothing for the engineering staff:

2 high visibility vests

2 hard hats (white)

2 Sets of safety boots

The contractor shall supply the Engineer with a Business cell phone and be responsible for the monthly running cost, and other cost relating to the use of the cell phone.

Office facilities shall be provided by the Contractor as described by Colto Specification.

PS 3.3: Water, electricity and sewage

The Contractor shall, at his own expense, be responsible for obtaining and distributing the water and electricity required for construction and domestic use. The distribution of water and electricity shall be carried out in accordance with the applicable laws and regulations.

No separate payment will be made for obtaining and distributing water and electricity, the cost of which will be deemed to be included in the tendered rates.

PS 3.4: Site instruction book

A triplicate book shall be provided by the Contractor to be used for site instructions. It shall at all times be kept on the site.

PS 4: FEATURES REQUIRING SPECIAL ATTENTION

PS 4.1: Access to properties

The Contractor shall organize the work in such a manner as to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work included in this contract.

If, as a result of restricted road reserve widths and the nature of the works, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions in order to provide access to the erven and properties.

The Contractor may, with the approval of the Engineer, make arrangements with the occupiers of the affected erven and properties to close off a portion of a street, road, footpath or entrance temporarily, provided the Contractor duly notifies the occupiers of the intended closure and its probable duration and shall, as punctually as possible, re-open the route at the prescribed time. Where possible, the road shall be made safe and re-opened to traffic overnight. Any such closure shall be made by arrangement between the Contractor and the occupiers and shall not absolve the Contractor from his obligations under the

contract to provide access at all times. Barricades, traffic signs and drums shall be provided by the Contractor to suit the specific conditions. The Contractor shall also comply with all the requirements of the Local Authority with regard to safety, signage and notices to the public.

PS 4.2: Existing residential areas

Access to the adjacent residential areas shall be maintained at all times, as shall access to individual houses.

Electricity and water supply interruptions to existing residential areas shall be kept to a minimum. Whenever it is necessary to interrupt these supplies, the Engineer's approval shall first be obtained. The affected residents shall then be notified in writing at least 3 days, but not more than 5 days in advance. Supplies shall be normalized by 16:00 on the same day.

Cognisance shall be taken by the Contractor of the possibility of residents from the adjacent residential areas having access, whether authorized or not, to the works. It is strongly emphasized that under no circumstances shall any claims be considered for delays or disruptions as a result of the presence of residents from the adjacent occupied areas.

PS 4.3: Facilities to other Contractors

In addition to the requirements of clause 21 of the general conditions of contract, the Contractor must make allowance for the presence of other Contractors engaged on other contracts on the site, which may involve, inter alia, the adoption of his programme to fit in with work to be done by the other Contractors, as well as assuring other Contractors access to their sites along prescribed routes which may fall within the site of this contract.

PS 4.4: Contractor's vehicles

All equipment and vehicles used by the Contractor shall be roadworthy at all times and all drivers and operators shall be in possession of valid drivers' licences.

PS 4.5: Site maintenance

During the progress of the work and upon its completion, the site of the works shall be kept and left in a clean and orderly condition. The Contractor shall at all times store materials and equipment for which he is responsible in an orderly manner, and shall keep the site free

from debris and obstruction. Workers shall lunch or have tea breaks only in a designated area with approved refuse and toilet facilities.

No open fires shall be permitted on the site.

Vehicles and workers must adhere to property demarcated access routes and not take or make short cuts.

PS 4.6: Testing and quality control

The Contractor shall engage the services of an approved independent testing laboratory for the testing of materials and the quality testing of layer works, to ensure that his work conforms to the specifications.

No separate payment will be made for such testing by an approved independent laboratory, the costs of which will be deemed to be included in the Contractor's tenderered rates for the various items of work requiring testing in accordance with the specifications.

Certificates shall be submitted to the Engineer for all materials and equipment included in the works, where applicable.

PS 4.7: Subcontractors

The Contractor is responsible for work carried out on his behalf by subcontractors. The Engineer will not liaise directly with such subcontractors, and all problems relating to payments, programming, workmanship, etc, shall be the concern of the Contractor and the subcontractor, and the Engineer will not be involved.

PS 4.8: Existing Services

Before the Contractor commences operations, he must discuss with and have the approval of the Employer, authority or owner concerned regarding the method he proposes to use for relocating or safe-guarding any services and existing works he may encounter during construction.

The positions of existing services shown on the Drawings are given in good faith and no guarantee can be given that:

(a) These services actually are in the approximate positions indicated.

(b) That these are the only services in the vicinity, and

(c) That the nature and description of these services are correct.

The Contractor shall be responsible to locate and safeguard any existing service or works he may encounter during construction and shall obtain clearance from the Employer, authority and the Engineer before commencing work in the proximity of existing services or works.

The Contractor shall be responsible for any damage to such existing services and works in the execution of this contract and shall reimburse the Employer, authority or the owner concerned for any repairs

required and for damages.

The Contractor shall be responsible for immediately notifying the Engineer and the authorities concerned regarding any damage caused to public services and existing works.

Any alteration to public services shall be carried out by the Authority concerned unless the Contractor is instructed otherwise.
The Contractor shall provide the necessary assistance during any operations necessary in connection with the removal, alteration or safe-guarding of any public service.

PS 4.9 Safety
The Contractor shall apply suitable proven methods for construction so that his activities will not constitute a hazard to the public or any adjacent property. All excavations shall be suitably safeguarded and barricaded especially during night time, weekends or holidays and any other day of inactivity by the Contractor.

PS 5: INFORMATION SUPPLIED BY EMPLOYER
Certain information contained in these contract documents, or provided separately, is being offered in good faith. However, in the circumstances pertaining to the type of information supplied, no guarantee can be given that all the information is necessarily correct or representative. More specifically this applies to all material surveys and reports and similar information, the accuracy of which is necessarily subject to the limitation of testing, sampling, the natural variation of material or formations being investigated and the measure of

confidence with which conclusions can be drawn from any investigations carried out. It also applies to the positions of existing services as indicated on the drawings.

The Employer accepts no liability for the correctness or otherwise of the information supplied or for any resulting damages, whether direct or consequential, should it prove during the course of the contract that the information supplied is either incorrect or not representative. Any reliance placed by the tenderer on this information shall be at his own risk.

PS 6: EXTENSION OF TIME ARISING FROM ABNORMAL RAINFALL

If abnormal rainfall or wet conditions occur during the course of the Contract, the Employer may grant an extension of time in accordance with Clause 45 of the General Conditions of Contract, calculated in accordance with the formula given below for each calendar month or part thereof:

$V = (Nw - Nn) + (Rw - Rn)/X$

If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.

The symbols shall have the following meanings:

V = Extension of time in calendar days for the calendar month under consideration. When the value of V for any month exceeds the number of days in the particular month, V will be the number of days in the month.

Nw = Actual number of days in the calendar month on which a rainfall of Y mm or more were recorded.

Nn = Average number of days, derived from existing rainfall records, on which a rainfall of Y mm or more were recorded for the calendar month.

Rw = Actual rainfall in mm recorded on the Site in an approved rain gauge for the calendar month under consideration.

Rn = Average rainfall in mm for the calendar month, derived from existing rainfall records.

The total extension of time is the algebraic sum of all the monthly totals for the period under consideration, but if the total is negative, the time for completion will not be reduced on account of subnormal rainfall. Extensions of time for part of a month will be calculated by using pro rata values for Nn and Rn.

The factor (Nw - Nn) is considered a fair allowance for variations from the average number of days during which the rainfall exceeds Y mm.
The factor (Rw - Rn)/X is considered a fair allowance for variations from the average number of days during which the rainfall did not exceed Y mm but wet conditions prevented or disrupted work.

The average rainfall record for the past 10 years at the nearest rainfall station shall be for the purposes of this Contract are taken as normal rainfall. Rn and Nn for this period shall be used and the values of X and Y are 20 and 10 respectively.

PS 7: CERTIFICATES OF PAYMENT

It was agreed that the master copy of the payment certificates would be drawn up and processed by the Contractor. All costs to this effect, as well as reproduction costs shall be to the account of the Contractor. It was agreed that the first month's certificate will be evaluated and if in order, the same format will be used throughout the contract.

PS 8: CONSTRUCTION IN LIMITED AREAS

In certain cases working space may be limited. The method of construction in these restricted areas will depend largely on the Contractor's plant. However, the Contractor must note that measurement and payment will be according to the specified cross-sections and dimensions irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and prices tendered shall be deemed to include full compensation for any difficulty encountered while working in limited areas and narrow widths, and that no extra payment will be made, nor will any claim for payment due to these difficulties be considered.

PS 9: NON-WORKING DAYS

The Contractor shall not work on Sundays or on the following statutory Public Holidays: New Years Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers Day,

Youth Day, National Women's Day, Heritage Day, Day of Reconciliation, Christmas Day and Day of Goodwill. Whenever any of the above statutory Public Holidays fall on a Sunday, the following Monday shall be a Public Holiday.

PS 10: SPOIL MATERIAL

No indiscriminate spoiling of material will be allowed. All surplus or unsuitable material shall be spoiled in designated areas as directed by the Engineer. Spoiling shall comply with the applicable statutory and municipal regulations.

PS 11: DRAWINGS

All "as built" information, as listed below, must be submitted to the Engineer's Representative before a certificate of completion will be issued. No separate payment will be made for the "as built" drawings

List of "as built" information required

(a) Exact coordinates or chainage on the road centre line of each duct road crossing for electrical and irrigation services.

(b) Exact coordinates and invert levels of all stormwater manholes, culverts and kerb inlets.

(c) Exact coordinates and invert levels of all construction work

A Registered Land Surveyor shall be required to provide the above information.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Engineer.

The Engineer will supply any figured dimensions which may have been omitted from the drawings.

PS 12: LENGTH OF TRENCHES

Where no limitations are imposed by construction stages and unless otherwise permitted in writing by the Engineer, not more than 200 m of trench in any one place shall be opened in advance of pipe laying operations.

No trench may be left open over the builders' holidays.

PS 13: SAMPLES

The Contractor shall at his own cost, supply all samples that may be required. Material or work not conforming to the approved samples shall be rejected. The Engineer reserves to himself the right to submit samples to any tests to ensure that the material represented by the sample conforms to the requirements of the specifications. The cost of all tests failed shall be for the Contractor's account.

PS 14: MANUFACTURER'S INSTRUCTIONS

The recommendations of the manufacturers of patented materials must be strictly adhered to regarding the use, mixing, application, fastening, etc. thereof except when otherwise instructed in writing by the Engineer.

PS 15: MATERIALS AND PLANT

The contractor, when using materials that are required to comply with any standard specification, shall, if so ordered, furnish the engineer with certificates of compliance.

Where so specified, materials shall bear the official mark of the appropriate authority. Samples ordered or specified shall be delivered to the engineer's office on the site free of charge.

Where proprietary products have been specified, similar products may be used subject to the prior written approval of the engineer.

Unless otherwise specified, all proprietary materials shall be used and placed in strict accordance with the relevant manufacturer's current published instructions.

Unless anything to the contrary is specified, all manufactured articles or materials supplied by the contractor for the permanent works shall be unused.

Existing structures on the site shall remain the property of the employer and except as and to the extent required elsewhere in the contract, shall not be interfered with by the contractor in any way.

Materials to be included in the works shall not be damaged in any way and, should they be damaged on delivery or by the contractor during handling, transportation, storage, installation or testing they shall be replaced by the contractor at his own expense.

All places where materials are being manufactured or obtained for use in the works, and all the processes in their entirety connected therewith shall be open to inspection by the engineer (or other persons authorised by the engineer) at all reasonable times, and the engineer shall be at liberty to suspend any portion of work which is not being executed in conformity with these specifications.

The contractor shall satisfy himself that any quarry selected for use provides the necessary mined material in accordance with the specification.

PS 16: NOTICES, SIGNS, BARRICADES AND ADVERTISEMENTS

The Contractor shall erect the necessary signs, notices and barricades for the duration of the contract in order to safeguard both the works and the public.

Notices, signs and barricades as well as advertisements may be used only upon approval by the Engineer, and the Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

The Engineer shall have the right to have any sign, notice or advertisement moved to another position or to have it removed from the site of the works, should it in any way prove to be unsatisfactory, inconvenient or dangerous to the general public.

Such notices, signs and barricades shall be provided and erected at the Contractor's own expense.

The standard name board of the South African Association of Consulting Engineers is specified. The cost of which shall be included in the rates tendered for items 1300 (Colto) of the Schedule of Quantities.

PS 17: SETTING OUT OF WORK

Reference and level beacons will be shown to the Contractor by the Engineer at the commencement of the Contract and the Contractor will be responsible for transferring the data to the Site of Works.

The Contractor shall check the condition and accuracy of all reference and level beacons and satisfy himself that they have not been disturbed and are true with regard to position and level. A beacon that has been disturbed shall not be used until its true position and level have been re-established and the new values have been certified by the Engineer. The Contractor shall thereafter be held entirely responsible for the protection of all reference and level beacons.

The Contractor shall employ a capable surveyor to set out the Works to the required lines and levels. The Engineer shall be informed immediately should any discrepancy be discovered between the levels or dimensions obtained by the Contractor and those shown on the drawings.

Where a beacon is likely to be disturbed during construction operations, the Contractor shall establish suitable reference beacons at locations where they will not be disturbed during construction. No beacons shall be covered over, disturbed or destroyed before accurate reference beacons have been established and details of the positions and levels of such beacons have been submitted to the Engineer. The Contractor's reference beacons shall be of at least the same accuracy and sturdiness of construction as the existing beacons.

The Contractor shall submit the method of setting out he proposes to employ to the Engineer. Accurate control of line and level shall be provided by the Contractor at all stages of construction.

Work set out by the Contractor may be checked by the Engineer and any errors found shall be rectified by the Contractor at his own expense. The Contractor shall supply any instrument, equipment, material and labour required by the Engineer for this survey work. Any assistance, including checking given to the Contractor by the Engineer or any setting out done by the Engineer for Contractor shall not be held as relieving the Contractor of his responsibility for the accurate construction of the Works.

The Contractor's survey instruments and survey equipment shall be suitable for the accurate setting out of the Works and shall be subject to the approval of the Engineer. They shall furthermore be checked and correctly adjusted by the authorized agents before the commencement of the contract and subsequently when required by the Engineer and when otherwise necessary.
When required the Contractor shall, at his own expense, provide two labourers to assist the Engineer. The Engineer shall have the sole right of approving of such a labourer.

Survey work shall not be measured and paid for directly and compensation for the work involved in setting out shall be deemed to be covered by the rates tendered and paid for the various items of work included under the contract.

PS 18: WORKMANSHIP AND QUALITY CONTROL
The onus to produce work which conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced Engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment, to ensure adequate supervision and positive control of the works at all times.

The costs of all supervision and process control, including testing thus carried out by the Contractor shall be deemed to be included in the rates tendered for the related items of work.

The Contractor's attention is drawn to the provisions of the various standardized specifications regarding the minimum frequency of testing that will be required for process control. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion of every part of the work and submission thereof to the Engineer for examination, the Contractor shall furnish the Engineer with the results of all relevant tests, measurements and levels to indicate compliance with the specifications.

PS 19: TRANSPORT OF MATERIAL

All costs of transporting material, including overhaul, shall be included in the applicable tendered rates. All references in the specifications to transport, overhaul and haul distances shall be deleted irrespective of whether or not the deletion is included in these project specifications.

PS 20: LIAISON WITH LOCAL AUTHORITIES

The Contractor will have to liaise with local authorities regarding the following matters:

(a) Dealing with traffic.

(b) Locating of existing underground services.

(c) Protection of existing services during construction.

All the relevant authorities were notified of above operations. It is then the Contractor's onus to immediately contact all these authorities and to accommodate their involvement in his programme of work. The Contractor should also warn the authorities at least 48 hours before the actual work commences. Compensation for delays, losses or accidents will not be considered should the Contractor at any time have failed to keep the local authorities informed.

The Engineer or Employer must immediately be notified, should the Contractor experience any problem regarding work which involve a local authority.

PS 21 LOCAL LABOUR AND LOCAL SUBCONTRACTORS

PS 21.1 Introduction

It is envisaged that the works will be constructed by one Contractor employing local labour to construct the work applying the principles of the Expanded Public Works Programme (EPWP).

PS 21.2 Workload

The Contractor is required to execute certain components of this contract with labour-based construction methods as described in relevant sections.

PS 21.3 Assisting ABE's

The Contractor is required to assist ABE's in accordance with the Contractors proposal included in his/her tender.

PS 21.4 Local Labour

It is the intention that this Contract should make maximum use of the local labour force that is presently under-employed. To this end the Contractor is expected to limit non-local employees to key personnel only and to employ and train local labour on this Contract.

The Contractor shall complete the form: Annexure F and state how many non-local key personnel he intends to employ in the various categories. The numbers stated on the above-mentioned form will be strictly controlled during the Contract period and any increase in numbers is subject to the approval of the Employer.

A Project Steering Committee (PSC) has been formed and consists of representatives of the affected community, Musina Local Municipality and the Engineer. The PSC is up to date with the details of the project and appointment of all local labour must be through the PSC.

The Contractor will be required to arrange his own documentation regarding a contract for locally employed labour and must include provisions for the Occupational Health and Safety Act (1993) and the Compensation for Occupational Injuries and Diseases Act. The minimum daily wage to be paid in accordance with the Wage Bill for the geographical area shall be as stated in the Government Gazette in terms of Wage Determination for the Civil Engineering Industry.

PS 21.5 Contractors Obligations

The Contractor is to supply the Engineer with copies of the agreements between himself/herself and his/her subcontractors within twenty-one (21) days of the contract being awarded.

Should the Contractor be unable to or unwilling to:

i) Subcontract the required Works as detailed in his/her tender document;

ii) Submit the necessary documentation to prove that he/she is subcontracting the work as specified in paragraph PS 10.6.

iii) Implement his/her proposed training scheme or any other scheme agreed to by the relevant parties;

The Municipality reserves the right to:

a) Nullify the said contract and re-issue it to tender;

b) Nominate available local subcontractors for the required Works;

c) Deduct payment from the monthly certificates, the value of which will be calculated as follows:

X = Y - Z

X = Amount of deduction from the monthly certificate

Y = Value of the work that should have been undertaken by the subcontractor during the month

Z = Value of the work actually undertaken by the Subcontractor during the month;

(d) = Nominate agents to undertake the proposed training at the expense of the Contractor.

PS 21.6 Work considered to be Labour Based

It is a condition of this contract that the following components of work must be executed using labour-based construction methods.

1) Excavation of soft/ intermediate / hard material in pipe trenches not deeper than 1,2 m if the uninterrupted trench length of soft material is greater than 50 m, and the total depth of the trench consists of soft material.

2) Excavation of soft/ intermediate/ hard material in all pipe trenches for erf connections with no limitations.

3) Preparation of pipe bedding.

4) Laying and jointing of all pipes with a nominal diameter smaller than 230mm:

5) Backfilling of all trenches with compaction excluded.

6) Placing of concrete for anchor blocks and toilet foundations.

7) Brickwork in toilet structures.

8) Basic plumbing installation in toilets.

9) All earthworks required for foundations of toilet structures.

10) Precast concrete roof slabs for toilets, excluding erection.

11) Location of existing services.

Note:

The abovementioned work must either be done by local labourers employed by the Contractor or by local subcontractors. In the Schedule of Quantities, as an alternative to machine excavation, the cost of a compulsory labour-based construction activity is covered by using the standard Colto payment item (where applicable). Site conditions and material present will dictate the application of labour-based trench excavation or machine excavation. A prerequisite for payment of these labour-based excavation

items is that the Contractor keeps daily written records with names of labourers, tasks completed, man-hours spent and payments made.

Items excluded from labour-based items:

1) Excavation in Boulders and rock material - Mechanical excavators and blasting allowed.
2) Compaction of bedding and backfilling - Rollers and plate compactors allowed.
3) Transport of materials LDV, dumpers and other transport equipment allowed.
4) Mixing of concrete - Mechanical mixers allowed.
5) Vibration of concrete - Vibrators compulsory.
6) Precast concrete manholes.

PS 22 TRAINING SCHEMES

Certain members of the Contractors staff will be selected from the locally recruited employees, to be subjected to training in tasks related to the execution of the contract.

The PSC will select the trainees and decide upon the specific training for each of them. The Contractor must guide PSC in this regard and make all the necessary arrangements with the training institution and the trainees, to ensure that the process runs smoothly. All other costs, including transport of trainees, will be borne by the Contractor and is deemed to be included in the P &G.

PS 23 PRESCRIPTIONS IN RESPECT OF EXISTING SERVICES

The scope of works for this contract could be affected by existing services. Where necessary the contractor must familiarize himself with the position and extent of existing

services and to carry out the works in such a manner as not to cause damage to existing services.

PS 23.1 Water and Storm Water Services

All manhole covers in the road must be clearly referenced and absolutely no surfacing shall be allowed on any manhole cover.

Any cost of repairs, replacement and/or installation of services and equipment resulting from the contractor's negligence or unauthorized action shall be to the contractor's account.

PS 23.2 Electrical Services

The following procedures will apply:

1. The Contractor will in all instances submit construction drawings to the Electricity Supply Authority (ESA) for comments and for ESA to indicate known electrical services. These drawings will in all instances be available on site during the construction period or in the possession of the supervisor of the construction workers.

2. The cable's precise position on the terrain, with reference to the approximate position as indicated on the drawing, must be confirmed on terrain by means of cable tracing equipment to be supplied or arranged by the Contractor for this purpose. In the case of primary cables (11 kV and 33kV) as indicated on the drawings, it is essential that cable tracing be conducted by ESA. The Contractor will provide sufficient white lime to mark the cable on the ground. The contact persons and telephone numbers for cable tracing personnel shall be obtained from ESA by the Contractor.

3. The Contractor must thereafter, very carefully, open up the cable by hand on at least two places, of which the in between distances will not exceed 50 meters.

4. At any position, between any two points of the exposed cable as described in 1.3 above, that cable shall be identified as a known service if it lays within 0,5 meters of a straight line drawn between these two points

5. If the cable lays further than 0,5 meters away from a straight line drawn between the two exposed points, it shall be identified as an unknown service.

6. With reference to the approximate position of cables on the drawing, the Contractor will be responsible for confirming the location of such cables on terrain by means of the equipment referred to in 1.2 above, and by careful digging by hand. If the exact position of the cables cannot be determined without doubt, ESA can be approached for help.

7. When existing electrical cables fall within the excavation area of the new service, the Contractor will be responsible for protecting and supporting such cable. During backfilling of the trench, the Contractor will ensure that the cable is not damaged and repositioned at the original position and depth with the necessary bedding and marker tape.

8. Before any exposed cables are backfilled, such cables shall be inspected for possible damage by the terrain agent, in the presence of the Engineer or his/her representative. A complete record of all positions where cables were exposed must be indicated on the drawing.

9. The Contractor is responsible for keeping a complete record of incidents where electrical cables (known or unknown) were damaged that includes the following:
Date when damaged and the reason
Date when repaired
The extent of repairs, for instance cable size, number of joints necessary, the length of cable replaced etc
The exact cable position and depth indicated on the plan

10. The Engineer's representative must check these records. The above-mentioned record will be an annexure to the minutes of the monthly site meetings. All repairs of damaged cables (known or unknown) will be conducted by ESA. The account for repairs done on known services (cables) will be delivered to the Contractor via the Engineer. On the basis of accounts delivered monthly by ESA, the repair cost of a known service (electrical cable) that was damaged, will be recovered from the Contractor's certificate.

11. 33 kV Cables

In no instances will any Contractor be allowed to expose cover 33kV cables or excavate closer to 500mm (by hand) and 2000 mm (mechanical excavation) from the centre of a 33 kV cable. ESA will do the required excavation for the Contractor's account.

12. Overhead Services

Excavation and backfill shall be such that no foundation of overhead structures (power lines, streetlights, high mast lights, stays etc.,) will be disturbed. If disturbed, the Contractor will inform ESA in writing and will reinstate the foundation to its original state.

13. Maintenance Period

During the maintenance period the Contractor's responsibility shall include:

All electrical cables that were exposed or handled by him

Excavations in the vicinity of poles and stays, at the time of the construction activities

This makes provision for instances where damaged cables were covered up without informing ESA that may cause many problems later on. The Contractor is responsible to repair all disturbed pole and stay foundations and to reinstate it to its original condition (electrical and structural), as they are disturbed.

C3.5.4.4 AMENDMENTS TO THE STANDARD AND PARTICULAR SPECIFICATIONS

PCL: COMMUNITY LIAISON AND COMMUNITY RELATIONS

PCL 1 GENERAL

The construction site is situated in a built-up area and the Contractor shall ensure the least possible disruption of movement of the public during construction. The Contractor shall be responsible for liaison with the Community Liaison Officer (CLO) in respect of construction activities next to private properties and entrances to properties. No separate payment will be made in this regard.

PCL 2 PROJECT STEERING COMMITTEE (PSC)

A Project Steering Committee (PSC) will be established for the project. The functions and powers of the PSC will be as approved by the Musina Local municipality.

In view of the Contract being executed in various Municipal Wards and to limit representation on the PSC, the PSC will consist of the local Ward Councillors and a total of three (3) community representatives appointed by the Ward Councillors affected by the Works.

The Contractor will liaise with the CLO and Ward Councillors for the permanent appointment of local labour workforce for the duration of the Contract, irrelevant of the work being executed in various wards.

PCL 3 COMMUNITY LIAISON OFFICER (CLO)

A Community Liaison Officer (CLO) will be appointed by the Contractor only on instruction of the Employer. In the event of an appointment of a CLO, the contractor shall, however, accept the appointment as part of his management personnel.

PCL 3.1 DUTIES OF THE CLO

The CLO's duties will be the following:

The CLO will liaise with the PSC for the permanent appointment of local labour workforce for the duration of the Contract, irrelevant of the work being executed in various wards.

To be available on site daily between the hours of 07:15 and 10:30 and at other times as the need arises. His normal work day will extend from 07:15 in the morning until 16:45 in the afternoon inclusive of a thirty-minute lunch interval.

To determine, in consultation with the Contractor, the needs of the local labour for relevant technical training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.

To communicate with the Contractor and the Engineer to determine the labour requirements with regard to numbers and skill, to identify possible labour disputes and to assist in their resolution.

To attend all meetings in which the community and/or labour is present or is required to be represented. In particular he will attend the first part of the monthly Site Meeting to report on local community labour involvement.
To report to and liaise with the Project Steering Committee.

To inform local labour of their conditions of employment and to inform local labourers as early as possible when their period of employment will be terminated.

To ensure that all labourers who are involved in activities where tasks have been set are fully informed regarding the principle of task work.

To attend disciplinary proceedings to ensure that hearings are fair and reasonable.

To receive and attend to any complaints lodge by PSC and members of the community.

To keep a daily written record of his interviews and community liaison.

All such other duties as agreed upon between all parties concerned.

To prevent any interference with any matter that is in conflict with the relevant contract as approved by the Local Municipality, that could have a direct influence on the technical specification or the conditions of contract as set out in the relevant contract documents.

To ensure that no member of the PSC or any member of the community put any pressure on the consultant and/or the contractor involved to make any financial or other contribution to individuals or the community as a whole without the knowledge of the Musina Local municipality.

PCL 3.2 PAYMENT FOR THE CLO

Remuneration of the CLO will be R6 000 per month unless otherwise ordered by the Engineer. A special item is incorporated in the Schedule of Quantities relating to payment of the CLO on a monthly basis.

The Contractor shall give to the CLO, at the earliest opportunity, written notice of the termination of the project, provided always that such notice shall not be less than one month.

PTR: TRAINING

PTR 1 GENERAL

Training needs will be determined during the construction period. The Community Liaison Officer (CLO) in consultation with the Project Steering Committee (PSC) and the Engineer will identify possible training needs. The training needs will be put before Musina Local Municipality and the Engineer for approval.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

C4 SITE INFORMATION

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

PART C4: SITE INFORMATION (GREEN PAGES)

C4.1 LOCALITY PLAN C.319

C4.2 SITE INFORMATION.....C.319

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

C4.1 LOCALITY PLAN

1.1 Location

The project is located in the Musina town central business district (CBD). It is within the jurisdiction of Musina Local Municipality in Vhembe District Municipality of Limpopo Province in Republic of South Africa, and it is Ward 1. The project co-ordinates are as tabled.

Table 1.4.1 Project Co-ordinates

Description	Longitude	Latitude
Main Office	30° 2'27.74"	22°21'4.33"
Old Traffic Office	30° 2'42.51"	22°20'36.24"

1.2 Documentation

The documentation included in this section describes the site as at the time of tender to enable the Tenderer to price his tender, furthermore to decide upon his method of working and programming and to evaluate his risks.

1.3 Information

Only actual information about physical conditions of the site and its surroundings (if any available) is included in this Site Information and interpretation thereof is a matter for the Tenderer.

C4.2 SITE INFORMATION

1.1 Records and Test Results

1.1.1 Geotechnical report

Available on request.

1.1.2 Subsoil records

No information available.

1.1.3 Borehole records

N/A

1.2 Reports on Physical Conditions

1.2.1 Mapping

N/A

1.2.2 Hydrographic data

N/A

1.2.3 Hydrological information

N/A

1.3 Publicly available Information

1.3.1 Published papers and interpretation of geotechnical information

N/A

1.4 Information about services below the surface of the site

1.4.1 Water

There are existing underground water pipelines on the site vicinity, the contractor must be cautious when executing the works to avoid unnecessary damages,

Should the Contractor damage an existing service he shall immediately contact the Engineer who will investigate the matter and determine liability for the damage.

1.4.2 Sewage

There are existing underground sewer pipelines on the site vicinity, the contractor must be cautious when executing the works to avoid unnecessary damages,

Should the Contractor damage an existing service he shall immediately contact the Engineer who will investigate the matter and determine liability for the damage.

1.4.3 Electricity

All cables and pipes shall be considered “live” unless confirmed otherwise by the relevant authority.

1.4.4 Gas

Available within the town.

1.4.5 Communications

Available within the town.

1.5 Information about adjacent main infrastructure

1.5.1 Buildings

Unavailable.

1.5.2 Structures

The structures will be the guardhouses.

1.5.3 Internal Roads

Available

1.5.4 Restrictions for Heavy Loads

N/A

1.6 Atmospheric criteria

Unavailable.

1.7 Environmental criteria

A copy of the Environmental Management Plan is available on request.

PART C5: ANNEXURES (WHITE PAGES)

C5.1 PRO-FORMA DOCUMENTS (*WHITE PAGES)* C.323

C5.2 GUIDELINES FOR THE IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) C.336

C5.3 TENDER DRAWINGS C.363

C5.4 OCCUPATIONAL HEALTH AND SAFETY POLICY.....C.364

C5.1 PRO-FORMA DOCUMENTS (*White Pages)*

The following is a list of pro-forma documents and examples that are required to be completed by the successful tenderer.

C5.1.1 RETENTION MONEY GUARANTEE PRO-FORMA.....C.324

C5.1.2 EXAMPLE OF ABE DECLARATION AFFIDAVIT.....C.326

C5.1.3 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT C.329

C5.1.4 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT C.330

C5.1.5 FORM RDP 11(E) : GENERIC TRAINING REPORT C.331

C5.1.6 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT C.332

C5.1.7 FORM RDP 13(E) : EMPLOYER'S AGENTING TRAINING REPORT C.333

C5.1.8 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT.....C.334

C5.1.1 RETENTION MONEY GUARANTEE PRO-FORMA

EXAMPLE

Musina Local Municipality

Private Bag x 611

Musina

Notes to Tenderer

1. **This pro forma is for information only. The successful tenderer's guarantor will need to reproduce it without amendment, omission or addition for completion and lodgement with the Employer.**
2. **The tenderer's guarantee will have to be on letterheads indicating the contact details of the guarantor, shareholders/board of directors, guarantee number and the company registration number.**

CONTRACT No.: 17-2023/24

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

The guarantee is issued on behalf of .....

Registration No .....

.....

(hereinafter referred to as "the Contractor") in connection with the above mentioned contract (hereinafter referred to as "the Contract").

Whereas you have agreed that the Contractor may provide a guarantee in lieu of the retention monies provided for under the Contract.

Now therefore we, the undersigned, being duly authorised to represent the .....

.....

(full name of guarantor) registration number .....

undertake to pay you such amounts as you may from time to time demand from us, immediately upon receipt of a written demand from you.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

1 Each demand shall be in writing and delivered to us at ……such other address as we shall in writing notify to you.

2. Our liability to make the payments herein referred to shall be unconditional and not be affected or diminished by any disputes, claims or counterclaims between you and the Contractor.

3. Our aggregate liability under this guarantee is limited to..... (R……..) and is restricted to payment of monies only.

4. This guarantee shall expire on the date on which the last of the retention monies, which but for this guarantee would have been retained by you, becomes payable to the Contractor.

5. This guarantee is neither negotiable nor transferable and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 4 (above), whichever is the earlier.

Signed at.....for and on behalf of…….

on this the . ..... day of.....in the year .....

GUARANTOR: .....

AS WITNESS:

1..... 2.....

.....

NAME(Print): ..... NAME(Print): .....

ADDRESS ..... ADDRESS .....

....

.....

....

.....

C5.1.2 EXAMPLE OF ABE DECLARATION AFFIDAVIT

(facsimiles will be provided by the Employer to be completed by ABEs)

1. Name of firm : ……
   Postal address : ……
   Telephone no. : ……Fax no ……..
   Contact person : ……
   VAT registration no. : ……
2. Type of firm (tick as appropriate)
   - Partnership……..
   - One person business/sole trader…….
   - Close corporation: registration no……
   - Date of registration…….
   - Company: registration no…….
   - Pty Ltd: registration no……
3. Principal Business Activities :……
4. Service/work to be performed on this contract: ……
5. Participation in this contract
   - as a Sub-contractor Yes/No
   - in a Joint Venture Yes/No
   - with main contractor Yes/No
   - with a sub-contractor Yes/No
6. List all partners, proprietors and shareholders:

Name	**ID. No.**	**Citizen of RSA Yes/No**	**PDI status Yes/No**	**%owned**

7. List the last four contracts/assignments completed by your firm. If required, a separate sheet may be used and attached to this page. Reference may be called from the Employers of the projects listed.

PROJECT AND WORK PERFORMED	**EMPLOYER (NAME, ADDRESS, TEL, FAX)**	**VALUE OF RANDS**

Notes to tenderer:

Under column 1 state the assignment or contract (eg. Contract XYZ0123): Construction of rural roads) and follow this with the work carried out (eg. construction of pipe culverts).

Under column 2, if it was a sub-contract give the required details of the employer for the main contract and also of the Contractor who employed you.

Under column 3 give the value of the main contract (if any and if known) and also the value of the work carried out by you.

8. Declaration

I,……

……., being duly authorised to sign on behalf of the firm, affirm that the PDI equity in this business is as stated above and that the information furnished is true and correct.

Signature .....

Name (print).....

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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Date.....

Signed on behalf of (print name).....

Address .....

.....

Telephone no.....

Commissioner of Oath .....

Date.....

Note: In the case of a Company a certificate of authority for signatory must be provided.

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

EXAMPLE

C5.1.3 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT

CONTRACT NO……..

REPORT ON EMPLOYMENT ON THE ABOVE CONTRACT FOR THE MONTH OF _____											
NAME OF COMPANY OR FIRMAND VENDOR NUMBER	**AGE OF COMPANY OR FIRM**	**EMPLOYMENT GROUP**	**EMPLOYMENT**								
			MALE	**FEMALE**	**TOTAL**	**PERSON/HOURS**			**VALUE (RAND)**	
						MALE	**FEMALE**	**TOTAL**	**MALE**	**FEMALE**
		Unskilled (US)								
		Semi-Skilled (SS)								
		Skilled (SK)								
		Lab.Tech (LT)								
		Surveyor (SUR)								
		Eng. Tech (ET)								
		Employer's Agent (EN)								
		Admin (AD)								
		Others (O)								
TOTALS										
GRAND TOTALS										

EXAMPLE

C5.1.4 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT

CONTRACT NO……

REPORT ON THE EMPLOYMENT OF SUPERVISORY STAFF ON THE ABOVE CONTRACT FOR THE MONTH OF _____				
POSITION HELD (e.g Site Agent)	**NAME**	**PDI**	**NON-PDI**	**TOTAL**
TOTALS				

EXAMPLE

C5.1.5 FORM RDP 11(E) : GENERIC TRAINING REPORT

CONTRACT NO……

REPORT ON GENERIC TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF _____											
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING	
					NUMBER ATTENDING		CERTIFICATES AWARDED			
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
TOTAL										
TOTAL ALL TRAINEES										

EXAMPLE

C5.1.6 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT

CONTRACT NO……

REPORT ON ENTREPRENEURIAL TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF _____										
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING	
					NUMBER ATTENDING		CERTIFICATES AWARDED			
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE

EXAMPLE

C5.1.7 FORM RDP 13(E) : EMPLOYER'S AGENTING TRAINING REPORT

CONTRACT NO……

REPORT ON EMPLOYER'S AGENTING TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF _____										
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE – IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING	
					NUMBER ATTENDING		CERTIFICATES AWARDED			
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
TOTAL										
TOTAL ALL TRAINEES										

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

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EXAMPLE

C5.1.8 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT

CONTRACT NO……..

REPORT ON COMMUNITY LIAISON MEETINGS ON THE ABOVE CONTRACT FOR THE MONTH OF _____						
DATE OF MEETING	COMPANY/FIRM OR ORGANISATION RESPONSIBLE FOR ARRANGING THE MEETING		NUMBER OF COMMUNITY MEMBERS PRESENT	DURATION OF MEETING (hours)	TOTAL COST OF THE MEETING	COMMENTS
	NAME	VENDOR NO.				

CONTRACT NO……

REPORT ON COMMUNITY LIAISON MEETINGS ON THE ABOVE CONTRACT FOR THE MONTH OF _____					
DATE OF MEETING	COMPANY/FIRM OR ORGANISATION RESPONSIBLE FOR ARRANGING THE MEETING	NUMBER OF COMMUNITY	DURATION OF	TOTAL COST OF	COMMENTS

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	NAME	VENDOR NO.	MEMBERS PRESENT	MEETING (hours)	THE MEETING	

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C5.2 GUIDELINES FOR THE IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP)

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Foreword

The Expanded Public Works Programme (EPWP) is one of government's short-to-medium term programmes aimed at alleviating and reducing unemployment. The EPWP will achieve this aim through the provision of work opportunities coupled with training. It is a national programme covering all spheres of government and state-owned enterprises (SOE's). Former President Mbeki formally announced the programme in his State of the Nation Address in February 2003.

Government's medium-to-long term programmes to address unemployment include increasing economic growth, improving skills levels through education and training, and improving the enabling environment for industry to flourish. The EPWP will continue to exist until these medium-to-long term programmes are successful in reducing unemployment.

The programme involves reorientating line function budgets so that government expenditure results in more work opportunities, particularly for unskilled labour. EPWP projects will therefore be funded through the normal budgetary process, through the budgets of line-function departments, provinces and municipalities.

Opportunities for implementing the EPWP have been identified in the infrastructure, environmental, social and economic sectors. In the infrastructure sector the emphasis is on creating additional work opportunities through the introduction of labour-intensive construction methods. Labour-intensive construction methods involve the use of an appropriate mix of labour and machines, with a preference for labour where technically and economically feasible, without compromising the quality of the product.

All public bodies involved in infrastructure provision are expected to attempt to contribute to the programme. As part of this initiative, the national government has through the 2004 Division of Revenue Act placed some additional conditionalities on the Provincial Infrastructure Grant (PIG) and the Municipal Infrastructure Grant (MIG). These additional conditionalities will require provinces and municipalities to use the “Guidelines for the implementation of labour-intensive infrastructure projects under the EPWP“ agreed upon between SALGA, National Treasury and the Department of Public Works for identification, design and construction or projects financed through the MIG or PIG. This document contains those guidelines.

International and local experience has shown that, with well-trained supervisory staff and an appropriate employment framework, labour-intensive methods can be used successfully for infrastructure projects involving low-volume roads and sidewalks, stormwater drains, and trenches. On the basis of this experience, and in the context of high levels of unemployment, the national government has decided to require that these infrastructure projects must be carried out labour-intensively.

These guidelines aim to provide provinces and municipalities with the necessary tools to successfully tender these projects as labour-intensive projects. These guidelines have been designed with the aim of minimising the additional work required from provincial and municipal officials. The National Department of Public Works is working with the Construction Education and Training Authority (CETA) to develop the capacity of the construction industry to design and manage labour-intensive infrastructure projects successfully.

The guidelines contain sections which should be copied into the relevant parts of the contract documentation for consulting Employer’s Agents and contractors. These sections

introduce a requirement that certain construction activities must be carried out by hand, under certain conditions. These requirements were formulated on the basis of a thorough review of international and local experience of labour-intensive construction, in order to identify the activities for which it is economically and technically feasible to use labour-intensive methods. The guidelines therefore conform to the Public Finance Management Act requirement for assessing the cost-effectiveness of capital projects. The normal tender evaluation processes are followed under these guidelines, and it is not necessary to apply any special additional preferences for employment creation.

The guidelines include the contents of the Code of Good Practice for Special Public Works Programmes, which has been gazetted by the Department of Labour, and which provides for special conditions of employment for these EPWP projects. In terms of the Code of Good Practice, the workers on these projects are entitled to formal training, which will be provided by training providers appointed (and funded) by the Department of Labour. For projects of up to six months in duration, this training will cover life-skills and information about other education, training, and employment opportunities.

In order to develop the capacity of the construction industry to manage labour-intensive projects, these guidelines also include an eligibility requirement for the appointment of contractors and consulting Employer's Agents, i.e. that their key staff involved in the project must undergo special NQF-accredited training programmes in labour-intensive construction.

As an additional means of addressing the capacity in the labour-intensive construction sector, DPW together with the CETA has established a labour intensive contractor learnership programme. The aim of this learnership programme is to produce small contractors qualified to execute work in accordance with these guidelines. The CETA is paying for the classroom training of these contractors.

As part of this learnership programme, learner contractors need to execute projects to gain practical experience. Partnering provinces and municipalities may allocate projects identified and designed using these guidelines to the learner contractors on a negotiated price basis.

An electronic version of these guidelines and electronic copies of the following documents can be obtained on the enclosed CD ROM or downloaded from www.publicworks.gov.za.

- Code of Good Practice for Employment and Conditions of Work for Special Public Works Programmes
- Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997by the Minister of Labour in Government

Notice N° R63 of 25 January 2002

- Government Gazette (DORA 2004 with MIG and PIG Conditions)
- Documents relating on the Labour-Intensive Contractor Learnership Programme

Terminology

By hand: refers to the use of tools which are manually operated and powered

Form of contract: refers to a document (conditions of contract) published by industry which establishes the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the contract.

Labour-intensive: refers to methods of construction involving a mix of machines and labour, where labour, utilising hand tools and light plant and equipment, is preferred to the use of heavy machines, where technically and economically feasible.

(Note: The normal emphasis on the cost-effectiveness and quality of the asset must be retained.)

Public body: refers to a department, trading entity, constitutional institution, municipality, public entity or municipal entity

Scope of work: refers to a specification and description of the services or construction works which are to be provided and any other requirements and constraints relating to the manner in which the contract is to be performed

Abbreviations

CETA: Construction Education and Training Authority

CIDB: Construction Industry Development Board

ECSA: Employer's Agenting Council of South Africa

EPWP: Expanded Public Works Programme

FIDIC: French acronym for the International Federation of Consulting Employer's Agents

NEC: New Employer's Agenting Contract

NQF: National Qualifications Framework

SANS: South African National Standard

SPWP: Special Public Works Programme

CONSTRUCTION OF ENHANCING OF SECURITY FEATURES IN MAIN BUILDING AND OLD TRAFFIC OFFICE

TENDER NO: 17-2023/24

1 INTRODUCTION

Labour-intensive infrastructure projects under the EPWP include:

- using labour-intensive construction methods to provide employment opportunities to local unemployed people;
- providing training or skills development to those locally employed workers;
- building cost-effective and quality assets.

This document is a guiding framework for the implementation of labour-intensive projects under the Expanded Public Works Programme. It provides the means by which labour-intensive works can be implemented under the most commonly encountered delivery model, namely design by employer (i.e. the model in which the contractor undertakes construction on the basis of full designs issued by the employer.) It also assumes that the public body will appoint a consultant to design the works and to administer the contract. Adjustments to the text of this document will be necessary to accommodate other delivery models. Where no consultants are appointed, the staff of the public body needs to perform the activities assigned to consultants in this document.

The document in addition provides guidance on the:

- identification of suitable projects;
- appropriate design for labour-intensive construction;
- the specification of labour-intensive works; and
- the compilation of contract documentation for labour-intensive projects.

Specific direction is given regarding contract clauses which must be included to amend or augment standard documentation, in order to implement labour-intensive projects.

These guidelines do not have to be applied to projects for which planning had already commenced before the beginning of the 2004-2005 financial year, as it might require too many changes to existing designs or tender documentation. However, these guidelines must be applied to all relevant projects for which the design process commences after the beginning of the 2004-2005 financial year.

Appendix A provides sources of additional information.

The employment of locally employed temporary workers on all EPWP labour-intensive infrastructure projects must be in accordance with the Code of Good Practice for Employment and Conditions of Work for Special Public Works Programmes issued in terms of the Basic Conditions of Employment Act, 1997 (Act N° 75 of 1997) and promulgated in Government Gazettes Notice N° P64 of 25 January 2002. The requirements of this Code

have been included in this Guidelines document. However, reference should be made to the full text of the Code of Good Practice and the related Ministerial Determination.

2. RESPONSIBILITIES OF THE PUBLIC BODY

2.1 Selection of projects

The public body must implement the following types of civil infrastructure projects labour-intensively, in accordance with these guidelines:

- low-volume roads (typically less than 500 vehicles per day) and sidewalks;
- stormwater drainage; and
- trenching;

where such projects contain a significant amount of the construction activities for which the use of labour is specified in the Generic Labour-Intensive Specification in section 3.3.3 below, i.e. excavation, loading, short-distance hauling, offloading, spreading, grassing, and stone-pitching.

There is also potential for additional employment creation in other types of infrastructure and building (see Annexure B). Public bodies are also encouraged to create additional work opportunities in these projects. These guidelines may be used for other labour-intensive projects other than those types of civil infrastructure projects specified above, as long as such projects involve a significant substitution of labour for machines.

The public body must be satisfied that sufficient local labour (willing to work) is available for the project, before proceeding with the project as a labour-intensive project.

The public body is encouraged to send its relevant managers on the applicable skills programmes in labour-intensive construction (See Appendix D).

As mentioned in section 1 of these guidelines above, these guidelines do not have to be applied to projects for which planning had already commenced before the beginning of the 2004-2005 financial year, to avoid reworking existing designs or tender documentation.

2.2 Setting of rate of pay

In accordance with the Code of Good Practice for Employment and Conditions of Work for Special Public Works Programmes (clause 10.4), the public body must set a rate of pay (task-rate) for workers to be employed on the labour-intensive projects.

Clause 10.4 requires that the following should be considered when setting rates of pay for workers:

10.4.1 The rate set should take into account wages paid for comparable unskilled work in

the local area per sector, if necessary.

10.4.2 The rate should be an appropriate wage to offer an incentive for work, to reward effort provided and to ensure a reasonable quality of work. It should not be more than the average local rate to ensure people are not recruited away from other employment and jobs with longer-term prospects.

10.4.3 Men, women, disabled persons and the aged must receive the same pay for work of equal value.

2.3 Appointment of consulting Employer's Agents and contractors

The public body must ensure that:

i) the design of the labour-intensive works by consultants is overseen by persons in their employ who have completed the necessary skills training (see Appendix D);

ii) works contracts are administered by persons in the employ of consultants who have completed the necessary skills training (see Appendix D); and

ii) works contracts are awarded to contractors who have in their employ managers who have completed the necessary skills training (see Appendix D).

As a concession up to 30 June 2007, persons identified in Appendix D who have not completed the requisite skills training need only to be registered on the relevant skills programmes.

3 CONTRACT DOCUMENTATION FOR CONSULTING EMPLOYER'S AGENTS AND CONTRACTORS FOR LABOUR-INTENSIVE CONSTRUCTION PROJECTS

3.1 General

All standard forms of contract applicable in South Africa (see Appendix C) may be used for labour-intensive projects. It is not necessary to create special new forms of contract or to amend existing forms to implement labour-based works.

Requirements for labour-intensive works need, however, to be established in the scope of work / specifications / schedules / works information / scope of services / scope associated with a contract for both consultants and contractors.

Each standard form of contract uses different terms to describe the parties to the contract and to establish requirements for the works (see Appendix C). These guidelines use the terms employer and contractor for the parties engaged in construction works, client and consultant for the parties engaged in professional service contracts and scope of work for requirements in both professional service and construction contracts. The terms used in the text in boxes may have to be adjusted to reflect the terms used in the particular standard

form of contract.

3.2 Contract Documentation for Consulting Employer's Agenting Services

The scope of work must establish the manner in which the consultant is to provide the consulting Employer's Agenting services associated with labour-intensive works.

The following must be included in the scope of work in the contract of employment with a Consulting Employer's Agent:

General

The services shall be provided in accordance with the provisions of the Guideline Scope of Service and Tariff of Fees for Persons Registered in terms of the Employer's Agenting Professions Act published by the Employer's Agenting Council of South Africa in terms of Board Notice No 18 of 2003 in Government Gazette No 24938, 28 February 2003).

Labour-intensive works

1. The Consultant shall not perform any significant portion of a project involving labour-intensive works under the direction of a staff member who has not completed, or, for the period 1 April 2004 to 30 July 2005, is not registered for training towards, the NQF level 7 unit standard "Develop and Promote Labour Intensive Construction Strategies" (Details of this skills programmes may be obtained from the CETA ETQA manager (e-mail:gerard@ceta.co.za, tel: 011-265 5900).
2. The staff member of the consultant who is responsible for the administration of any works contract involving labour-intensive works must have completed or, for the period 1 April 2004 to 30 July 2005, be registered for training towards, the NQF level 5 unit standard "Manage Labour-Intensive Construction Projects" (Details of this skills programmes may be obtained from the CETA ETQA manager (e-mail:gerard@ceta.co.za , tel: 011-265 5900).
3. The Consultant must provide the Client with satisfactory evidence that staff members satisfy the requirements of 1 and 2.
4. The Consultant must design and implement the construction works in accordance with the Guidelines for the Implementation of the Labour-Intensive Projects under the Expanded Public Works Programme (the Guidelines) published by the national Department of Public Works.
5. The Consultant shall for monitoring purposes, transmit to the Client data obtained from the contractor on the number of people employed, broken down into the

amounts spent on women, youth, and persons with disability on the project, the number of person days of employment created and the number of days of formal training provided.

6. All services relating to the implementation of the works which are to be provided in terms of the Guidelines are normal services in terms of ECSA's Board Notice No 18 of 2003. Any changes in the design of the works to incorporate labour intensive works shall not constitute a change in scope or an additional service.

7. The Consultant shall certify that the works have been completed in accordance with the requirements of the Guidelines and the Contract:

   a) whenever a payment certificate is presented to the Client for payment; and

   b) immediately after the issuing of a practical completion certificate that signifies that the whole of the works have reached a state of readiness for occupation or use for the purposes intended although some minor work may be outstanding.

3.3 Contract Documentation for the Works

3.3.1 Conditions of tender

Public bodies must only award contracts to contractors who have suitably qualified senior and middle supervisory staff to supervise the labour-intensive works. Tenderers must be made aware of this requirement in tender documents. Those responsible for evaluating tenders must confirm that the contractor has such staff available for the contract during the tender evaluation process.

The following must be included in the tender data / conditions of tender in the contract with the Employer:

Eligibility requirements

A contract will only be entered into with a tenderer who has in his employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff.

Information to be submitted with the tender

The tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.

3.3.2 Conditions of contract

As mentioned in 3.1, any standard form of contract for construction works may be used for labour-intensive projects (see Appendix C). These forms of contract must not, however, be amended or varied to alter the obligations, liabilities or rights of the employer, representative of the employer (Employer's Agent / principal agent / agent / project manager) or contractor where a project manager, materials manager, trainer, mentor or any other person is appointed to support the Contractor.

The following must be included in the contract data / special conditions of contract in the contract with the Employer:

Payment for the labour-intensive component of the works

Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

Applicable labour laws

The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R63 of 25 January 2002, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

1 Introduction

1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (SPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a SPWP.

1.2 In this document –

(a) "department" means any department of the State, implementing agent or contractor;

(b) "employer" means any department, implementing agency or contractor that hires workers to work in elementary occupations on a SPWP;

(c) "worker" means any person working in an elementary occupation on a SPWP;

(d) "elementary occupation" means any occupation involving unskilled or semi-

skilled work;

(e) "management" means any person employed by a department or implementing agency to administer or execute an SPWP;

(f) "task" means a fixed quantity of work;

(g) "task-based work" means work in which a worker is paid a fixed rate for performing a task;

(h) "task-rated worker" means a worker paid on the basis of the number of tasks completed;

(i) "time-rated worker" means a worker paid on the basis of the length of time worked.

2 Terms of Work

2.1 Workers on a SPWP are employed on a temporary basis.

2.2 A worker may NOT be employed for longer than 24 months in any five-year cycle on a SPWP.

2.3 Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

3 Normal Hours of Work

3.1 An employer may not set tasks or hours of work that require a worker to work–

(a) more than forty hours in any week

(b) on more than five days in any week; and

(c) for more than eight hours on any day.

3.2 An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.

3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

4 Meal Breaks

4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

4.2 An employer and worker may agree on longer meal breaks.

4.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

4.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5 Special Conditions for Security Guards

5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

5.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

6 Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

7 Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

8 Work on Sundays and Public Holidays

8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

8.2 Work on Sundays is paid at the ordinary rate of pay.

8.3 A task-rated worker who works on a public holiday must be paid –

(a) the worker's daily task rate, if the worker works for less than four hours;

(b) double the worker's daily task rate, if the worker works for more than four hours.

8.4 A time-rated worker who works on a public holiday must be paid –

(a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

(b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday

9 Sick Leave

9.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

9.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

9.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

9.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

9.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

9.7 An employer must pay a worker sick pay on the worker's usual payday.

9.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

(a) absent from work for more than two consecutive days; or

(b) absent from work on more than two occasions in any eight-week period.

9.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

9.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

10 Maternity Leave

10.1 A worker may take up to four consecutive months' unpaid maternity leave.

10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

10.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

10.5 A worker may begin maternity leave –

(a) four weeks before the expected date of birth; or

(b) on an earlier date –

(i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or

(ii) if agreed to between employer and worker; or

(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

10.7 A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the SPWP on which she was employed has ended.

11 Family responsibility leave

11.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -

(a) when the employee's child is born;

(b) when the employee's child is sick;

(c) in the event of a death of –

(i) the employee's spouse or life partner;

(ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

12 Statement of Conditions

12.1 An employer must give a worker a statement containing the following details at the start of employment –

(a) the employer's name and address and the name of the SPWP;

(b) the tasks or job that the worker is to perform; and

(c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;

(d) the worker's rate of pay and how this is to be calculated;

(e) the training that the worker will receive during the SPWP.

12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

12.3 An employer must supply each worker with a copy of these conditions of employment.

13 Keeping Records

13.1 Every employer must keep a written record of at least the following –

(a) the worker's name and position;

(b) in the case of a task-rated worker, the number of tasks completed by the worker;

(c) in the case of a time-rated worker, the time worked by the worker;

(d) payments made to each worker.

13.2 The employer must keep this record for a period of at least three years after the completion of the SPWP.

14 Payment

14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

14.2 A task-rated worker will only be paid for tasks that have been completed.

14.3 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

14.4 A time-rated worker will be paid at the end of each month.

14.5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

14.6 Payment in cash or by cheque must take place –

(a) at the workplace or at a place agreed to by the worker;

(b) during the worker's working hours or within fifteen minutes of the start or finish of work;

(c) in a sealed envelope which becomes the property of the worker.

14.7 An employer must give a worker the following information in writing –

(a) the period for which payment is made;

(b) the numbers of tasks completed or hours worked;

(c) the worker's earnings;

(d) any money deducted from the payment;

(e) the actual amount paid to the worker.

14.8 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 14.9 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

15 Deductions

15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

15.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

15.4 An employer may not require or allow a worker to –

(a) repay any payment except an overpayment previously made by the employer by mistake;

(b) state that the worker received a greater amount of money than the employer actually paid to the worker; or

(c) pay the employer or any other person for having been employed.

16 Health and Safety

16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

16.2 A worker must –

(a) work in a way that does not endanger his/her health and safety or that of any other person;

(b) obey any health and safety instruction;

(c) obey all health and safety rules of the SPWP;

(d) use any personal protective equipment or clothing issued by the employer;

(e) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

17 Compensation for Injuries and Diseases

17.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

17.2 A worker must report any work-related injury or occupational disease to their employer or manager.

17.3 The employer must report the accident or disease to the Compensation Commissioner.

17.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

18 Termination

18.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

18.2 A worker will not receive severance pay on termination.

18.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

18.4 A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

18.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

19 Certificate of Service

19.1 On termination of employment, a worker is entitled to a certificate stating –

(a) the worker's full name;

(b) the name and address of the employer;

(c) the SPWP on which the worker worked;

(d) the work performed by the worker;

(e) any training received by the worker as part of the SPWP;

(f) the period for which the worker worked on the SPWP;

(g) any other information agreed on by the employer and worker.

3.3.3 Scope of work

Standard specifications (those normally used by the public bodies) are to be utilised. It is necessary, however, to include certain requirements in the scope of work to implement

labour-intensive works in accordance with the provisions of these Guidelines.

The following wording, as appropriate, must be included in the scope of work in the contract with the contractor

DESCRIPTION OF THE WORKS

Employer's objectives

The employer's objectives are to deliver public infrastructure using labour-intensive methods Labour-intensive works.

Labour-intensive works comprise the activities described in the Labour-Intensive Specification. Such works shall be constructed using local workers who are temporarily employed in terms of this scope of work.

LABOUR-INTENSIVE COMPETENCIES OF SUPERVISORY AND MANAGEMENT STAFF

Established contractors shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2005, are registered for training towards, the skills programme outlined in Table 1.

Emerging contractors shall have personally completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging contractors must have completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

Personnel	**NQF level**	**Unit standard titles**	**Skills programme description**
Team leader/ supervisor	2	Apply Labour-Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	any one of these 3 unit standards
		Use Labour-Intensive Construction	

		Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures	
Foreman/supervisor	4	Implement Labour-Intensive Construction Systems and Techniques	This unit standard must be completed, **and**
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent/Manager (i.e the contractor's most senior representative that is resident on the site)	5	Manage Labour-Intensive Construction Processes	Skills Programme against this single unit standard

Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail:gerard@ceta.co.za , tel: 011-265 5900)

EMPLOYMENT OF UNSKILLED ANDSEMI-SKILLED WORKERS IN LABOUR INTENSIVE WORKS

1.1 Requirements for the sourcing and engagement of labour.

1.1.1 Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

1.1.2 The rate of pay set for the SPWP is R …….. per task or per day.

(Insert value determined by public body in terms of clause 2.2 of these Guidelines)

1.1.3 Tasks established by the contractor must be such that:

a) the average worker completes 5 tasks per week in 40 hours or less; and
b) the weakest worker completes 5 tasks per week in 55 hours or less.

1.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of

1.1.5 The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

a) where the head of the household has less than a primary school education;
b) that have less than one full time person earning an income;
c) where subsistence agriculture is the source of income.
d) those who are not in receipt of any social security pension income

1.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

a) 60 % women;
b) 20% youth who are between the ages of 18 and 25; and
c) 2% on persons with disabilities.

1.2 Specific provisions pertaining to SANS 1914-5

1.2.1 Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

1.2.3 Contract participation goals

1.2.3.1 There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

1.2.3.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

1.2.4 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

1.2.5 Variations to SANS 1914-5

1.2.5.1 The definition for net amount shall be amended as follows:

Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.

1.2.5.2 The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

1.3 Training of targeted labour

1.3.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

1.3.2 The cost of the formal training of targeted labour, will be funded by the local office of the Department of Labour. This training will take place as close to the project site as practically possible. The contractor must access this training by informing the relevant regional office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The Employer and the Department of Public Works (Fax: 012 3258625/ EPWP Unit, Private Bag X65, Pretoria 0001) must be furnished with a copy of this request.

1.3.3 The contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.

1.3.4 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of 1.3.3 above.

1.3.5 Proof of compliance with the requirements of 1.3.2 to 1.3.4.must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

GENERIC LABOUR-INTENSIVE SPECIFICATION

(This specification must be incorporated in the Scope of Works without amendment or modification. When SANS 1921-5, *Construction and management requirements for works contracts Part 5: Earthworks activities which are to be performed by hand*, is published, the earthworks portions of this generic specification must be replaced with a reference to SANS 1921-5 and its associated specification data)

Scope

This specification establishes general requirements for activities which are to be executed by

hand involving the following:

a) trenches having a depth of less than 1.5 metres

b) stormwater drainage

c) low-volume roads and sidewalks

Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

Hand excavatable material

Hand excavatable material is material:

a) granular materials:

i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:

i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note: 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		**COHESIVE MATERIALS**	
Consistency	**Description**	**Consistency**	**Description**
Very loose	Crumbles very easily when	Very soft	Geological pick head can

	scraped with a geological pick.		easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

Trench excavation

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers a) to 90% Proctor density;

b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or

c) such that the density of the compacted trench backfill is not less than that of the

surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All hand excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

Clearing and grubbing

Grass and small bushes shall be cleared by hand.

Shaping

All shaping shall be undertaken by hand.

Loading

All loading shall be done by hand, regardless of the method of haulage.

Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

Spreading

All material shall be spread by hand.

Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

Grassing

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.

3.3.4 Schedules of quantities

Labour-intensive works must be highlighted in the schedules / bills of quantities for the payment items relating to labour-intensive works.

The following wording, as appropriate, may be included in the preamble or pricing instructions to the schedules / bills of quantities in the contract with the contractor:

1 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters LI in a separate column filled in against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.

2 Payment for items which are designated to be constructed labour-intensively (either

in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

The following payment items should be included in the bill of quantities:

Item	Description	Unit	Quantity	Rate	Amount
	Training allowance paid to targeted labour in terms of formal training	Person days	(insert quantity)	(insert specified day rate)	
	Extra over for the administration of payment of training allowances to targeted	Person days	(as above)		

	labour				
	Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity to the site. (Provisional sum)	Sum	(insert provisional sum)		

4 DESIGN CHECKLIST

Cognisance of the following should be taken in the design of labour-intensive works:

1. Earthworks must be designed taking consideration of the method of construction, namely labour intensive.
2. Vertical and horizontal alignment of the works (roads, trenches, pipelines and stormwater channels) should be such to optimise cut and fill, minimise deep or hard excavation or areas requiring specialist Employer's Agenting input for example dewatering or specialist ground stabilisation.
3. During the design of gravel roads, suitable construction material should be sourced in close proximity to the site of the Works.
4. Drawings must be produced and presented in a clear, easily understandable way. Where setting out information is provided in the form of coordinates it should be backed up with methods, not relying on sophisticated surveying instruments, such as offsets measurable will the use of a standard tape. Where possible and appropriate drawings should be produced using a background of ortho photos to provide for easily identification of surrounding features.
5. Except in special circumstances, drawings should be produced in a form that is easily readable in A3 format.
6. Where the haul distance is greater than 150m, and less than 5000m, the use of small volume local transport, particularly using animal-drawn vehicles should be considered.
7. Excavation in material which may constitute a safety hazard for workers must be excluded.
8. All pre-manufactured materials which are incorporated into the Works must be sized such that the mass of individual elements does not exceed 320kg.
9. Hazardous material such as lime or harmful chemical stabilising agents must not be

included in the Works.

10. Stone masonry and grouted stone pitching should be included wherever suitable material is available to the exclusion of pre-cast or cast in situ concrete stormwater structures.
11. Where compaction of road layer works is required, it must be carried out using conventional compaction equipment (mechanised pedestrian rollers where possible). Compaction of small areas and in trenches may be carried out using hand stampers.
12. Consideration must be given to alternative design of trenches for gravity pipelines to reduce depth of excavation.
13. Where there is an indication of local skills, e.g. bricklaying, structures should be designed to make use of such skills.
14. There are appropriate designs for labour-intensive construction of low-cost surfacing for low-volume roads, such as the Cape Seal and interlocking concrete blocks.

C5.3 TENDER DRAWINGS

C5.4 OCCUPATIONAL HEALTH AND SAFETY POLICY

OCCUPATIONAL HEALTH AND SAFETY POLICY

i. ACRONYMS AND ABBREVIATIONS

- COIDAct Compensation of Occupational Injury and diseases Act, 1993 (Act 85 of 1993)
- IOD Injury on Duty
- OHSAct Occupational Health and Safety Act, Act 85 of 1993
- OHS/OH&S Occupational Health and Safety
- OHS Reps Occupational Health and Safety Representatives
- MLM Musina Local Municipality
- MM Municipal Manager
- MSDS Material Safety Data Sheet
- PPE Personal Protective Clothing

ii. CLARIFICATION OF TERMS

In this document, the following words shall have the following meanings unless otherwise contextually stated:

'Accident' means an accident arising out of and in the course of an employee's employment and resulting in a personal injury, illness or the death of the employee.

'Building' includes-

a) Any structure attached to the soil;

b) Any building or such structure or part thereof which is in the process of being erected; or

c) Any prefabricated building or structure not attached to the soil

'Chief inspector' means the officer designated under Section 27 of the OHSAct as chief inspector, and includes any officer acting as chief inspector

'Commissioner' means the Compensation Commissioner appointed under section 2(1)(a); (xviii) of the COIDAct

'Compensation' means compensation in terms of this Act and, where applicable, medical aid or payment of the cost of such medical aid

'Compensation fund' means the fund established by section I5; (xli) of the COIDAct

'Danger' means anything which may cause injury or damage to persons or property

'Employee' means any person who is employed by or works for an employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person

'Employer' means any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him, but excludes a labour broker as defined in section I (1) of the Labour Relations Act, 1956 (Act 28 of 1956)

'Hazard' means a source of or exposure to danger

'Health and safety committee' means a committee established under section 19 of the OHSAct

'Health and safety equipment' means any article or part thereof which is manufactured, provided or installed in the interest of the health and safety of any person.

'Health and safety representative' means a person designated in terms of section 17 (1) of the OHSAct

'Health and safety standard' means any standard, irrespective of whether or not it has the force of law, which, if applied for the purpose of the OHSAct, will in the opinion of the Minister promote the attainment of an object of the OHSAct

'Healthy' means free from illness or injury attributable to occupational causes

'Incident' means an incident as contemplated in section 24 (1) of the OHSAct

'Inspector' means a person designated under section 28 of the OHSAct

'Medical surveillance' means a planned programme or periodic examination (which may include clinical examinations, biological monitoring or medical tests) of employees by an Occupational Health Practitioner or, in prescribed cases, by an Occupational Medicine Practitioner

'Minister' means the minister of department of labour.

'Municipality' hereby refers to Musina Local Municipality

'Occupational disease' means any disease contemplated in section 65(1)(a) or (b); (ix) of the COIDAct

'Occupational health' includes occupational hygiene, occupational medicine and biological monitoring

'Occupational Health Practitioner' means an occupational medicine practitioner or a person who holds a qualification in occupational health recognized as such by the South African Medical and Dental Council as referred to in the Medical, Dental and Supplementary

Health Services Professions Act, 1974 (Act 56 of 1974) or the South African Nursing Council as referred to in the Nursing Act, 1978 (Act 50 of 1978)

'Occupational hygiene' means the anticipation, recognition, evaluation and control of conditions arising in or from the workplace, which may cause illness or adverse health effects to persons

'Occupational injury' means a personal injury sustained as a result of an accident in the workplace

'Occupational medicine' means the prevention, diagnosis and treatment of illness, injury and adverse health effects associated with a particular type of work

'Occupational medicine practitioner' means a medical practitioner as defined in the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974), who holds a qualification in occupational medicine or an equivalent qualification which is recognized as such by the South African Medical and Dental Council referred to in the said Act

'Office' means an office as defined in section 1 (1) of the Basic Conditions of Employment Act, 1983 (Act No. 3 of 1983)

'Officer' means an officer or employee as defined in section 1 (1) of the
Public Service Act, 1984 (Act No. 111 of 1984)

'Plan' means an assessment document developed by the OHS Committee

'Policy' means the OHS Policy for Musina Local Municipality

'Reasonably practicable' means having practicable regard to

(a) the severity and scope of the hazard or risk concerned;

(b) the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk;

(c) the availability and suitability of means to remove or mitigate that hazard or risk; and

(d) the cost of removing or mitigating that hazard or risk in relation to the benefits deriving there from

'Remuneration' means any payment in money or in kind or both in money and in kind, made or owing to any person in pursuance of such person's employment

'Risk' means the probability that injury or damage will occur

'Safe' means free from any hazard

'Unit'-shall mean Occupational Health and Safety Sub-Directorate

'Work' means work as an employee or as a self-employed person, and for such purpose an employee is deemed to be at work during the time that he is in the course of his

employment, and a self -employed person is deemed to be at work during such time as he devotes to work as a self-employed person

'Workplace' means any premises or place where a person performs work in the course of his employment.

9.1. PREAMBLE

The need for the policy stems from the Occupational Health and Safety Act, 1993 which requires employers, including municipalities, amongst other things to develop and adopt an occupational health and safety policy.

Furthermore, this policy is intended to create a framework for decision making in respect of human resources management in as far as occupational health and safety is concerned in the Municipality.

To comply with the conditions relating to the Occupational Health and Safety Act, Act 85 of 1993 regarding the issue and control of safety equipment/protective clothing as well as to compile a policy on the issue and control of other clothing and uniforms which is not legally compulsory

The policy is intended to:

Promote and maintain the highest degree of physical, mental and social well-being of workers.

Prevent amongst workers, ill health caused by their working conditions.

Place and maintain workers in a working environment that is adapted to their individual physiological and psychological conditions.

Protect workers from factors adverse to their health.

Promote and maintain working environment that is free from harassment.

10.2. PURPOSE AND OBJECTIVES OF POLICY

The purpose of this policy is to serve as a guiding tool to ensure that the employer provides and maintain a healthy and safe work environment and also to enhance the health and safety of persons at work in connection with the operation of the municipality. The policy also provides for the protection of persons other than persons at work, against hazards to health and safety arising out of or in connection with the activities of persons at work.

The objectives of the policy are to:

- Guide the development of safe methods of work;

- Ensure the achievement of a safe working environment;
- Promote good health within the workforce;
- Reduce the number and severity of injuries in the workplace;
- Enhance compliance with all relevant Acts, Regulations, Standards and Codes of Practice.

10.3. SCOPE AND APPLICATION

This policy applies to all employees of the municipality, its clients and all the contractors doing any kind of work for the municipality.

10.4. LEGAL FRAMEWORK

- The Constitution of South Africa Act No.108 of 1996
- Basic Conditions of Employments Act (Act 75 of 1997)
- Labour Relations Act (Act 66 of 1995)
- Municipal Systems Act (Act 32 of 2000)
- Municipal Finance Management Act (Act 56 of 2003)
- Locally negotiated agreements (LL F Resolutions)
- Occupational Health and Safety Act (Act 85 of 1993 + Regulations)
- Compensation for Occupational Injury and Diseases (Act 85 of 1993)
- Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No.56 of 1974) or South African Nursing Council as referred to in the Nursing Act, 1978 (Act No.50 of 1978)

10.5. ADMINISTRATION OF THE POLICY

The Municipal Manager or his/her delegate assignee accepts overall responsibility for the implementation and monitoring of this policy.

10.6. POLICY CONTENT

10.6.1 OCCUPATIONAL HEALTH AND SAFETY STRUCTURES

a. Health and Safety committee

A health and safety committee must be established. The committee shall comprise of the following members.

- Members from different departments (elected health and safety reps or organized labour)
- OH&S Practitioner
- Employer representative
- OHS Reps
- First Aiders

Duties and responsibilities of the committee

- Discuss and make recommendations on common health and safety issues to the employer and all Departments
- Shall set and review Occupational health and Safety Standards
- Review the Occupational health and Safety Policy
- Shall meet quarterly
- Shall keep record of minutes and recommendations made to employer
- Discuss incidents/accidents that occurred at the workplace and recommend accordingly
- Make recommendations to the employer on matters affecting the health and safety of employees
- Note corrective actions taken by employer arising from reports received from health and safety representatives

b. Health and Safety Representatives

Election

- Every Department must elect their own health and safety representatives to represent the employees
- The Municipal Manager must appoint health and safety representatives to represent the employer in writing.
- Election shall be held every three years
- Elected employees must be able to read and write for training and reporting purpose

Duties and Responsibilities of Reps:

- Make representation to the employer on general matters, affecting the health and safety of employees
- Identify potential hazards and risks to the health and safety of employees in the workplace
- Investigate complaints by employees relating to his/her health and safety at work
- Make representation or recommendations to the employer on health and safety committee matters and any matter affecting health and safety of employees
- Carry out the quarterly inspections in the working place within their scope of authority
- Participate in consultation over health and Safety with inspectors at the workplace and accompany an inspector on any inspection of the workplace
- Attend all health and safety committee meetings, which he/she is a member of.

Rights of OHS Reps

- Visit the site of an incident at all reasonable times and attend to any inspection
- Attend any investigation or formal inquiry held in terms of this Act
- In so far as it is reasonably necessary for performing his/her functions, inspect any document which the employer is required to keep in terms of the Act
- Accompany an inspector on any inspection
- With the approval of the employer be accompanied by a technical advisor on any inspection
- Participate in any internal health and safety audit

10.6.2 STRATEGIES

a. Risk and Hazard Management:
    - The unit may establish and maintain a documented occupational health and safety system with procedures for identifying, assessing and controlling workplace hazards;

b. Consultation:
    - An Occupational Health and Safety Committee comprising of employees and management representatives will be maintained to provide an effective consultative mechanism.

- Employees are able to provide input into the occupational health and safety policy and program.
- Management will consult with contractors when planning to do any work to determine the most effective means of ensuring both parties fulfil their Occupational Health and Safety responsibilities.

c. Occupational Health and Safety Plan:

- In order to implement the general provisions of this policy, an Occupational Health and Safety Plan will be developed and implemented.
- Will be reviewed every 2 years unless otherwise needed to before the 2 years lapses.

10.6.3 **RESPONSIBILITIES**

a. Duties of the Employer:

- Provide and maintain as far as reasonably practicable, a safe and healthy working environment
- Assess the hazards within the workplace
- Assess all precautionary measures to effectively/mitigate any hazards or potential hazards
- Take such steps that would eliminate/mitigate the hazards
- Provide information, instruction and training as may be necessary to ensure the health and safety of employees
- Not permit an employee to perform any task without implementation of the precautionary measure, in respect of work, article, substance plant or machinery
- Take necessary measures to ensure that all employees comply with the requirements of the Act
- Enforcing measures in the interest of health and safety
- Cause all employees to be informed regarding the scope of their authority
- Ensure that all work is performed under the general supervision of a person trained to understand the hazards associated with such task and who has the authority to enforce the utilization of all precautionary measures
- Ensure that persons other than those in the employment of the municipality who may be affected directly by his /her activities are therefore not exposed to hazards

- The Municipal Manager and Departmental Managers have the responsibility and accountability to ensure that the duties of the employer as contemplated in the Act are adhered to.
- The Municipal Manager is accountable for ensuring that all legal Occupational Health and Safety responsibilities are fulfilled. Therefore, the Municipal Manager must ensure that sufficient Occupational Health and Safety resources are made available in all operations, financial forecasts and budgets, and performance measurement and management systems as Occupational Health and Safety is an integral part of every operation and activity.
- The Municipal Manager can assign duties to any person under his control, which person shall act subject to his control and directions.
- The head of each Department shall have duties assigned to assist the Municipal Manager to ensure compliance with the act.

TAKE NOTE:

- ✓ The responsibilities of managing the Occupational Health and Safety programme can be delegated to a person/s appointed by the Municipal Manager to co-ordinate the OH&S Programme in terms of Section 16(2) of the OHS Act, without absolving the Municipal Manager of his responsibilities and accountability for overall OH & S compliance.
- ✓ The appointee will ensure total compliance with the OHS Legislation by all parties in his/her control – Employers, Employees, Committee, Contractors, Visitors, the public/community, Suppliers, Installers, and Distributors.
- ✓ Implementation of this policy and the associated program activities will be evaluated as part of their Performance Contract.

b. Duties of employees

Within the structure of duties, created by the Act, employees are burdened with duties, as the legislative body realized that by placing sole responsibility on management for compliance would not effectively implement the objectives of the legislation.

It should however be borne in mind that the duties of employees are entirely subject to the duties of management and that the prosecution will only take cognizance of an employee's shortcomings, in the event where management has complied with all duties concerned and are able to prove such compliance

- Take reasonable care for their own health and safety and for other persons, including co-employees, visitors as well as contractors.
- To co-operate with the employer in complying with management duties
- To carry out any lawful order made in relation to health and safety
- To report all unsafe conditions to the employer
- To report incidents, including near misses to the employer
- Not to intentionally interfere with, damage or misuse any item provided in the interest of health and safety in the workplace.

a) Contractors, Sub-Contractors and Visitors:

- All visitors, contractors and sub-contractors engaged to perform work on the premises or locations of Municipality are required, as part of their contract, to comply with the Occupational Health and Safety Policies, procedures and programs and to observe directions on health and safety from designated officers of Musina Local Municipality.
- Failure to comply or observe a direction will be considered as a breach of the contract and sufficient grounds for termination of the contract.

10.6.4 **HANDLING OF HAZARDOUS CHEMICAL SUBSTANCES**

- Every person who manufactures, imports, sells or supplies any hazardous chemical substances for use at work, shall as far as is reasonably practicable provide the party receiving such substances, free of charge with an MSDS subject to the provision of section 10 of the OHSAct.
- This is done to ensure that the products received by the Municipality is safe and without risks when properly used and that it complies with all prescribed requirements
- All received chemicals must have the MSDS accompanying them
- If the above – mentioned information is not supplied with the delivered chemicals, such chemical/ product must not be received
- The employer must be in possession of sufficient information of any hazardous chemical substances for use at work.
- The employer/ supplier must educate the workers on how to use the chemical
- All chemicals shall be stored in a lockable store room and identified as such
- Chemicals must be stored in cool dry area and not mixed with other materials

10.6.5 REPORTING, INVESTIGATING AND MANAGEMENT OF INCIDENCES/IOD'S ACCIDENTS AND OCCUPATIONAL DISEASES

a) REPORTING OF INCIDENCES

PROCEDURE

1. The main incident topic should be reflected in the first line
2. Details of the incident must be reflected
3. The person present at the time of the incident must make a declaration and reflect his/her rank.
4. The intervention/ responses to the incident are to be reflected.
5. Future plan to prevent the same incident should be outlined
6. The name of the person present at the time of the incident should be reflected.
7. The date and time of the incidents should be reflected
8. The department where the incident occurred must be reflected
9. The signature of the declarer, the witness and the signing place should be reflected
10. The date and time of the compilation of the incident report must be reflected at the end of the report

a) INVESTIGATION OF INCIDENT

The OHSAct requires that the above mentioned incidents should be investigated within three months. The investigation must take place as soon as is reasonably practicable.

The person to conduct the investigation is any of the following:

- The OHS practitioner/ or risk manager
- The health and safety rep of the area
- The supervisor of the section

Investigation must be discussed at the OHS Committee meetings.

The report must be signed by the chairperson of OHS committee and employer.

b) REPORTING OF INJURY ON DUTY

If an employee is injured in an accident arising out or in the course of their work, they are entitled to compensation at the discretion of the commissioner.

PROCEDURE

1. All injuries on duty must be reported to supervisor before going off duty

2. The supervisor and injured employee must complete WCL 2 in duplicate (part A and B) with personal particulars and description of what happened. The supervisor must sign the form
3. If the supervisor refuses to fill the accident form, the worker can report the incidents to the commissioner by sending WCL 3 form directly to the commissioner.
4. The commissioner will contact the employer and instruct him/her to fill in the WCL 2 form
5. Identity document must always accompany forms
6. The attending Doctor must complete a first medical report and attach it to employer's report form for accepting liability of claim
7. The WCL 2 form must be forwarded to OHS Unit and will be entered in to a register. A copy of WCL 2 is forwarded to the commissioner.
8. The original document is forwarded to human Resource department for further management
9. Progress and final medical report will be sent by the attending doctor to the commissioner. Progress medical report is completed if the injury takes long time to heal. In the final medical report, the doctor states either that the worker is fit to go back to work or that the worker is permanently disabled. This document is sent to the employer who will send it to the commissioner.
10. When employee report for duty after leave for occupational injury and disease, resumption report must be completed by the employer. The report states when the worker returned back to work
11. The payments for any treatment must be charged to the Municipality

c) FIRST AID AFTER INCIDENT OR INJURY

1. First aid level 3 in the department renders immediate first aid on the sport
2. The OHS Practitioner and OHS Reps are informed for assistance if no first aid is available.
3. The employee is then transported to casualty department in the nearest hospital for further management

d) OCCUPATIONAL DISEASE

PROCEDURE

1. When an employee is diagnosed with an occupational disease, it must be reported to the supervisor as soon as possible
2. The employee must report to the OHS Unit to fill WCL 14
3. Identity document must always accompany forms
4. The employer will complete the WCL 1
5. If the employer refuses to complete the WCL 1, the employee sends the WCL 14 to the commissioner directly. The commissioner will contact the employer and instruct him or her to complete the WCL 1.
6. Documents must be forwarded to OH Unit for entering in to a register, then sent to Human Resource department for further management.

e) **REFUSAL TO WORK PROCEDURE**

Every employee has the right to refuse to work if he/she feels that his or her health and safety are at risk. When this situation arises the following steps must be followed.

1. Employee stop to work
2. Contact Supervisor
3. Disagree with Supervisor
4. Contact Health and Safety Representative
5. Disagree with Health and Safety Representative
6. Contact sectional /departmental Manager
7. Disagree with sectional /departmental Manager
8. Contact Occupational Health and Safety Officer.
9. OHS assessment of risk will be final.

Great care should be taken by employees not to misuse the procedure as it can lead to disciplinary actions.

10.6.5. MEDICAL SURVEILLANCE

- Baseline Medical Surveillance will be conducted on all employees
- Periodic Medical examination will be conducted on employees according to job specification
- The municipality will be liable for medical costs

- The medical examination will be conducted by the Occupational Health and Safety Officer and an Occupational Medical Practitioner
- The relevant forms will be completed and records will be kept in the office of the Occupational Health and Safety Officer
- Confidentiality will be maintained on the findings, supervisor will not be informed of the findings provided employees informed consent has been obtained.
- Feedback on the findings will be given to the employees
- Employees that are exposed to the following shall be tested annually:
- Noise (Hearing test)
- Chemicals
- Industrial dust (Lung X-Rays and Lung Function Tests)

All medical reports shall be kept by Occupational Health and Safety and shall be treated as confidential.

10.6.6 INTOXICATION

- No person shall be permitted to enter any workplace who is or who appears to be under the influence of intoxicating liquor or drugs. In cases where employee e.g. a driver is suspected to be intoxicated, a traffic official or OMP may be called to test the person.
- Employees taking medicines shall be permitted to perform duties at the workplace if the side effects of such medicine do not constitute a threat to the health and safety of the person concerned or other at such workplace.

10.6.7 CONTRACTORS

- Any contractor doing work for Musina Local Municipality must complete a written agreement in terms of Occupational Health and Safety. Before any work can commence the Contractor must hand in a letter of good standing with the Compensation Commissioner to Occupational Health and Safety.
- Contractors that will perform any construction work as defined by the Construction Regulations shall hand in their Health and Safety Plan before commencing with their work.
- It is the responsibility of Musina Local Municipality to make sure that all contractors comply with the requirements of Occupational Health and Safety Act unless if there is an appointed agency

10.6.9 FIRE EXTINGUISHERS

- All fire extinguishers at Municipal premises should be numbered and recorded in a register.

- These fire extinguishers will be checked monthly by the Health and Safety representatives of the area.
- These fire extinguishers should be serviced annually.
- Every three years these fire extinguishers should be pressure tested by a service provider.
- The service provider should comply with the following legal requirements:
    - Valid SABS certification
    - Valid registration at S.A.Q.C.C. Fire
    - Registration at the Compensation Commissioner

Disciplinary action will be taken if fire extinguishers are misused or tampered

10.6.10 PERSONAL PROTECTIVE CLOTHING

- The employer should provide the relevant PPE to the staff free of charge
- The employer shall explain and demonstrate the correct use of PPE to staff.
- The employer shall inform all staff in his/her working area about the hazards they are exposed to.
- All Managers should identify the need of particular PPE relevant for his/her unit
- Protective equipment should be SABS approved
- Care and maintenance of PPE should be explained to staff
- PPE shall be used only for protective purposes at work, not for other purpose outside work and not for other purpose other than work which they are bought for.
- When the PPE is not in use it should be taken off until it is needed again
- New PPE will be ordered only after producing the old/torn ones.
- The PPE is changed after every three years or when the need arises.
- All employees who are issued with PPE must sign upon receipt for control purpose.
- All PPE should be labeled

10.7 DEFAULT

Non-compliance of any of the stipulations contained in the Policy will be viewed as misconduct and will be dealt with in terms of the Municipality's disciplinary Code.

MUSINA LOCAL MUNICIPALITY

TENDER NO. 17-2023/24

CONSTRUCTION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD TRAFFIC OFFICE

TENDER DRAWINGS

ENQUIRY PERSON : C NKUNA

COMPILED DATE :	*DECEMBER 2023*	***REVISION***
REVISED DATE :	*MAY 2024*	***NO.: 1***

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NOTES

LIST OF DRAWINGS

#	DRAWING TITLE	DRAWING NUMBER	AMENDMENT NO.
1	LAYOUT : MAIN OFFICE	VPN02 : LAY. MAIN OFFICE - 01	0
2	LAYOUT : OLD TRAFFIC OFFICE	VPN02 : LAY.OLD TRAFFIC OFFICE - 01	0
3	TYPICAL PERIMETER FENCE	VPN02 : TYPICAL PERIMETER FENCE - 01	0
4	TYPICAL GATES & WALK WAY DETAILS	VPN02 : GATES & WALK WAY DETAILS- 01	0
5	GUARD HOUSE	VPN02 : GUARD HOUSE - 01	0
6	PROJECT NAME BOARD	VPN02 : PROJECT NAME BOARD - 01	0

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

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AMENDMENTS

NO.	DATE	DESCRIPTION	AUTHORISED BY
0	OCT 2023	PRELIMENARY DRAWINGS	
0	MAY 2024	TENDER DRAWINGS	

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PROJECT TITLE:
CONSTRUCTION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD T R A F F I C O F F I C E

DRAWING TITLE:
LIST OF DRAWINGS

CLIENT:
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APPROVED:
ON BEHALF OF CLIENT: DATE:

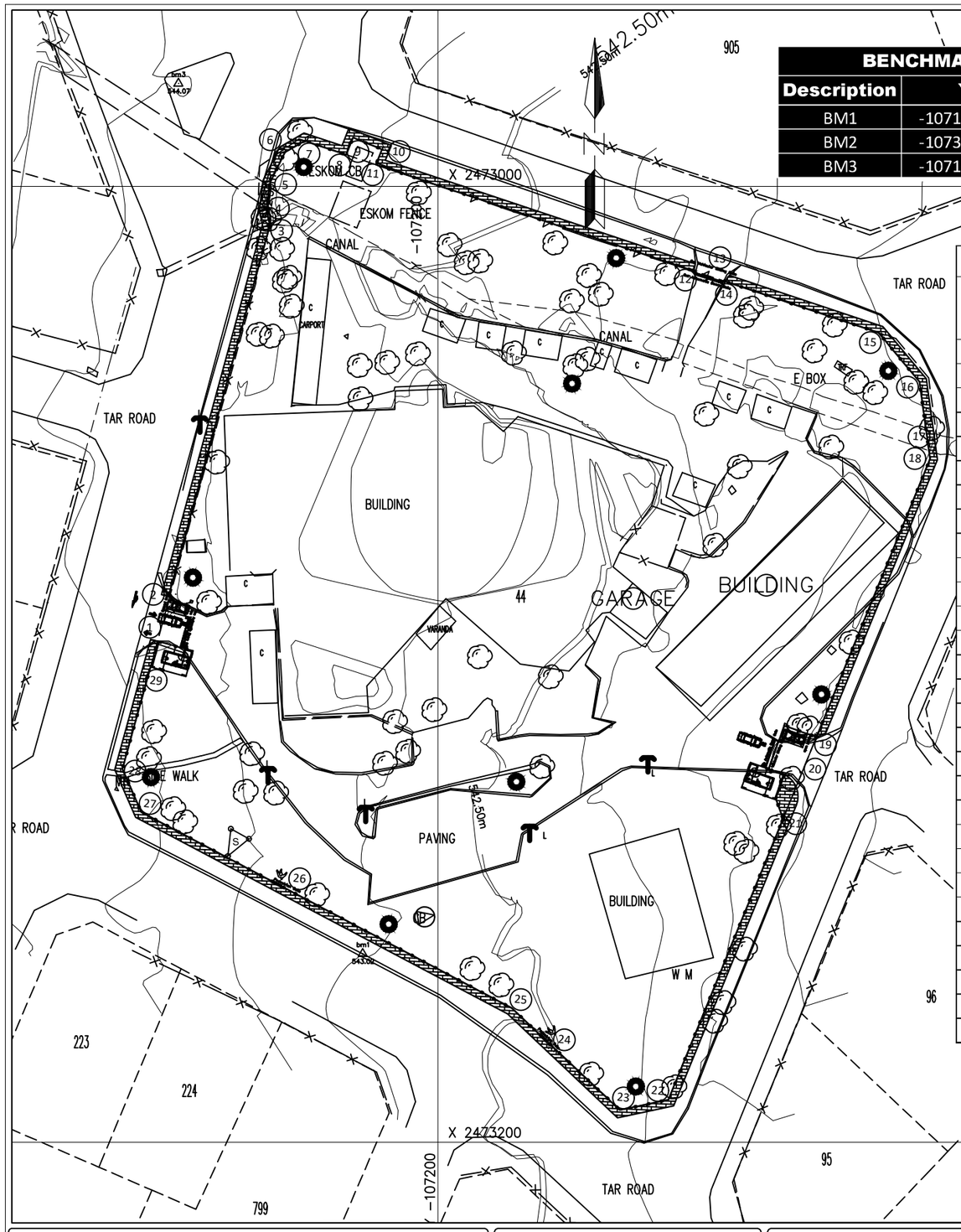
APPROVED:
ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024

DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: LIST OF DRAWINGS–01
17–2023/24 : MUSINA MUNICIPAL OFFICES

AMENDMENT NO: 1



BENCHMARKS - Main Offices

Description	Y	X	Z
BM1	-107184.273	2473160.575	543.024
BM2	-107316.433	2473000.928	540.753
BM3	-107145.683	2472978.478	544.073

Fence Setting Out Data Table - Main Office

Point	Co-Ordinates		Description
	Y	X	
1	-107142,0356	2473091,932	Vihicular Gate
2	-107143,7092	2473085,379	Corner Post
3	-107164,8346	2473008,11	Corner Post
4	-107164,1354	2473004,968	Corner Post
5	-107164,8632	2472999,239	Corner Post
6	-107168,0105	2472992,878	Corner Post
7	-107172,1417	2472990,491	Corner Post
8	-107180,8217	2472993,391	Corner Post
9	-107182,2489	2472989,797	Corner Post
10	-107188,3204	2472992,27	Corner Post
11	-107187,02	2472995,462	Corner Post
12	-107253,5989	2473017,711	Corner Post
13	-107257,0853	2473018,876	Vihicular Gate
14	-107260,2005	2473019,913	Corner Post
15	-107292,2831	2473030,632	Corner Post
16	-107300,8529	2473040,921	Corner Post
17	-107302,5399	2473053,159	Water Canal
18	-107303,071	2473057,011	Corner Post
19	-107279,2753	2473115,235	Corner Post
20	-107277,0265	2473120,737	Vihicular Gate
21	-107272,2926	2473132,32	Corner Post
22	-107248,2637	2473191,115	Corner Post
23	-107238,1012	2473193,26	Corner Post
24	-107222,2105	2473178,294	Pedestrian Gate
25	-107215,4498	2473171,927	Corner Post
26	-107166,2938	2473145,943	Pedestrian Gate
27	-107137,8995	2473130,933	Corner Post
28	-107133,9644	2473121,924	Corner Post
29	-107139,8357	2473100,545	Corner Post

LEGEND

- Proposed Perimeter Fence
- Proposed Walk/Side Way
- Proposed Camera / Lighting
- Existing Tree
- Erf Boundary / Cadastral
- Existing Light
- Existing Fence
- Existing Road Kerb
- C — Car Parking
- Power Line
- Existing Building

NOTES

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

Copyright vests in the Musina Local Municipality

AMENDMENTS

NO.	DATE	DESCRIPTION	AUTHORISED BY
0	OCT 2023	PRELIMENARY DRAWINGS	
0	MAY 2024	TENDER DRAWINGS	

VUTANI CONSULTING SERVICES
PASSION FOR ENGINEERING EXCELLENCE
NaPe Multi Professionals (PTY) LTD "Reservoir of Professionals"
VUTANI Consulting Services cc / NAPE Multi Professionals (PTY) LTD JV
79 Componentia Street
POLOKWANE
0699
Tel: 015 291 1413 / 297 1048
Fax: 015 291 1017 / 297 1043
E-mail address: admin@vutani.co.za / office@nape-m-p.co.za

PROJECT TITLE:
CONSTRUCTION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD T R A F F I C O F F I C E

DRAWING TITLE:
LAYOUT : MAIN OFFICE

CLIENT:
MUSINA LOCAL MUNICIPALITY
P/BAG X 611
MUSINA
0900
TEL: 015 – 534 6100
EMAIL: Mukondelelin@musina.gov.za

APPROVED:
ON BEHALF OF CLIENT: DATE:

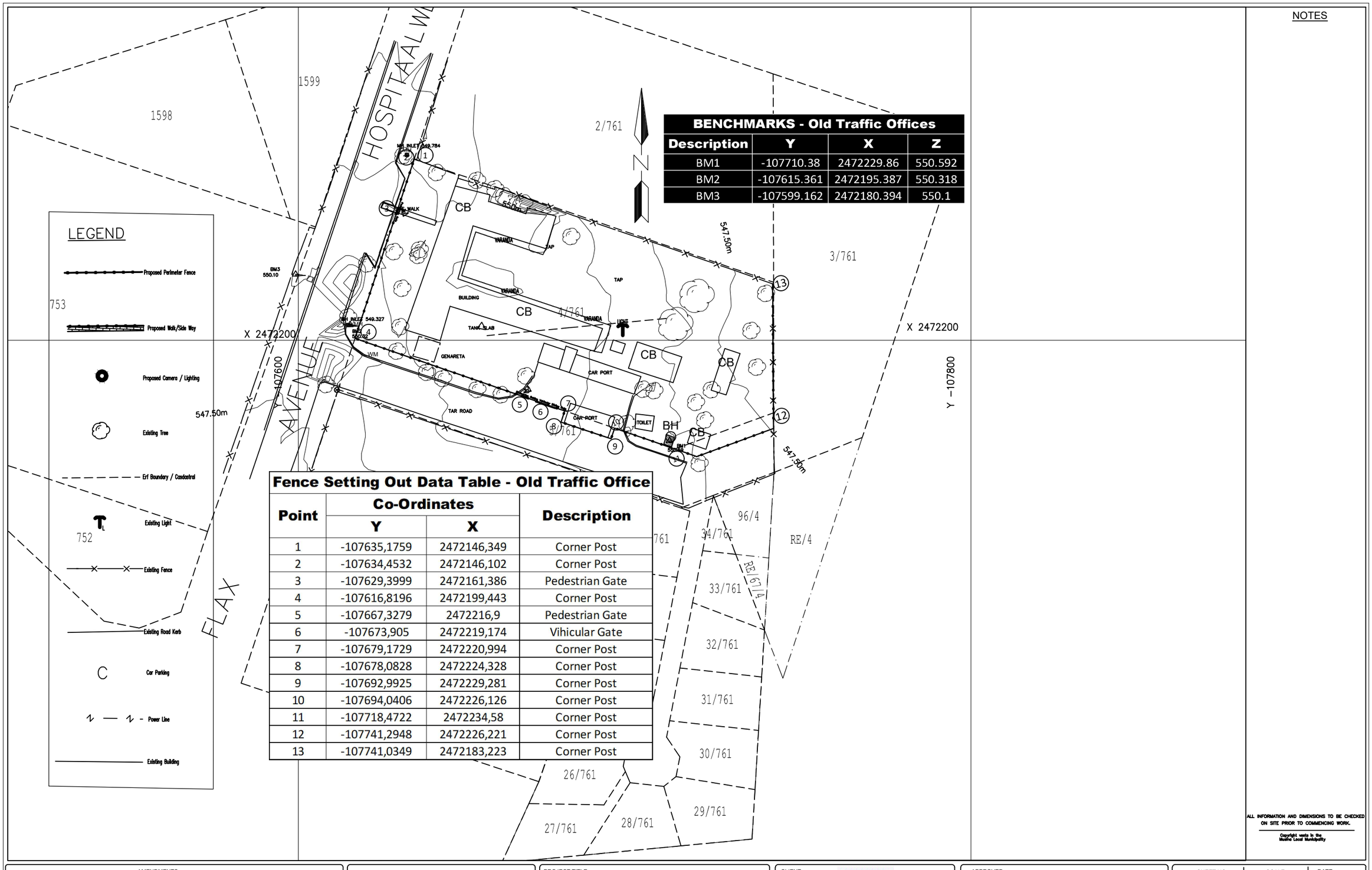
APPROVED:
ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024

DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: LAY.MAIN OFFICE–01
17–2023/24 : MUSINA MUNICIPAL OFFICES

AMENDMENT NO: 1



BENCHMARKS - Old Traffic Offices

Description	Y	X	Z
BM1	-107710.38	2472229.86	550.592
BM2	-107615.361	2472195.387	550.318
BM3	-107599.162	2472180.394	550.1

Fence Setting Out Data Table - Old Traffic Office

Point	Co-Ordinates		Description
	Y	X	
1	-107635,1759	2472146,349	Corner Post
2	-107634,4532	2472146,102	Corner Post
3	-107629,3999	2472161,386	Pedestrian Gate
4	-107616,8196	2472199,443	Corner Post
5	-107667,3279	2472216,9	Pedestrian Gate
6	-107673,905	2472219,174	Vihicular Gate
7	-107679,1729	2472220,994	Corner Post
8	-107678,0828	2472224,328	Corner Post
9	-107692,9925	2472229,281	Corner Post
10	-107694,0406	2472226,126	Corner Post
11	-107718,4722	2472234,58	Corner Post
12	-107741,2948	2472226,221	Corner Post
13	-107741,0349	2472183,223	Corner Post

NOTES

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

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AMENDMENTS

NO.	DATE	DESCRIPTION	AUTHORISED BY
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0	MAY 2024	TENDER DRAWINGS	

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PASSION FOR ENGINEERING EXCELLENCE
NaPe Multi Professionals (PTY) LTD "Reservoir of Professionals"
VUTANI Consulting Services cc / NAPE Multi Professionals (PTY) LTD JV
79 Compensatie Street
POLOKWANE
0699
Tel: 015 291 1413 / 297 1048
Fax: 015 291 1017 / 297 1043
E-mail address: admin@vutani.co.za / office@nape-m-p.co.za

PROJECT TITLE:
CONSTRUCTION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD T R A F F I C O F F I C E

DRAWING TITLE:
LAYOUT : OLD TRAFFIC OFFICE

CLIENT:
MUSINA LOCAL MUNICIPALITY
P/BAG X 611
MUSINA
0900
TEL: 015 – 534 6100
EMAIL: Mukondeleiln@musina.gov.za

APPROVED:
ON BEHALF OF CLIENT: DATE:

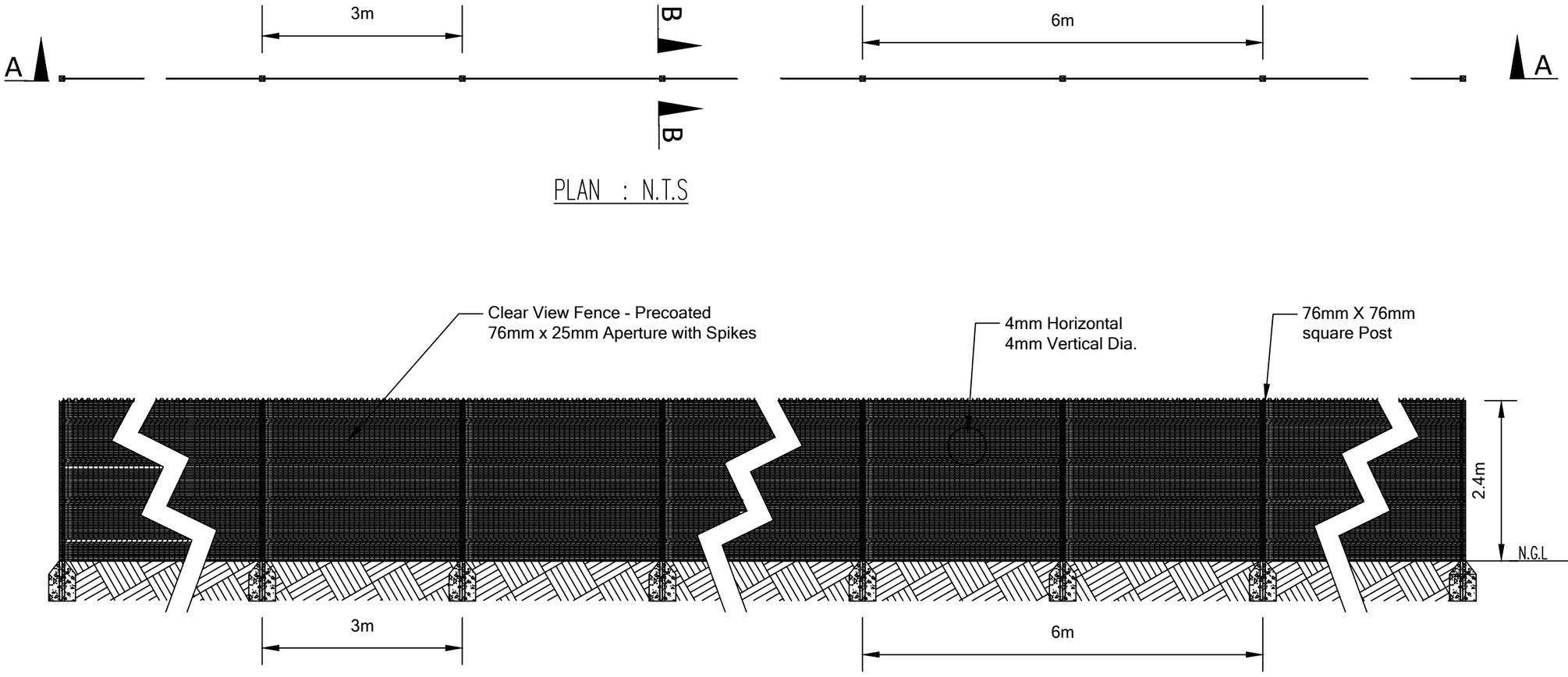
APPROVED:
ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024

DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: LAY.OLD TRAFFIC OFFICE–01 17–2023/24 : MUSINA MUNICIPAL OFFICES

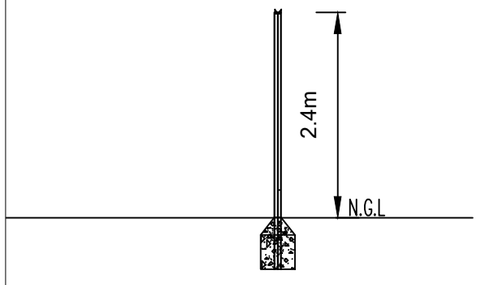
AMENDMENT NO: 1



PLAN : N.T.S

SECTION A – A : N.T.S

PERIMETER FENCE - CLEAR VIEW) : N.T.S



SECTION B – B : N.T.S

NOTES

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

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AMENDMENTS

NO.	DATE	DESCRIPTION	AUTHORISED BY
0	OCT 2023	PRELIMENARY DRAWINGS	
0	MAY 2024	TENDER DRAWINGS	

VUTANI CONSULTING SERVICES
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79 Compensatie Street
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0699
Tel: 015 291 1413 / 297 1048
Fax: 015 291 1017 / 297 1043
E-mail address: admin@vutani.co.za / office@nape-m-p.co.za

PROJECT TITLE:
CONSTRUCTION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD T R A F F I C O F F I C E

DRAWING TITLE:
TYPICAL PERIMETER FENCE

CLIENT:
MUSINA LOCAL MUNICIPALITY
P/BAG X 611
MUSINA
0900
TEL: 015 – 534 6100
EMAIL: Mukondeleliw@musina.gov.za

APPROVED:
ON BEHALF OF CLIENT: DATE:

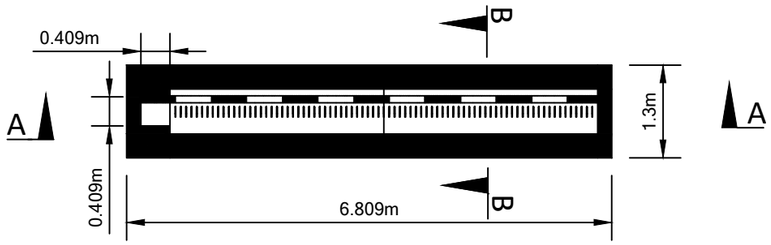
APPROVED:
ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024

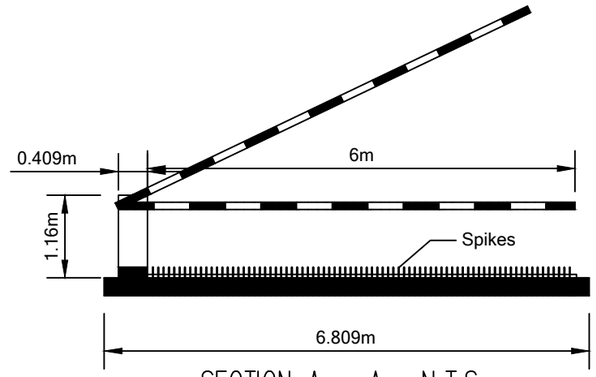
DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: TYPICAL PERIMETER FENCE–01
17–2023/24 : MUSINA MUNICIPAL OFFICES

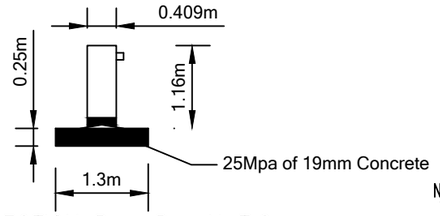
AMENDMENT NO: 1



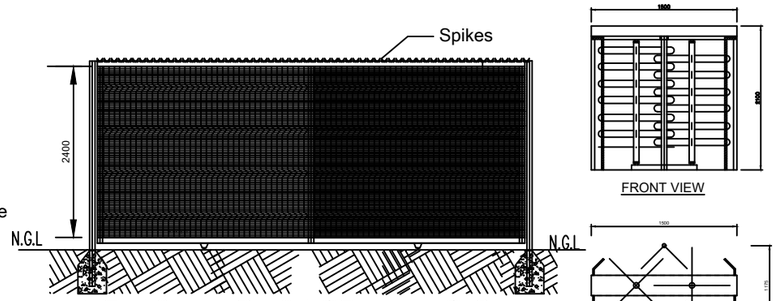
PLAN : N.T.S



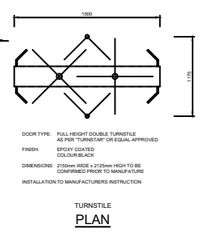
SECTION A – A : N.T.S



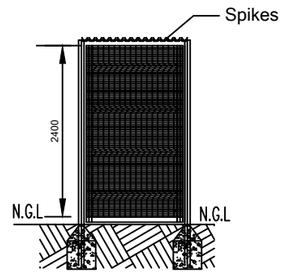
SECTION B – B : N..T.S



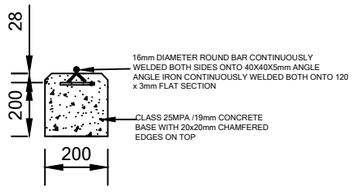
VEHICULAR GATE : N.T.S



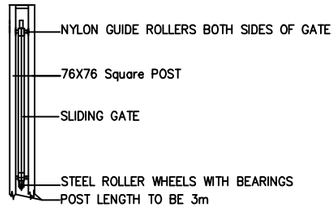
TURNSTILE
PLAN



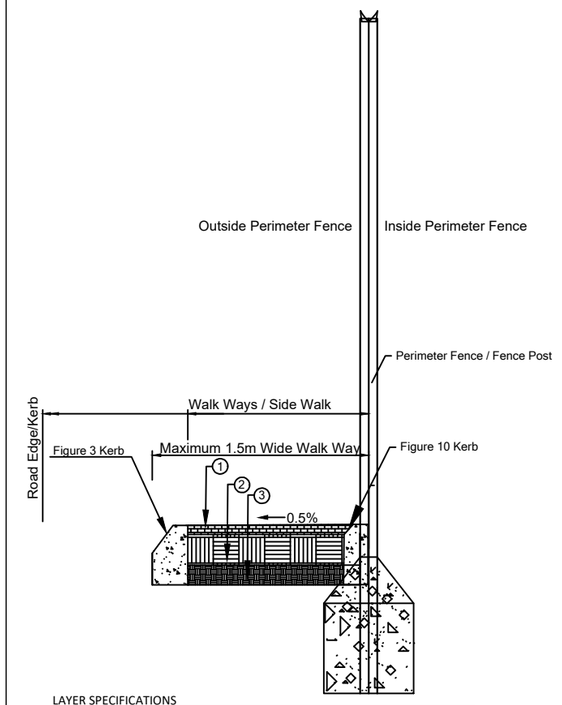
PEDESTRIAN GATE : N.T.S



SLIDING GATE FOOTING : N.T.S



SLIDING GATE POSTS : N.T.S



LAYER SPECIFICATIONS

1. 60mm INTERLOCKING PAVING BLOCK.
2. 150mm BASE LAYER: MINIMUM G6 COMPACTED TO 95% MOD AASHTO.
3. RIP AND COMPACT IN-SITU MATERIAL TO 90% MOD AASHTO DENSITY

TYPICAL SECTION DETAIL SHOWING LAYER WORKS
PEDESTRIAN WALK WAYS / SIDE WALK

NOTES

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

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GATES

AMENDMENTS

NO.	DATE	DESCRIPTION	AUTHORISED BY
0	OCT 2023	PRELIMENARY DRAWINGS	
0	MAY 2024	TENDER DRAWINGS	

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0699
Tel: 015 291 1413 / 297 1048
Fax: 015 291 1017 / 297 1043
E-mail address: admin@vutani.co.za / office@nape-m-p.co.za

PROJECT TITLE:
CONSTRUCTION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD T R A F F I C O F F I C E

DRAWING TITLE:
TYPICAL GATES : CLEAR VIEW & WALK WAY DETAILS

CLIENT:
MUSINA LOCAL MUNICIPALITY
P/BAG X 611
MUSINA
0900
TEL: 015 – 534 6100
EMAIL: Mukondeleiln@musina.gov.za

APPROVED:
ON BEHALF OF CLIENT: DATE:

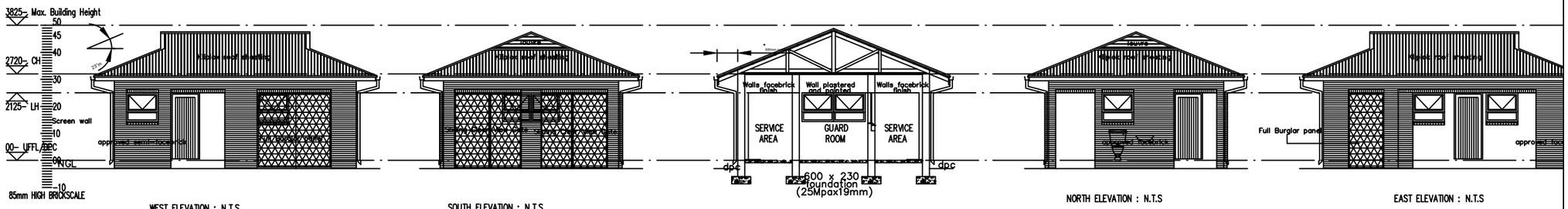
APPROVED:
ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024

DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: GATES & WALK WAY DETAILS–01 17–2023/24 : MUSINA MUNICIPAL OFFICES

AMENDMENT NO: 1



WEST ELEVATION : N.T.S

SOUTH ELEVATION : N.T.S

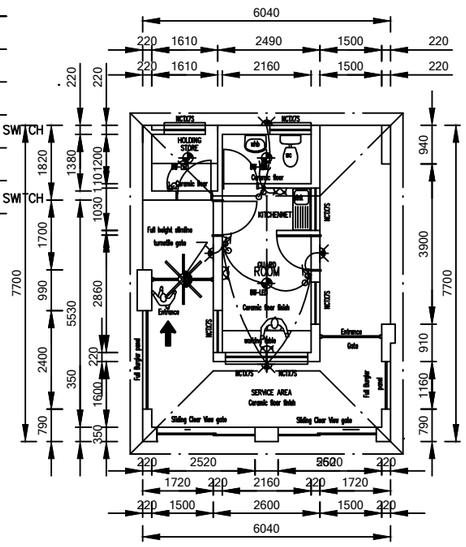
SECTION A-A : N.T.S

NORTH ELEVATION : N.T.S

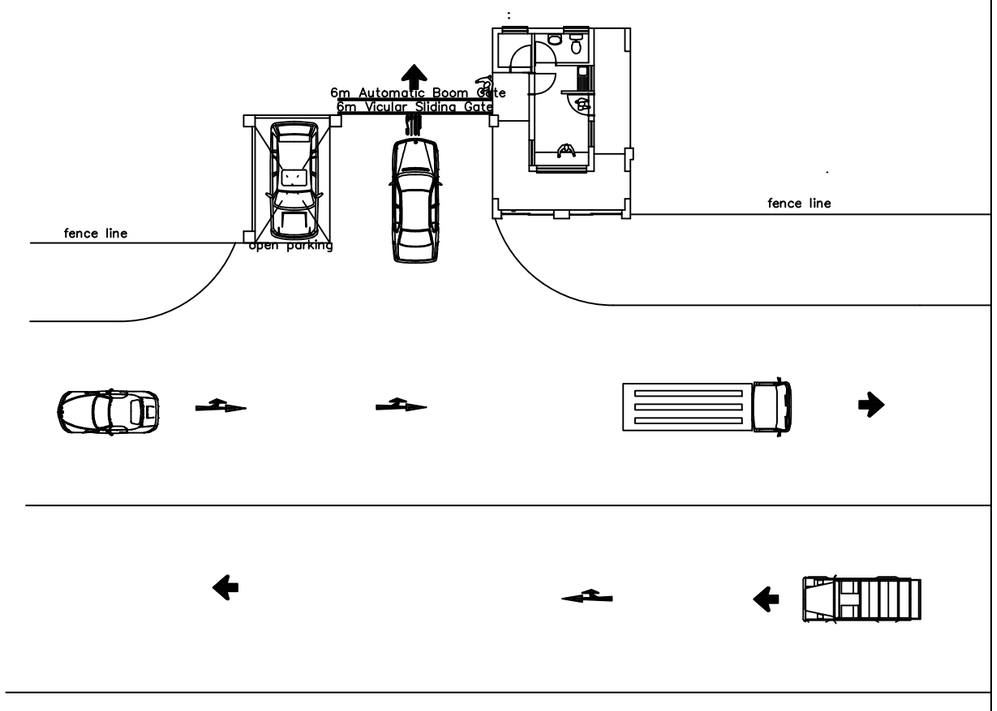
EAST ELEVATION : N.T.S

ELECTRICAL LEGEND.

	CEILING LIGHT FITTING
	WALL MOUNTED LIGHT FITTING.
	FLUORESCENT LIGHT FITTING DOUBLE – 1,5m
	15 AMP POWER POINT
DB	D.B. BOARD.
	DUAL POWER POINT
	STOVE CONNECTION POINT
	1–LIGHT SWITCH
	2 LIGHT SWITCHES, 1 OF WHICH IS 2–WAY SWITCH
	2–LIGHT SWITCH.
	3 LIGHT SWITCHES, 1 OF WHICH IS 2–WAY SWITCH



GROUNDFLOOR PLAN : N.T.S
(AREA = 46.5m²)



SITE PLAN : N.T.S

A: EARTHWORKS
A1 75mm(h) minimum hardcore fill, rammed in layers of 150mm(h) to 93% mod minimum(to be superseded by civil eng. drawing).
A2 10 years minimum guarantee insecticide to comply with NBR.

B: CONCRETE, FORMWORK AND RE–INFORCEMENT
B1 FOUNDATIONS: 600mm(w)x230(h)mmx25mpa min. concrete strip to concrete level pegs as per civil engineer's drawings.
B2 FLOOR SLAB: 100mm(h)x25mpa min. in-situ vibrated concrete to unfinished floor level(UFL).
B3 ROOF SLAB: 100mm(h)x30mpa vibrated in–situ re–inforced concrete to oiled formwork and finished with wooden float.
B4 SCREED: 30mm(h)x25mpa screed finished with wooden float
B5 APRON: 85mm(h)x1000mm(w)x25mpa concrete to max span of 3m finished with wooden float to fall(1:10) away from building.
B6 LINTOLS: 85mm(h)x110mm(w) precast re–inforced concrete to all openings with 110 minimum overlap into brickwork.

C: MASONRY
C1 FOUNDATION WALLS: 220mm(w) stockbrick built in stretcher bond with 10mm cement flush joints in both ways to natural ground level(NGL).
C2 SUPERSTRUCTURAL WALL(External) : 220mm(w) facebrick in stretcher bond with 10mm raked out joints in both directions built up to roof soffit.
C3 NONE–STRUCTURAL WALL(Internal): 110mm(w) stockbrick in stretcher bond with 10mm(h) cement flush joints to extend one coarse above ceiling height .
C4 ROLLER COARSE: 220mm(w) facebrick with-10mm(h) raked joints.
C5 EXTERNAL WINDOW CILL: 220mm(w) facebrick with 10mm(h) raked out joints and to fall 15deg away with 25mm(l) minimum drip mould.
C6 INTERNAL WINDOW CILL: 160mm(w)x10mm(h) fibre cement
C7 FASCIA BOARD: 225mm(h)x12mm(w) fibre cement profile.

D: WATERPROOFING
D1 DAMP PROOVE COURSE (DPC): 375micron brickgrip laid in one way and sandwiched in mortar at the unfinished floor level
D2 DAMP PROOVE MEMBRANE (DPM): 250micron gundle USB green sandwiched in mortar below all windows and floor slabs.
D3 Slip joint(SJ): 375micron brickgrip laid in oneway on top of brickwork wherever in–situ concrete is cast onto brickwork.
D4 SEALANT: 10–20mm(w) to be filled in all expansion and saw–cut joints.

E: ROOF COVERING
E1 ROOF COVERING: SABS approved cement roof tile laid on to 38mmx38mm pine branderings spaced as per manufacture's spec. to match existing in manufacture, size, colour and profile.
E2 RIDGE CAP: Cement ridge cap as per manufacture's spec to match existings in manufacture, size colour and profile.
E3 FLASHINGS/COUNTER FLASHINGS & VALLEYS: 0.6mm pressed steel as per manufacture's specifications and to match existings.

F: CARPENTARY AND JOINERY
F1 WALL PLATE: 114mmX38mm carbonated south african pine GRADE fixed to trusses with 76mm galvanised clouded nails.
F2 ROOF TRUSSES: SABS approved gangnail roof trusses spaced at maximum 760mm c/c. in one way with 600mm minimum overhang and braced with flash back as per finishing schedule.
F3 EXTERNAL DOOR: 2032mm(h)x877mm(w)x44mm(b) meranti ledged and braced with 38mm galvanised clouded nails.
F4 INTERNAL DOOR: 2032mm(h)x877mm(w)x44mm(b) hollowcore section
F5 SKIRTING: 76mm(h)x19mm(w) meranti fixed to wall with concrete nails spaced at 250mm c/c
F6 QUARDRANT: 19mm pine nailed to skirting with 38mm nails at 400mm c/c maximum spacing.

G: CEILING
G1 BRANDERINGS: 38mmX38mm pine at 400mm c/c maximum spacing fixed to trusses with 76mm galvanised clouded nails.
G2 CEILING BOARD: 6.4mm(h) thick fibre cement fixed to branderings with 38mm galvanised clouded nails.
G3 CORNICE: 76mm(h)x76mm(w) fibre cement fixed to branderings with 38mm galvanised clouded nails.
G4 TRAP DOOR: 600mm(l)x600mm(w) standard metal frame and lid.

H: FLOOR COVERING & EXTERNAL GROUND FINISHES
H1 FLOOR LINING: All floor linings shall be as per joinery specification and finished as per finishing schedule.
H2 EXTERNAL GROUND: 220mm(l)x110mm(W)x60mm(h) precast paving interlocking paving bricks laid on 93% mod hardcore fill. Hardcore fill to be soil poisoned, covered with damp proove membrane, 50mm(h) maximum riversand blinding, grouted with clean plaster and levelled with 90kg maximum plate compactor with two passes in different(crossing) directions.

I: METALWORK
I1 DOOR FRAME: 2032mm(h)X877mm(W)X115mm(l)X1.2mm pressed double rebated frame complete with welded metal hinges,lugs, polished and deeped with oxide prime coat.
I2 STEEL WINDOW FRAME: Heavy duty rolled steel frame with all corners mitred, welded, with lugs,polished and deeped in prime coat.
I3 ALUMINIUM FRAME: 30mm casement section type, finished in bronze powder coat, complete with safety glass, weatherprooved with vinyl seals and woolpile.

J: IRONMONGERY
J1 EXTERNAL: 4Xlever lock set kit per door leaf.
J2 INTERNAL: 3Xlever lock set kit per door leaf.
J3 GENERAL: Master key as per manufacture's specifications.
J4 GENERAL EXTERNAL: 50mm minimum padlock.

K: PLASTERING
K1 EXTERNAL/INTERNAL: 10mmx20mpa minimum thic ceiling height, finished with steel trowel to take as per finishing schedule.

L: DRAINAGE AND PLUMBING
L1 All WORKS: SABS approved material as per the N Building Regulations and local municipal by–laws.

M: FINISHES
M1 MASONARY: High gloss enamel paint applied on primer coat.
M2 METALWORK: Sued acrylic emulsion coat applied grease, dust and contaminants surfaces.
M3 WOOD: Semi–gloss polyurethane enamel with nor on none oil, grease, dust and contaminants surf

NOTES

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

Copyright vests in the Musina Local Municipality

AMENDMENTS

NO.	DATE	DESCRIPTION	AUTHORISED BY
0	OCT 2023	PRELIMENARY DRAWINGS	
0	MAY 2024	TENDER DRAWINGS	

VUTANI CONSULTING SERVICES
PASSION FOR ENGINEERING EXCELLENCE
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Tel: 015 291 1413 / 297 1048
Fax: 015 291 1017 / 297 1043
E-mail address: admin@vutani.co.za / office@nape-m-p.co.za

PROJECT TITLE:
DESIGN AND SUPERVISION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD TRAFFIC OFFICE

DRAWING TITLE:
GUARD HOUSE

CLIENT:
MUSINA LOCAL MUNICIPALITY
P/BAG X 611, MUSINA, 0900
TEL: 015 – 534 6100
EMAIL: Mukondeleline@musina.gov.za

APPROVED:
ON BEHALF OF CLIENT: DATE:

APPROVED:
ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024

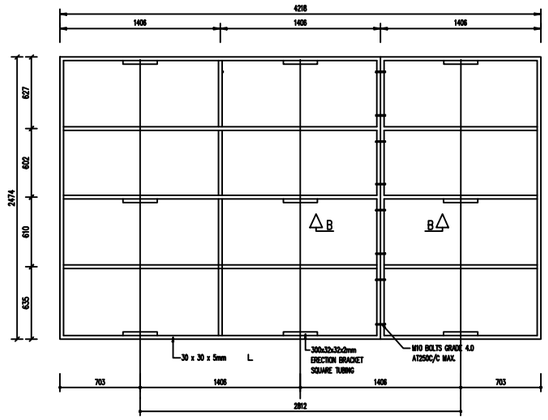
DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: GUARD HOUSE–01
17–2023/24 : MUSINA MUNICIPAL OFFICES

AMENDMENT NO: 1



FRONT ELEVATION



REAR SIDE BRACING

NOTES:

EMBLEME:

1. ALL EMBLEMS TO BE DISPLAYED IN FULL COLOUR ON A SEMI-MATT BACKGROUND.

LETTERS AND NUMBERS:

2. DESCRIPTION : MATT-BLACK, SERIES DIN B LETTERS AND NUMBERS ON A SEMI-MATT SMOKE-GREY BACKGROUND.

BORDERS:

3. BORDER : GREEN NON-REFLECTORIZED.

QUANTITY:

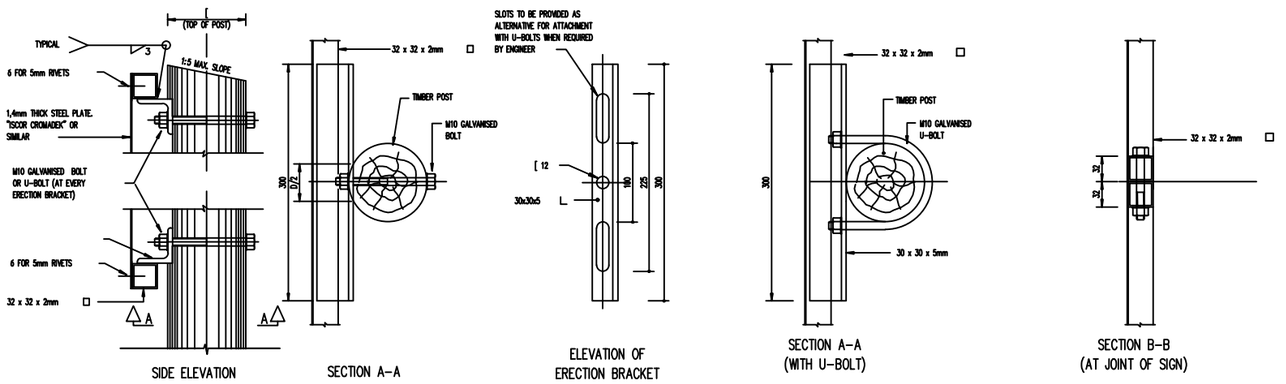
4. TWO SIGN BOARDS, SHALL BE ERECTED AT POSITIONS AS DETERMINED BY THE ENGINEER.

DESCRIPTION:

5. DESCRIPTION OF WORK (NUMBER OF KILOMETRES AND TYPE OF WORK, eg."13.5km RECONSTRUCTION OF ROAD 1974." DESCRIPTION STARTS CENTERED ON THE LEFT-HAND SIDE AND THE FIRST 105mm-DIMENSION BELOW "NORTHERN"

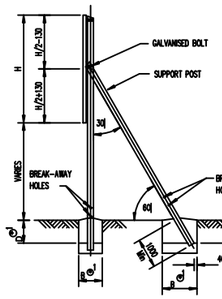
6. SAFCEC EMBLEM ONLY IF CONTRACTOR IS A MEMBER OTHERWISE BLANK.

7. SAACE / SABTACO LOGO TO BE OBTAINED FROM SAACE / SABTACO OFFICES

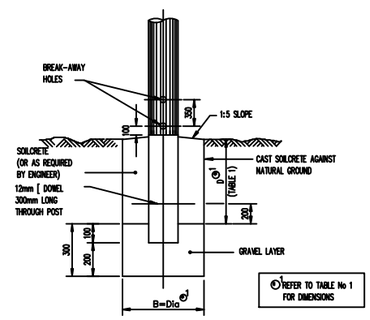


FIXING DETAIL FOR SIGN BOARDS

TABLE 1: DETERMINATION OF POSTS & FOOTINGS						
ERECTION DETAILS						
TYPE OF POST		UPRIGHT	STAY	D	B(DIA)	
TIMBER POST AND STAY		100mm	80mm	600mm	850mm	
TIMBER POST		180mm		1000mm	1450mm	
D SECTION STEEL POST		100mm x 4mm	-	1000mm	1450mm	



SIDE ELEVATION OF ROAD SIGN



FOUNDATION DETAIL

DETERMINATION OF BREAK-AWAY HOLES	
POLE DIA (mm)	HOLE DIA (mm)
< 140	NONE
141 – 170	40
171 – 200	50
201 – 225	65

ALL INFORMATION AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK.

Copyright vests in the Musina Local Municipality

AMENDMENTS			
NO.	DATE	DESCRIPTION	AUTHORISED BY
0	OCT 2023	PRELIMENARY DRAWINGS	
0	MAY 2024	TENDER DRAWINGS	

VUTANI CONSULTING SERVICES
PASSION FOR ENGINEERING EXCELLENCE
NaPe Multi Professionals (PTY) LTD "Reservoir of Professionals"
VUTANI Consulting Services cc / NAPE Multi Professionals (PTY) LTD JV
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0699
Tel: 015 291 1413 / 297 1048
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E-mail address: admin@vutani.co.za / office@nape-m-p.co.za

PROJECT TITLE: DESIGN AND SUPERVISION WORK FOR ENHANCING SECURITY FEATURES OF MAIN OFFICE AND OLD TRAFFIC OFFICE

DRAWING TITLE: PROJECT NAME BOARD

CLIENT: MUSINA LOCAL MUNICIPALITY
P/BAG X 611
MUSINA
0900
TEL: 015 – 534 6100
EMAIL: Mukondeleli@musina.gov.za

APPROVED: ON BEHALF OF CLIENT: DATE:

APPROVED: ON BEHALF OF ENGINEER: DATE:

SHEET NO:	SCALE:	DATE:
1 OF 1	N. T. S	MAY 2024
DESIGNED:	DRAWN:	CHECKED:
P.D.L	M.S.N	C.N

DRAWING NO: VNP02: PROJECT NAME BOARD–01
17–2023/24 : MUSINA MUNICIPAL OFFICES

AMENDMENT NO: 1

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
1	**SABS 1200A**	**SECTION 1: PRELIMINARY AND GENERAL, PRIME COST SUMS AND PROVISIONAL SUMS**				
1.1	**8.3**	**Fixed-Charge items :**				
1.1.1	8.3.1	Contractual requirements (including insurances)	Sum	1		
1.1.2		Establishment facilities on the site				
1.1.2.1	8.3.2.1	Facilities for the Engineer				
		(a) Engineer's office and furnishing	Sum	1		
		(b) Ablution and latrine facilities	Sum	1		
		(c) Parking facilities	Sum	1		
		(d) Survey equipment	Sum	1		
		(e) Photo-copying machine	Sum	1		
		(g) Cellular phone	Sum	1		
1.1.2.2	8.3.2.2	Facilities for the contractor				
		(a) Office and storage shed	Sum	1		
		(b) Workshops	Sum	1		
		(c) Laboratories	Sum	-		R/Only
		(d) Living accommodation	Sum	1		
		(e) Ablution and latrine facilities	Sum	1		
		(f) Tools and equipments	Sum	1		
		(g) Water suppliers	Sum	1		
		(h) Electric power	Sum	1		
		(i) Communications	Sum	1		
		(j) Setting out of works	Sum	1		
		(k) Dealing with water	Sum	1		
		(l) Access and accommodation of traffic	Sum	1		
1.1.2.3	8.3.2.1	Nameboard (Two)	Sum	1		
1.1.2.4	8.3.3	Other fixed-charge obligations	Sum	1		
1.1.2.4	8.3.4	Removal of Engineer's and contractor's site establishment and reinstatement of site on completion	Sum	1		
1.2	**8.4**	**Time-related items :**				
1.2.1	8.4.1	Contractual requirements (including insurances)	Month	4		
1.2.2		Operate and maintain facilities on site				
1.2.2.1	8.4.2.1	Facilities for the Engineer				
		(a) Engineer's office and furnishing	Month	4		
		(b) Ablution and latrine facilities	Month	4		
		(c) Parking facilities	Month	4		
		(d) Survey equipment	Month	4		
		(e) Photo-copying machine	Month	4		
		(f) Cellular phone	Month	4		
1.2.2.2	8.4.2.2	Facilities for the contractor				
		(a) Office and storage shed	Month	4		
		(b) Workshops	Month	4		
		(c) Laboratories	Month	4		
		(d) Living accommodation	Month	4		
		(e) Ablution and latrine facilities	Month	4		
		(f) Tools and equipments	Month	4		
		(g) Water supplies	Month	4		
		(h) Electric power	Month	4		
		(i) Communications	Month	4		
		(j) Setting out of works	Month	4		
		(k) Dealing with water	Month	4		
		(l) Access and accommodation of traffic	Month	4		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
1.2.2.3	8.4.2.1	Nameboard (Two)	Month	4		
1.2.2.4	8.4.3	Supervision and company and head office overhead cost	Month	4		
1.2.2.5	8.4.5	Other time related obligations (specify.....)	Month	4		
1.3	PSAB8-1	**Telephone calls etc**				
1.3.1		Engineer's telephone calls (@2500 / month)	**Prov.sum**	**1**	**10 000,00**	**R 10 000,00**
1.3.1.1		Percentage adjustment on items 1.3.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4	8.5	**Provisional Sums, Price Cost Items and Dayworks**				
1.4.1	PSA8.5	Locating, protection, alteration and relocation of existing services	**Prov.sum**	**1**	**R 80 000,00**	**R 80 000,00**
1.4.1.1		Percentage adjustment on items 1.4.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 80 000,00**		
1.4.2		Provision of PC Computer/Laptop, A4 Printer and A 3 Printer as per specified by the Engineer	**Prov.sum**	**1**	**R 45 000,00**	**R 45 000,00**
1.4.2.1		Percentage adjustment on items 1.4.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 45 000,00**		
1.4.3	PSA8-8	Provision of accomodation / rented house/hotel for the Engineer represantative(s)	**Prov.sum**	**1**	**R 40 000,00**	**R 40 000,00**
1.4.3.1		Percentage adjustment on items 1.4.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R 40 000,00**		
1.4.4		**Accredited training of local labour**				
1.4.4.1		Allow for in-service training of local labour at a recommended practical institutional training centre	**Prov.sum**	**1**	**R 100 000,00**	**R 100 000,00**
1.4.4.1.1		Percentage adjustment on items 1.4.4.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 100 000,00**		
1.4.5		**In-service training of local labour**				
1.4.5.1		Allow for on-site period of training of local labour	Sum	1		
1.4.6		**Management of labour intensive work**				
1.4.6.1		Allow for the management of labour intensive work	Sum	1		
1.4.7	8.3.3	**Occupational Health and Safety**				
1.4.7.1		**Compensation for Occupational Injuries and Disease Act (COID)**				
1.4.7.1.1		Allow for the application for the COID Act to all employees	Sum	1		
1.4.7.1.2		Compliance with the OHS act, incluidng Health and Safety file and all associated regulations	Sum	1		
1.4.7.1.3		Provision for Ocuppational Safety Consultant (Nominated Sub-consultant)	**Prov.sum**	**1**	**R 200 000,00**	**R/Only**
1.4.7.1.3.1		Percentage adjustment on items 1.4.7.1.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.7.1.4		Provision for Health and Safety Representative (SHE REP), @ R5000/month	**Prov.sum**	**1**	**R 20 000,00**	**R 20 000,00**
1.4.7.1.4.1		Percentage adjustment on items 1.4.7.1.4 for contractor's overheads and profit (state % and extend as an amount)	%	**R 20 000,00**		
1.4.8	8.3.3	**Enviromental Management Plan**				
1.4.8.1		Compliance with the Environmental Management Plan and all associated regulations	**Prov.sum**	1	**R 20 000,00**	**R 20 000,00**
1.4.8.1.1		Percentage adjustment on items 1.4.8.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 20 000,00**		
1.4.8.2		Provision for Environmental Impact Assesment Consultant (Nominated Sub-consultant)	**Prov.sum**	**1**	**R 200 000,00**	**R/Only**
1.4.8.2.1		Percentage adjustment on items 1.4.8.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.9		**Institutional Social Development**				
1.4.9.1		Provision of Community Liason Officer (@ 6000/month)	**Prov.sum**	**1**	**R 24 000,00**	**R 24 000,00**
1.4.9.1.1		Percentage adjustment on items 1.4.9.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 24 000,00**		
1.4.9.2		Provision of Project Steering Committee meetings allowance (@ 250 / sitting /month, for 5 members)	**Prov.sum**	**1**	**R 5 000,00**	**R 5 000,00**
1.4.9.2.1		Percentage adjustment on items 1.4.9.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 5 000,00**		
1.4.9.3		Student In-Service Training / Internship (x 2), (@ 5000/month each)	**Prov.sum**	**1**	**R 48 000,00**	**R 48 000,00**
1.4.9.3.1		Percentage adjustment to item 1.4.9.3	%	**R 48 000,00**		
1.4.9.4		Provision for Technical Social Consultant (Nominated Sub-consultant)	**Prov.sum**	**1**	**R 200 000,00**	**R/Only**
1.4.9.4.1		Percentage adjustment on items 1.4.9.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.10		**Engineering Professional Services**				
1.4.10.1		Provision for extra Engineering Professional Services not included in the contract	**Prov.sum**	**1**	**R 100 000,00**	**R 100 000,00**
1.4.10.1.1		Percentage adjustment on items 1.4.10.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 100 000,00**		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
1.4.11		**Testing**				
1.4.11.1		Acceptance control testing ordered by the Engineer by an approved independent laborotary, including travelling expenses and supply of test results	**Prov.sum**	**1**	**10 000,00**	**R 10 000,00**
1.4.11.1.1		Percentage adjustment on items 1.4.11.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4.11.2		Goods or materials to be supplied to the site of the Works in terms of the contract	**Prov.sum**	**1**	**R 10 000,00**	**R 10 000,00**
1.4.11.2.1		Percentage adjustment on items 1.4.11.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4.11.3		Transport and labour to handle and install (A5.12) above as specified in specification	**Prov.sum**	**1**	**R 8 000,00**	**R 8 000,00**
1.4.11.3.1		Percentage adjustment on items 1.4.11.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R 8 000,00**		
1.4.11.4		Provision for Geotechnical / Material investigator (Nominated Sub-consultant)	**Prov. Sum**	**1**	**R 80 000,00**	**R 80 000,00**
1.4.11.4.1		Percentage adjustment on items 1.4.11.4 for contractor's overheads and profit (state % and extend as an amount)	%	**R 80 000,00**		
1.4.12	8.7 PSA8.4	**Daywork**				
1.4.12.1		**Labour**				
1.4.12.1.1		Skilled	h	-		R/Only
1.4.12.1.2		Semi-skilled	h	-		R/Only
1.4.12.1.3		Unskilled	h	-		R/Only
1.4.12.2		**Materials**				
1.4.12.2.1		Net cost of goods or materials	**Prov.sum**	**1**	**R 10 000,00**	**R 10 000,00**
1.4.12.2.1.1		Percentage adjustment on items 1.4.12.2.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R 10 000,00**		
1.4.12.3		**Contractor's own plant** (Tenderer must provite details of suitable plant)				
1.4.12.3.1		Excavator				
		Minimum power : 75kW (Similar to "Cat 215")				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.2		T L B				
		Minimum power : 50kW (Similar to" case 580G")				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.3		Front-end loader				
		minimum power : 60kW (Similar to "Cat 920")				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.4		Vibrating pedestrian roller				
		Minimum drum width: 0,39m Minimum poewr: 3,7kW				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.5		Vibrating plate compactor				
		minimum power: 2kW				
		Manufacturer				
		Model	h	-		R/Only
1.4.12.3.6		Platform truck				
		Minimum load mass : 4t	h	-		R/Only
1.4.12.3.7		Tip truck				
		Minimum load mass : 4t Minimum load capacity :6m^3	h	-		R/Only
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
1.4.12.3.8		Compressor complete with two hand-held tools and attachments				
		minimum capacity : $7m^3/_{minute}$				
		Manufacturer ……				
		Model ……	h	-		R/Only
1.4.12.3.9		Centrifugal pump, 150mm dia, with hoses				
		Manufacturer ……				
		Model ……	h	-		R/Only
1.4.13	8.8	**Temporary Works**				
1.4.13.1	8.8.1	Main Access Road to Works (construct and maintain)	Sum	-		R/Only
1.4.13.2	8.8.2	Dealing with Traffic	Sum	1		
1.4.13.3	8.8.3	Protection of the Works until Construction in Vicinity is Complete	Sum	1		
1.4.14	8.8.4	**Existing services**				
		(a) Supply or hire of specialist equipment for the detection for a particular services	Sum	1		
		(b) The use of equipment referred to in item (a) above	Sum	1		
		(c) Excavation by hand in soft material to expose existing service	Day	2		
		(d) Temporary protection, as required in terms of the project specification, of service	Day	10		
1.4.15		**Survey beacons / pegs**				
1.4.15.1	8.8.5	Search for record, reference and protect survey stations, bench marks, erf boundary pegs and other reference pegs and expose on completion of works	**Prov.sum**	**-**	**R 3 000,00**	**R/Only**
1.4.15.1.1		Percentage adjustment on items 1.4.15.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
1.4.15.2	8.8.5	Re-establish erf boundary pegs by a Registered land surveyor when pegs have been ordered to be removed for the execution of the works	**Prov.sum**	**1**	**60 000,00**	**R 60 000,00**
1.4.15.2.1		Percentage adjustment on items 1.4.15.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R 60 000,00**		
1.4.15.3		Provision for Engineering Land Surveyor (Nominated Sub-consultant)	**Prov. Sum**	**1**	**R 80 000,00**	**R/Only**
1.4.15.3.1		Percentage adjustment on items 1.4.15.3 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
TOTAL CARRIED TO SUMMARY						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
2	**SANS 1200DB**	**SECTION 2 : PERIMETER FENCING AND SECURITY FEATURES (LI)**				
2.1		**MAIN OFFICE**				
2.1.1	**1200DB**	**Earthworks (Pipe trenches)**				
2.1.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	600		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	10		
2.1.2	**1200DB**	**Excavation**				
2.1.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up - to				
		a) 0,0m 1,0m	m	120		
		b) 1,0m 2,0m	m	-		R/Only
2.1.2.2	8.3.2.(b)	Extra-over item 2.1.2.1				
		a) Hard rock excavation (Prov)	m^3	6		
2.1.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	96		
2.1.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	102		
2.1.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	51		
2.1.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	51		
		b) long haul : over 1km (Prov)	m^3-km	1020		
2.1.3		**Extra over all excavations for carting away**				
2.1.3.1		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	102		
2.1.4		**Risk of collapse of excavations**				
2.1.4.1		Sides of trench and hole excavations not exceeding 1,5m deep	m^2	114		
2.1.5		**Keeping excavations free of water**				
2.1.5.1		Keeping excavations free of water	Sum	1		
2.1.6	**1200DB**	**Existing Services**				
2.1.6.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	No.	-		R/Only
		b) Sewer pipeline	No.	-		R/Only
		c) Electrical Line	No.	-		R/Only
2.1.6.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	m	-		R/Only
		b) Sewer pipeline	m	-		R/Only
		c) Electrical Line	m	-		R/Only
2.1.7		**Filling. etc**				
2.1.7.1		**Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density**				
2.1.7.1.1		Backfilling to trenches, holes, etc	m^3	-		R/Only
2.1.8		**Soil Poisoning**				
2.1.8.1		**Soil insecticide to be executed with SABS compliance by a firm of specialists under a 10 year guarantee**				
2.1.8.1.1		Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	-		R/Only
2.1.8.1.2		To bottoms and sides of trenches etc	m^2	-		R/Only
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
2.1.9		**Unreinforced concrete cast against excavated surfaces**				
2.1.9.1		**25MPa/19mm concrete**				
2.1.9.1.1		Strip footings	m^3	3		
2.1.9.1.2		Bases in foundations (Provisional)	m^3	6		
2.1.10		**Test cubes**				
2.1.10.1		Allow for all necessary concrete test cubes 150 x 150 x 150mm cast from batches of concrete required for the entire contract as specified, made, stored, cured and test in accordance with SANS methods 861 and 863 including use of approved cube moulds, transporting to an approved testing laboratory for testing , paying	**Prov.Sum**	**1**	**R10 000,00**	**R10 000,00**
2.1.11		**Perimeter Fence**				
2.1.11.1		Dismantle existing steel palisade fence, and deliver to store in the place ordered by the enigineer.	m	50		
2.1.12.1		**Clear View Fence**				
2.1.12.1.1		Supply and erect galvinized-black plascoated (4 x 4 / 25 x 76), 2400mm high fence, with spikes on top, as per supplier / manufacture's secifications complete with 3000mm post, i.e 3050mm x 2400mm panels, 25,7mm x 76,2mm mesh opening, 4mm horizontal and 4mm vertical wires fence.	m	600		
2.1.12.2		**Raizor Wire Fence**				
2.1.12.2.1		Supply and erect galvanized coiled raizer wire on top of perimeter fence , 450mm coil diameter , fixed to 4mm x 3,15mm galvinized straining barbed wires, including poles and Y section using 2mm binding wire (or as approved/specified by engineer)	m	-		R/Only
2.1.13		**Gates** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of gates as indicated on the Drawings with the respected sizes and positions.				
2.1.13.1		**Vehicular Gates**				
2.1.13.1.1		Supply and erect Clear view Vehicular Sliding Gate, with spikes on top, 8000mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No	3		
2.1.13.2		**Pedesdrian Gates**				
2.1.13.2.1		Supply and erect Clear view Sliding Pedestrian Gate/burglar door , 2100mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No	2		
2.1.13.2.2		Supply and erect Clear view Pedestrian Gate, with spikes, 1200mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No.	4		
2.1.13.2.3		Supply and erect Steel Palisade Pedestrian Gate, 1200mm(Wide) X 2400mm (High) with spikes	No.	-		R/Only
2.1.13.3		**Turnstile**				
2.1.13.3.1		Turnstar Triumph 3 or similar approved single full height turnstile	No.	2		
2.1.13.4		**Gate Motors**				
2.1.13.4.1		Supply and install a centurion D10 Smart turbo sliding gate operator motor steel rack kit or smilar approved by Engineer	No.	3		
2.1.13.5		**Boom Gates and Claws**				
2.1.13.5.1		Supply and install a complete three 6m Centurion Sector II or similar approved boom gates, with flush mount spike barrier with 3CR12 powder coated stainless steel housing, bogic, detectors, 2 x Internal Motors and 6m boom arm or similar as approaved by Engineer, including concrete plinth for claws.	**Prov.Sum**	**1**	**R600 000,00**	**R600 000,00**
2.1.13.5.1.1		Percentage adjustment on items 2.1.13.5.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R600 000,00**		
2.1.14		**Access controls (gooseneck)** Tendered rates for Gooseneck shall include fully for all labour, materials, equipment and transportation required for the supply and installation of Centurion goosenecks or similar approved. Tendered rates for Access card/face/finger reader shall include fully for all labour, materials, equipment and transportation required for the supply and installation of access readers				
2.1.14.1		Supply and install Three Centurion gooseneck or similar approved	**Prov.Sum**	**1**	**R30 000,00**	**R30 000,00**
2.1.14.2		Supply and install Three Access card/face/finger reader, to be approved by Engineer	**Prov.Sum**	**1**	**R24 000,00**	**R24 000,00**
2.1.14.2.1		Percentage adjustment on items 2.1.14.1 and 2.1.14.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R54 000,00**		
2.1.15		**CCTV Cameras** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of cameras as spcified positions.				
2.1.15.1		Supply and install 32 Channel Wireless Kit 6TB HDD, colorvu technology , human detection , Audio & Siren, 4MP collour bullet IP camera 4mm-13,5mm 60M view including 8 poles and POE, 650m coper cable and suffax. The Engineer to approve the sysytem before supply and installation	**Prov.Sum**	**1**	**R750 000,00**	**R750 000,00**
2.1.15.1.1		Percentage adjustment on items 2.1.15.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R750 000,00**		
2.1.16		**Office Name branding**				
2.1.16.1		Supply and erection of name branding of the offices (1 for Old Traffic Offices and 2 for Main Offices	**Prov.Sum**	**1**	**R40 000,00**	**R40 000,00**
2.1.16.1.1		Percentage adjustment on items 2.1.16.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R40 000,00**		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
2.2		**OLD TRAFFIC OFFICE**				
2.2.1		**Perimeter Fence**				
2.2.1.1		Dismantle existing concrete palisade fence, and deliver to store in the place ordered by the enigineer.	m	50		
2.2.1.2		**Clear View fence**				
2.2.1.2.1		Supply and erect galvinized-black plascoated (4 x 4 / 25 x 76), 2400mm high fence, with spikes on top, as per supplier / manufacture's secifications complete with 3000mm post, i.e 3050mm x 2400mm panels, 25,7mm x 76,2mm mesh opening, 4mm horizontal and 4mm vertical wires fence.	m	240		
2.2.1.3		**Raizor Wire Fence**				
2.2.1.3.1		Supply and erect galvanized coiled raizer wire on top of perimeter fence , 450mm coil diameter , fixed to 4mm x 3,15mm galvinized straining barbed wires, including poles and Y section using 2mm binding wire (or as	m	180		
2.2.1.4		**Gates** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of gates as indicated on the Drawings with the respected sizes and positions.				
2.2.1.4.1		**Vehicular Gates**				
2.2.1.4.1.1		Supply and erect Clear view Vehicular Sliding Gate, with spikes on top, 8000mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No	1		
2.2.1.4.2		**Pedesdrian Gates**				
2.2.1.4.2.1		Supply and erect Clear view Sliding Pedestrian Gate/burglar door , 2100mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No.	-		R/Only
2.2.1.4.2.2		Supply and erect Clear view Pedestrian Gate, with spikes, 1200mm (Wide) X 2400mm (High) Anthracite PES Coated or smilar approved by Engineer	No.	2		
2.2.1.4.2.3		Supply and erect Steel Palisade Pedestrian Gate, 1200mm(Wide) X 2400mm (High) with spikes	No.	-		R/Only
2.2.1.4.3		**Turnstile**				
2.2.1.4.3.1		Turnstar Triumph 3 or similar approved single full height turnstile	No.	-		R/Only
2.2.1.4.4		**Gate Motors**				
2.2.1.4.4.1		Supply and install a centurion D10 Smart turbo sliding gate operator motor steel rack kit or smilar approved by Engineer	No.	1		
2.2.1.4.5		**Boom Gates and Claws**				
2.2.1.4.5.1		Supply and install a complete one 6m Centurion Sector II or similar approved one boom gate , flush mount spike barrier with 3CR12 powder coated stainless steel housing, bogic, detectors, 2 x Internal Motors and 6m boom arm or similar as approaved by Engineer, including concrete plinth for claws.	**Prov.Sum**	**1**	**R165 000,00**	**R/Only**
2.2.1.4.5.1.1		Percentage adjustment on items 2.2.1.4.5.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
2.2.1.5		**Access Controls (Gooseneck)** Tendered rates for Gooseneck shall include fully for all labour, materials, equipment and transportation required for the supply and installation of Centurion goosenecks or similar approved. Tendered rates for Access card/face/finger reader shall include fully for all labour, materials, equipment and transportation required for the supply and installation of access readers				
2.2.1.5.1		Supply and install One Centurion gooseneck or similar approved	**Prov.Sum**	**1**	**R10 000,00**	**R10 000,00**
2.2.1.5.2		Supply and install One Access card/face/finger reader, to be approved by Engineer	**Prov.Sum**	**1**	**R8 000,00**	**R8 000,00**
2.2.1.5.2.1		Percentage adjustment on items 2.2.1.5.1 and 2.2.1.5.2 for contractor's overheads and profit (state % and extend as an amount)	%	**R18 000,00**		
2.2.1.6		**CCTV Cameras** Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of cameras as spcified positions.				
2.2.1.6.1		Supply and install 32 Channel Wireless Kit 6TB HDD, colorvu technology , human detection , Audio & Siren, 4MP collour bullet IP camera 4mm-13,5mm 60M view including 8 poles and POE, 650m coper cable and suffax. The Engineer to approve the sysytem before supply and installation	**Prov.Sum**	**1**	**R750 000,00**	**R/Only**
2.2.1.6.1.1		Percentage adjustment on items 2.2.1.6.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R/Only**		**R/Only**
2.2.1.7		**Office Name branding**				
2.2.1.7.1		Supply and erection of name branding of the offices (2 in number)	**Prov.Sum**	**1**	**R40 000,00**	**R40 000,00**
2.2.1.7.1.1		Percentage adjustment on items 2.2.1.7.1 for contractor's overheads and profit (state % and extend as an amount)	%	**R40 000,00**		
TOTAL CARRIED TO SUMMARY						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
3		**SECTION 3 : GUARD HOUSE (LI)** Construct the Guard houses complete as per drawings including earthworks, foundation excavations, importation of material under surface bed, concrete for foundations and surface bed, cladding and sheeting, brickwork, waterproofing, carpentry and joinery, ironmongery, windows, doors and frames, plastering, tiling, sanitary fittings, hot and cold water supply pipes, sewer connection and painting FOUNDATIONS SUPPLEMENTARY PREAMBLES Nature of ground Carting away of excavated material Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site Filling Note: Unless otherwise stated, all materials from the alterations and demolitions will belong to the builder. The builder should allow for the removal of all debris from site and keep the site clean at all times				
3.1		**EXCAVATIONS**				
3.1.1		**Excavation in earth not exceeding 2m deep**				
3.1.1.1		Trenches	m^3	110		
3.1.1.2		Holes	m^3	15		
3.1.2		**Back excavation of vertical sides of excavation in earth not exceeding 500mm deep for working space, including backfilling compacted to 93% Mod AASHTO density**				
3.1.2.1		For placing and removing formwork to walls etc, 300mm away from excavated face	m^3	20		
3.1.3		**Extra over trench and hole excavations in earth for excavation in**				
3.1.3.1		Soft rock	m^3	21		
3.1.3.2		Hard rock	m^3	11		
3.1.4		**Extra over all excavations for carting away**				
3.1.4.1		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	71		
3.1.5		**Risk of collapse of excavations**				
3.1.5.1		Sides of trench and hole excavations not exceeding 1,5m deep	m^2	34		
3.1.6		**Keeping excavations free of water**				
3.1.6.1		Keeping excavations free of water	Sum	1		
3.2		**FILLING ETC**				
3.2.1		**Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density**				
3.2.1.1		Under floors, steps, pavings, etc	m^3	30		
3.2.1.2		Backfilling to trenches, holes, etc	m^3	15		
3.2.2		**Earth filling of G4 material supplied by the contractor, compacted to 95% Mod AASHTO density**				
3.2.2.1		Under floors, steps, pavings, etc	m^3	7		
3.2.3		**Earth filling of G5 material supplied by the contractor, compacted to 95% Mod AASHTO density**				
3.2.3.1		Under floors, steps, pavings, etc	m^3	43		
3.2.4		**Earth filling of G6/G7 material supplied by the contractor, compacted to 95% Mod AASHTO density**				
3.2.4.1		Under floors, steps, pavings, etc	m^3	60		
3.2.5		**Compaction of surfaces**				
3.2.5.1		Compaction of ground surface under floors etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m^2	145		
3.2.6		**Prescribed density tests on filling**				
3.2.6.1		Allow for all necessary "Mod. AASHTO Density" tests for the entire contract as specified, made, stored in accordance with SABS standards, transporting to an approved testing laboratory for testing , paying charges and submiting reports to the Engineers	**Prov.Sum**	**1**	**R5 000,00**	**R5 000,00**
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.3		**SOIL POISONING**				
		Soil insecticide to be executed with SABS compliance by a firm of specialists under a 10 year guarantee				
3.3.1						
3.3.1.1		Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	145		
3.3.1.2		To bottoms and sides of trenches etc	m^2	260		
3.4		**REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**				
3.4.1		**35MPa/19mm concrete**				
3.4.1.1		Strip footings	m^3	36		
3.4.1.2		Bases in foundations (Provisional)	m^3	7		
3.5		**TEST CUBES**				
3.5.1		Allow for all necessary concrete test cubes 150 x 150 x 150mm cast from batches of concrete required for the entire contract as specified, made, stored, cured and test in accordance with SANS methods 861 and 863 including use of approved cube moulds, transporting to an approved testing laboratory for testing , paying charges and submiting reports to the Engineers	**Prov.Sum**	**1**	**R10 000,00**	**R10 000,00**
3.6		**MASONRY**				
3.6.1		**Brickwork of NFP bricks in class II mortar**				
3.6.1.1		One brick walls	m^2	110		
3.6.1.2		Half brick walls	m^2	15		
3.6.2		**Brickwork reinforcement**				
3.6.2.1		150mm Wide reinforcement built in horizontally	m	80		
3.6.3		**Brickwork of Facebrick bricks in class II mortar**				
3.6.3.1		One brick walls	m^2	75		
3.6.3.2		Half brick walls	m^2	-		R/Only
3.6.4		**Brickwork reinforcement**				
3.6.4.1		150mm Wide reinforcement built in horizontally	m	150		
3.6.5		**Firelight Travetine FBX or equally approved face brick, to architect's selection jointed in Class II motar with a Superfine organic natural oxide colour additive to match face brick colour and pointed with recessed vertical and recessed horizontal joints,**				
3.6.5.1		Extra over brickwork for face brickwork	m^2	15		
3.7		**CONCRETE SUNDRIES**				
3.7.1		**Finishing top surfaces of concrete smooth with a wood float**				
3.7.1.1		Surface beds, slabs, etc to falls	m^2	145		
3.8		**FORMWORK**				
3.8.1		**Rough formwork to sides**				
3.8.1.1		Sloping and stepped outer edges of stairs not exceeding 300mm high extreme	m^2	-		R/Only
3.8.1.2		Edges, risers, ends and reveals not exceeding 300mm high or wide	m	50		
3.8.2		**Smooth formwork to square columns**				
3.8.2.1		610 x 610mm stub column 1.27m high	No.	-		R/Only
3.8.3		**Smooth formwork to soffits**				
3.8.3.1		Stairs and landings	m^2	-		R/Only
3.8.3.2		Slabs propped up exceeding 3,5m and not exceeding 5m high	m^2	-		R/Only
3.9		**MOVEMENT JOINTS ETC (PROVISIONAL)**				
3.9.1		**Saw cut joints**				
3.9.1.1		50 x 3mm Saw cut joints in top of concrete	m	50		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.10		**REINFORCEMENT**				
3.10.1		**Mild steel reinforcement to structural concrete work**				
3.10.1.1		10mm Diameter bars	t	-		R/Only
3.10.2		**High tensile steel reinforcement to structural concrete work**				
3.10.2.1		12mm Diameter bars	t	1		
3.10.2.2		16mm Diameter bars	t	1		
3.10.2.3		20mm Diameter bars	t	-		R/Only
3.10.3		**Fabric reinforcement**				
3.10.3.1		Mesh Ref no. 395 fabric reinforcement in concrete slabs etc	m^2	300		
3.11		**MASONRY**				
		SUPPLEMENTARY PREAMBLES				
		BRICKWORK Sizes in descriptions Face bricks Bricks shall be ordered timeously to obtain uniformity in size and colour				
		Pointing Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc				
		SAMPLES Samples of all masonry building units, shall consist of a minimum of 6 units				
3.11.1		**SUPERSTRUCTURE**				
3.11.1.1		**Brickwork of NFP bricks in class II mortar**				
3.11.1.1.1		Half brick walls	m^2	30		
3.11.1.1.2		One brick walls	m^2	90		
3.11.1.1.3		One brick wall beamfilling	m^2	10		
3.11.1.2		**Brickwork reinforcement**				
3.11.1.2.1		75mm Wide reinforcement built in horizontally	m	75		
3.11.1.2.2		150mm Wide reinforcement built in horizontally	m	300		
3.11.2		**LINTELS**				
3.11.2.1		**75 x 100mm or 75 x 150mm Standard precast concrete lintol. Minimum bearing distance to be 230mm, lintols to meet all relevent SABS requirements.**				
3.11.2.1.1		Lintels in lengths not exceeding 3m	m	150		
3.11.2.2		**Turning pieces**				
3.11.2.2.1		115mm Wide turning pieces to lintels etc	m	20		
3.11.3		**FACE BRICK**				
3.11.3.1		**Brickwork of Firelight Travetine FBX or equally approved face brick, to architect's selection in class II mortar**				
3.11.3.1.1		Half brick walls	m^2	-		R/Only
3.11.3.1.2		One brick walls	m^2	150		
3.11.3.1.3		One brick wall beamfilling	m^2	25		
3.11.3.2		**Firelight Travetine FBX or equally approved face brick, to architect's selection jointed in Class II motar with a Superfine organic natural oxide colour additive to match face brick colour and pointed with recessed vertical and recessed horizontal joints,**				
3.11.3.2.1		Extra over brickwork for face brickwork	m^2	25		
3.11.3.3		**Fair raking cutting**	m	20		
3.11.3.3.1		**Brick-on-edge header course copings, sills, etc of 10MPa NFX or equally approved face bricks, size 222 x 106 x 73mm clay solid face brick manufactured in accordance with SANS 227:200, in superstructure and bedded and jointed in Class 1 mortar**				
3.11.3.3.1.1		150mm Wide sills set sloping and slightly projecting	m	50		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.12		**WINDOW SILLS**				
3.12.1		**Everite Nutec horizontal internal window sill, size 535 x 150 x 15mm thick (Code: 031-507), manufactured in accordance with SANS803:2005 and installed below window with window sill lugs screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar with plastic slip joints at end of sills at plaster reveals and projecting from the finished face of wall. All in accordance with manufacturer's recommendations.**				
3.12.1.1		150mm slightly projecting.	m	50		
3.13		**WATERPROOFING**				
		SUPPLEMENTARY PREAMBLES				
		Waterproofing				
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee by an approved applicator. 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				
3.13.1		**DAMPPROOFING OF WALLS AND FLOORS**				
3.13.1.1		**One layer of 375 micron SABS embossed damp proof course in suitable widths laid under all walls at slab level, below window sills and above lintols in cavity walls.**				
3.13.1.1.1		In walls	m^2	25		
3.13.1.1.2		Between brickwall and concrete slab	m^2	65		
3.13.1.2		**One layer of 250 micron damp proof membrane under concrete surface beds to SABS mark 952-1985 type C laid with minimum 150mm overlaps and sealed at laps with "Gunplas Pressure Sensitive Tape"**				
3.13.1.2.1		Under surface beds	m^2	145		
3.13.2		**JOINT SEALANTS ETC (PROVISIONAL)**				
3.13.2.1		**"Compriband" bitumen impregnated foam plastic joint sealing strips**				
3.13.2.1.1		25 x 20mm In joints between frames and walls	m	20		
3.13		**ROOF COVERINGS, ETC.**				
		SUPPLEMENTARY PREAMBLES				
3.13.1		**PROFILED METAL SHEETING AND ACCESSORIES**				
3.13.1.1		**Roof sheeting to be Brown built klip-lok 700 x 0.6mm thick light industrial Z450 with Chromadeck finish,fixed to timber trusses fixed to ring beam to engineer's details roof pitch @ 5 degree.**				
3.13.1.1.1		Roof coverings/trusses with pitches not exceeding 5 degrees	No.	40		
3.13.1.2		**Cladding**				
3.13.1.2.1		Kliplok 700 x 0.6mm thick light industrial Z450 with chromadeck finish.	m^2	200		
3.14		**ROOFS, ETC.**				
3.14.1		The following in roof trusses to various buildings				
		Allow for the preparation and submission of the following documents in respect of all buildings				
3.14.1.1		Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication	Sum	1		
3.14.1.2		Design certificate indicating the licensed programme used, SABS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.	Sum	1		
3.14.1.3		Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Representative/Agent	Sum	1		
3.15		**CARPENTRY AND JOINERY**				
3.15.1		**EAVES, VERGES, ETC**				
3.15.1.1		"Everite" medium density plain nutec-cement or similair approved				
3.15.1.2		12 x 225mm Fascias and barge boards, including aluminium H-profile jointing strips	m	110		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.16		**SKIRTINGS**				
3.16.1		**Ceramic Tiles**				
3.16.1.1		100x 20mm ceramic tiles skirting	m	30		
3.17		**DOORS, ETC (As per drawing)**				
3.17.1		2032x813x44mm interior grade flush solid core timber single door with 3mm thick commercial ply on both sides with consolidated edges fitted and complying with SABS 545n in pressed steel frame.All painted to in accordance with the Architect's schedule.				
3.17.2		Door size 813 x 2032mm high (internal)	No.	3		
3.17.3		2032x813x44mm interior grade flush solid core timber single door meranti ledged with 3mm thick commercial ply on both sides with consolidated edges fitted and complying with SABS 545n in pressed steel frame.All painted to in accordance with the Architect's schedule.				
3.17.4		Door size 813 x 2032mm high (External)	No.	6		
3.18		**IRONMONGERY**				
		SUPPLEMENTARY PREAMBLES				
		Descriptions				
		Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs				
3.18.1		**HINGES, BOLTS, ETC**				
		"Doorware"				
3.18.1.1		"Ref BFBDM" Built-in flush bolts by door manufacturer	No.	10		
3.18.1.2		"Ref 37651 AS" Helping hand indicator bolt for paraplegic wc.	No.	6		
3.18.1.3		"Ref DPS-SS-032" Dust proof strike	No.	5		
3.18.2		**LOCKS**				
		"Doorware"				
3.18.2.1		"Ref D037D SS" Cylinder deadlock.Case dimensions (mm) 116.5H x 78D.Forend dimensions (mm) 168H x 22W. Backset 57mm.	No.	10		
3.18.2.2		"Ref DDC106601 MK" 66mm five pin Euro-profile Double Cylinder master keyed.	No.	10		
3.18.2.3		"Ref DMWC - SS - 008" Bathroom deaslock. Case dimensions (mm) 38H x 76D. Forend dimensions (mm) 78H x 22.5W. Backset 55mm.	No.	10		
3.18.2.4		"Ref D07735 SS" Narrow stile heavy duty swivel dead lock.Case dimensions (mm) 174H x 40D. Forend dimensions (mm) 290H x 22W. Backset 35mm.	No.	-		R/Only
3.18.2.5		"Ref D07635 SS" Narrow stile heavy duty swivel sash lock.Case dimensions (mm) 174H x 50D. Forend dimensions (mm) 290H x 22W. Backset 35mm.Centres 85mm.	No.	-		R/Only
3.18.2.6		"Ref D07935 SS" Narrow stile heavy duty roller dead lock.Case dimensions (mm) 174H x 50D. Forend dimensions (mm) 290H x 22W. Backset 35mm.	No.	-		R/Only
3.18.2.7		"Ref DWC-006" Disabled wc indicator (red & white) and turnknob for physically impaired	Sets	-		R/Only
3.18.3		**HANDLES**				
		"Doorware"				
3.18.3.1		"Ref DHP-430-CL-SF 170 x 170" DPH301C Handle BT fixed on a 170 x 170 x 1.2mm thick grade 430 stainless steel plate with cylinder cutout left. Stainless steel plate to have 4 countersunk holes for screw fixing.	No.	4		
3.18.3.2		"Ref DHP-430-CR-SF 170 x 170" DPH301C pull handle BT fixed on a 170 x 170 x 1.2mm thick grade 430 stainless steel plate with cylinder cutout right. Stainless steel plate to have 4 countersunk holes for screw fixing.	No.	4		
3.18.3.3		"Ref DPH301C BT" 149 x 19mm straight tubular pull handle BTl	No.	4		
3.18.3.4		"Ref DPH301A BTB" 325 x 25mm straight tubular pull handle BTB (BTB fixing sets included)	No.	4		
3.18.3.5		"Ref DPH215 BTB" 382 x 32mm D shaped offset tubular pull handle BTB (BTB fixing sets included)	No.	4		
3.18.3.6		"Ref TH120 NS Cyl S.S" Lever handle on narrow stile rose with narrow stile cylinder escutcheons.	Sets	1		
3.18.4		**PUSH PLATES AND KICK PLATES**				
3.18.4.1		Satin finished stainless steel plates 430 grade countersunkscrewed along edges at not exceeding 200mm centres				
3.18.4.1.1		"Ref DPP-430-BL-SF 75 x 170" 75 x 170 x 1.2mm thick grade 430 stainless steel plate.Stainless steel plate to have 4 countersunk holes for screw fixing.	No.	4		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.18.5		**DOOR CLOSERS**				
		"Doorware"				
3.18.5.1		"Ref TS90" EN 3/4 Cam action slide channel NON HOLD OPEN Door closer - hydraulic speed control.Pull side - leaf or transom fixing; push side - leaf or transom fixing.EN3 850-950, EN4 950-1100	No.	4		
3.18.5.2		"Ref TS73V PA DC + Parallel arm bracket" EN 2-4 parallel arm DELAYED ACTION Door closer. Push side fixing (parallel arm bracket included) EN2 750-850, EN3 850-950, EN4 950-1100.	No.	2		
3.18.5.3		"Ref ITS962- 4 HO" EN 2-4 Concealed in the door closer - HOLD OPEN	No.	2		
3.18.5.4		"Ref TS92B HO" MECHANICAL HOLD OPEN Cam action slide channel door closer, max door width 1100mm.Closing force EN 2- 4V. Adjustable strength.Hydraulic speed control.Pull-side door leaf fixing (Standard), push-side transom fixing.Door closer compliant with EN 1154.Door closer in CERTI FIRE approved (Certificate No.CF119) for door types ITT 120, MM/IMM 240. Certified manufacture to ISO 9001.	No.	1		
3.18.6		**LETTERS, NAMEPLATES, ETC**				
		"Doorware"				
3.18.6.1		"Ref DSS-130 M" 150 x 150mm MALE sign stainless steel	No.	-		R/Only
3.18.6.2		"Ref DSS-133 P" 150 x 150mm DISABLED PERSONS sign stainless steel	No.	-		R/Only
3.18.6.3		"Ref DSS-131 F" 150 x 150mm FEMALE sign stainless steel	No.	-		R/Only
3.18.7		**SUNDRIES**				
		"Doorware"				
3.18.7.1		"Ref fixing screws" male/female fixing screws	PACK	1		
3.18.7.2		"Ref DDS-SS-017" Floor mounted door stop	No.	12		
3.18.7.3		"Ref DCE-105 S.S" Narrow stile cylinder escutcheon	Pairs	1		
3.18.7.4		"Ref DDS-SS-021" Floor mounted door stop	No.	-		R/Only
3.18.7.5		"Ref DHC -SS-031B" Hat and Coat hook with rubber buffer	No.	-		R/Only
3.19		**BATHROOM FITTINGS**				
3.19.1		**"Kimberly" or equally approved**				
3.19.1.1		(Code:SA426220) Kimberly-Clark professional MR3 satin finish stainless steel toilet tissue dispenser overall size 130 x 135 x 360mm high , installed by a kimberly clark installation team. (or equal approved)	No.	3		
3.19.1.2		(Code:LOFTPH00010P) Bathroom butler loft polished stainless steel toilet paper holder, size 124 x 107mm wide plugged and screwed to wall with stainless steel screws. or equal approved.	No.	3		
3.19.1.3		Kimberly clark professional foam soap dispenser colour stainless steel, overall size 134 x 120 x 250mm high , installed by a kimberly clark installation team . or equal approved.	No.	3		
3.19.1.4		(Code: TVURCU30/CH) Urban cube 750mm single Towel rail	No.	3		
3.19.2		**"Franke"**				
3.19.2.1		No. 1 x 500mm x 80m x 32mm dia stainless steel grab rail as by Chairman Industries (Tel:011- 624 1222).manufacturer's instructions.(or equal approved) REAR GRAB RAIL (wc): No: 1 x "Chairman Industries" 32mm dia standard stainless steel grade 304 satin polished finish rear grab rail around cistern (code SR2) fixed to wall strictly to manufacturers specifications.Supplied complete with stainless steel fixing screws and plastic wall plugs for fixing. (or equal approved) SIDE GRAB RAIL (wc): No: 1 x 'Chairman Industries" 32mm dia standard stainless steel grade 304 satin polished finish side grab rail (code DL3) fixed to wall strictly to manufacturer's specifications.Supplied complete with stainless steel fixing screws and plastic wall plugs for fixing .(or equal approved)	No.	6		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.20		**METALWORK**				
		SUPPLEMENTARY PREAMBLES				
		Descriptions				
		Pricing. **All window prices should include alluminium louvres as shown**				
		General				
		Workshop drawings to be approved by the architect before manufacture				
3.20.1		**ALUMINIUM WINDOWS (As per drawing no. 17-0005 A-502) attached at the back of these bills of Quantities**				
3.20.1.1		**Purpose made, powder coated aluminium shopfront with flush meeting stiles and divided into glazing sections as shown.**				
3.20.1.1.1		Window Type W01, 600 X 900mm high	No.	-		R/Only
3.20.1.1.2		Purpose made, powder coated top hung and fixed glazed aluminium window.				
3.20.1.1.3		Window Type NC5F, 600 X 900mm high	No.	6		
3.20.1.1.4		Window Type NCTX7S,900 X 900mm high	No.	6		
3.20.1.1.5		Window Type TD57, 900 X 1500mm high	No.	3		
3.21		**PLASTERING**				
3.21.1		**SCREEDS**				
3.21.1.1		**Screeds on concrete**				
3.21.1.1.1		30mm Thick on floors and landings	m^2	145		
3.21.2		**GRANOLITHIC**				
3.21.2.1		Untinted granolithic, on concrete				
3.21.2.2		On floors and landings	m^2	15		
3.21.3		**INTERNAL PLASTER**				
3.21.3.1		1:4 Cement sand plaster mix on brickwork				
3.21.3.2		On walls	m^2	150		
3.21.3.3		On narrow widths	m^2	8		
3.21.3.4		Cement plaster on concrete				
3.21.3.5		On concrete soffits	m^2	-		R/Only
3.21.4		**EXTERNAL PLASTER**				
3.21.4.1		1:5 Cement sand plaster mix on brickwork				
3.21.4.2		On walls	m^2	-		R/Only
3.21.4.3		On narrow widths	m^2	-		R/Only
3.22		**TILING**				
3.22.1		**WALL TILING**				
3.22.1.1		UC Tiles "Leornardo Prima Beige" size 250 x 400mm 1st grade shiny and rough textured ceramic wall tiles (or equally approved), fixed with "MCC506" adhesive with Fine Epoxy Grout in between all in strict accordance to the manufacturer's instructions.				
3.22.1.2		On walls	m^2	10		
3.22.1.3		On narrow widths	m^2	5		
3.22.2		**FLOOR TILING**				
3.22.2.1		UC Tiles "Leornardo Prima Beige" size 250 x 400mm 1st grade shiny and rough textured ceramic floor tiles (or equally approved), fixed with "MCC506" adhesive with Fine Epoxy Grout in between all in strict accordance to the manufacturer's instructions.				
3.22.2.2		On floor	m^2	145		
3.22.2.3		On narrow widths	m^2	15		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.23		**GLAZING**				
3.23.1		**MIRRORS, ETC**				
3.23.1.1		6mm Silvered float glass copper backed mirrors with polished edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
3.23.1.2		Mirror 1000 x 600mm high Bevel-edged mirror with four (4) screws (or equal approved)	No.	-		R/Only
3.24		**PAINTWORK**				
3.24.1		**PAINTWORK ETC TO NEW WORK**				
3.24.1.1		**ON FLOATED PLASTER**				
3.24.1.1.1		Prepare and apply one coat of Plascon PP700 plaster primer and finish with two coats of Super Acrylic paint as per products specification to Architect				
3.24.1.1.2		Internal walls	m^2	150		
3.24.1.1.3		Prepare and apply one coat Plascon plaster primer and and finish with two coats of wall and all to manufacturer's specifications. Colour to architect.				
3.24.1.1.4		External walls	m^2	-		R/Only
3.24.1.2		**ON FLOATED CONCRETE**				
3.24.1.2.1		Prepare and apply one coat universal undercoat and two coats "Plascon" acrylic PVA paint				
3.24.1.2.2		On soffits of slabs	m^2	-		R/Only
3.24.1.3		**ON METAL SURFACES**				
3.24.1.3.1		Spot priming defects in pre-primed surfaces, apply one coat "Plascon Duraphos Primer" one coat "Plascon Undercoat" and two coats "Plascon Dura 100 Gloss Enamel Paint" or similar approved on steel				
3.24.1.3.2		On door fames	m^2	-		R/Only
3.24.1.3.3		Grabrails (steel balustrades)	m^2	-		R/Only
3.24.1.4		**ON WOOD**				
3.24.1.4.1		Sand down and apply one coat SABS approved universal undercoat and two coats SABS approved polyurethane enamel paint.				
3.24.1.4.2		On doors	m^2	-		R/Only
3.24.1.4.3		Prepare and apply three coats clear varnish				
3.24.1.4.4		On skirtings, rails, etc. n.e exceeding 300mm girth	m	-		R/Only
3.25		**SANITARY FITTINGS ETC**				
3.25.1		**"Vaal" or equally approved**				
3.25.1.1		Vaal sanitary ware 635x485mm Lotus white vitreous china lavatory basin (product code 7026) with one tap hole including intergrated overflow and chain stay hole, bolted to wall with two 10mm bolts (product code 8448Z0) and including lotus half mounted pedestal and hanger mechanism (product code 745201)	No.	3		
3.25.1.2		Vaal sanitary ware hibiscus china close coupled washdown suit colour white, comprising 90 degrees outlet open rim pan (code:772600) and matching 6/3 litre top dual flush cistern (code:710740) including lid and fitments.	No.	3		
3.25.1.3		Vaal sanitary ware protea paraplegic white vitreous china floor mounted paraplegic wash down suite (product code 750200) comprising 90 degrees outlet pan (product code 7502) and matching 9 litre cistern (product code 710539), including lid, fitments and purpose-made chromium plated side flush lever mounted on wall adjacent to cistern with heavy duty double flap white plastic seat.	No.	3		
3.25.1.4		Vaal sanitary ware 600x385x380mm Lavatera vitrous china wall mounted top inlet (product code 704001) including 38mm chromium plated domical grating (product code 8787Z0) and chromium plated top inlet spreader (product code 7041Z00) flush valve (by others) including 4,5 litre symphonic cistern (product code 1722Z10, fixed on and including two hanger brackets (product code 8127Z0). (or equal approved)	No.	3		
3.25.1.5		Vaal sanitary ware 510mm x 400 x 170mm Paraplegic Daisy white wall mounted basin with three semi punched tap holes, intergrated overflow and chains tay hole through the centre semi punched tap hole. (Code 700803WH)	No.	3		
3.25.2		**TAPS, VALVES ETC**				
3.25.2.1		"Cobra Watertech" or equally approved				
3.25.2.2		(Code :SE-953) Cobra watertech selene single lever 15mm chrome single tap hole basin mixer with "Cobra" aqua waste, mounting kit and flexible connection tubes manufactured in accordance to SANS 1480:2005 (BS EN 1286).	No.	32		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
3.26		**PLUMBING AND DRAINAGE**				
3.26.1		**EXCAVATIONS**				
3.26.1.1		Excavation in earth not exceeding 2m deep Trenches				
3.26.1.1.1		Back excavation of vertical sides of excavation in earth not exceeding 500mm deep for working space, including backfilling compacted to 93% Mod AASHTOdensity	m^3	100		
3.26.1.1.2		Backfilling to trenches, holes, etc	m^3	100		
3.26.2		**uPVC PIPES**				
3.26.2.1		50mm Pipes laid in including trenches not exceeding 1m deep	m	100		
3.26.2.2		110mm Pipes laid in including trenches not exceeding 1m deep	m	50		
3.26.3		**Extra over uPVC pipes for fittings**				
3.26.3.1		50mm Bend				
3.26.3.2		50mm Junction	No.	8		
3.26.3.3		110mm Straight Connector	No.	8		
3.26.3.4		110mm Bend	No.	5		
3.26.3.5		110mm Y junction	No.	32		
3.26.3.6		110mmn Gulley P-Trap	No.	38		
3.26.3.7		110mm Gulley Head	No.	6		
3.26.4		**Precast concrete gulleys:**	No.	6		
3.26.4.1		150mm Gulley not exceeding 2000mm deep	No.	6		
3.26.5		**SANITARY PLUMBING**				
3.26.5.1		**uPVC pipes**				
3.26.5.1.1		50mm Pipes	m	30		
3.26.5.1.2		50mm Pipes laid in and including trenches under floors	m	30		
3.26.5.2		**Extra over uPVC pipes for fittings**				
3.26.5.2.1		50mm Bend	No.	30		
3.26.5.2.2		50mm Access bend	No.	6		
3.26.5.2.3		50mm Junction	No.	10		
3.26.5.2.4		50mm Access junction	No.	10		
3.26.5.3		**Sundries**				
3.26.5.3.1		Testing Water Pipes	Sum	1		
3.27		**WATER SUPPLIES**				
3.27.1		**Copper pipes**				
3.27.1.1		15mm Pipes	m	20		
3.27.1.2		22mm Pipes	m	30		
3.27.2		**Extra over copper pipes for fittings**				
3.27.2.1		15mm Fittings	No.	20		
3.27.2.2		22mm Fittings	No.	25		
TOTAL CARRIED TO SUMMARY						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
4		**SECTION 4 : WATER SUPPLY AND CONNECTIONS (LI)**				
4.1	**1200DB**	**EARTHWORKS (PIPE TRENCHES)**				
4.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	200		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	1		
4.2	**1200DB**	**EXCAVATION**				
4.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up - to				
		a) 0,0m 1,0m	m	75		
		b) 1,0m 2,0m	m	-		R/Only
4.2.2	8.3.2.(b)	Extra-over item 7.2.1				
		a) Hard rock excavation (Prov)	m^3	25		
4.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	5		
4.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	33		
4.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	33		
4.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	58		
		b) long haul : over 1km (Prov)	m^3-km	72		
4.3	**1200DB**	**EXISTING SERVICES**				
4.3.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	no	-		R/Only
		b) Sewer pipeline	no	1		
		c) Electrical line	no	1		
4.3.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	m	-		R/Only
		b) Sewer pipeline	m	-		R/Only
		c) Electrical line	m	-		R/Only
4.4	**1200LB**	**PIPE BEDDING**				
4.4.1		Provision of selected granular material for bedding cradle flexible pipes, obtained from :				
	8.2.1 (a)	a) trench excavation	m^3	80		
	8.2.2.2 (a	b) borrow pits (Prov)	m^3	10		
	8.2.2.3 (a	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
4.4.2	8.2.2.3	Provision of 19mm nom. Size crushed rock imported from commercial sources (Prov) (Transport included)	m^3	-		R/Only
4.4.2		Provision of selected fill material for blanket obtained from :				
	8.2.1(b)	a) trench excavation	m^3	80		
	8.2.2.2(b)	b) borrow pits (Prov)	m^3	10		
	8.2.2.3 (a	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
4.4.3	8.2.3	Concrete Bedding Craddle (Class 15/20 concrete)				
4.4.3.1		The rate shall cover the cost of providing and placing the concrete screed and cradle and,where relevant, formwork for pipe of all diameters regardless of the method of construction (Provisional)	m^3	-		R/Only
4.4.4	8.2.4	Encasing of pipes of class 15/20 concrete for the following pipe sizes:				
		a) 50dia (prov)	m^3	20		R 0,00
		b) 110 dia (prov)	m^3	-		R/Only
4.4.5	8.2.5	Overhaul of imported material for bedding cradle and selected fill blanket (Provisional)	m^3-km	100		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
4.5	1200L 8.2.1	**PRESSURE PIPE AND PIPE FITTINGS**				
4.5.1		**Supply, lay and bed on flexible bedding, complete with couplings**				
		(a) HDPe pipes				
		(ii) 32m dia.	m	200		
		(iii) 40m dia.	m	-		R/Only
		(b) PVCs pipes				
		(i) 75m dia.	m	-		R/Only
		(ii) 110m dia.	m	-		R/Only
4.5.2		**Extra over item 12.12.2 for supplying, fixing and bedding of gate valves and line strainers on HDPe pipes**				
		(a) 40mm dia. Isolating valve	No.	4		
		(b) 40mm dia. Line strainer	No.	4		
		(c) 20 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.			R/Only
		(d) 20 dia. Non return valve	No.	1		
		(e) 20 dia. Isolating valve	No.	1		
		(f) 50 dia. Non return valve	No.	1		
		(g) 50 dia. Isolating valve	No.	1		
		(h) 50 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.	-		R/Only
		(i) 63mm dia. Isolating valve	No.	-		R/Only
		(j) 63mm dia. Line strainer	No.	-		R/Only
		(k) 63 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.	-		R/Only
		(l) 75 dia. Non return valve	No.	-		R/Only
		(m) 75 dia. Isolating valve	No.	-		R/Only
		(n) 75 dia. KA2.202 adjustable pressure reducing valve set to 300kPa isolating valve	No.	-		R/Only
4.6		**ERF CONNECTIONS**				
4.6.1		Excavate, supply, lay, bed on sandy material, test and backfill complete erf connection as shown on drawings				
		(a) Short length (20m max)	No.	1		
		(b) Long length (30m max)	No.	1		
4.7	8.3.6.(c)	**REINSTATE ROAD WORKS**				
		a) Paving block surface	m^2	80		
		b) 50mm bitumen surface	m^2	40		
		c) Pavement layers	m^3	24		
TOTAL CARRIED TO SUMMARY						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
5		**SECTION 5 : SEWER CONNECTIONS (LI)**				
5.1	**1200DB**	**EARTHWORKS (PIPE TRENCHES)**				
5.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	330		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	1		
5.2	**1200DB**	**EXCAVATION**				
5.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up-to				
		a) 0,0m 1,0m	m	211		
		b) 1,0m 2,0m	m	-		R/Only
5.2.2	8.3.2.(b)	Extra-over item 5.2.1				
		a) Hard rock excavation (Prov)	m^3	53		
5.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	21		
5.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	78		
5.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	78		
5.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	169		
		b) long haul : over 1km (Prov)	m^3-km	211		
5.3	**1200DB**	**EXISTING SERVICES**				
5.3.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	No.	2		
		a) Sewer pipeline	No.	-		R/Only
		a) Electrical Line	No.	1		
5.3.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	No.	-		R/Only
		a) Sewer pipeline	No.	-		R/Only
		a) Electrical Line	No.	-		R/Only
5.4	**1200LB**	**PIPE BEDDING**				
5.4.1		Provision of selected granular material for bedding cradle class C, obtained from :				
5.4.1.1	8.2.1 (a)	a) trench excavation	m^3	132		
	8.2.2.2 (a)	b) borrow pits (Prov)	m^3	17		
	8.2.2.3 (a)	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
5.4.2	8.2.2.3	Provision of 19mm nom. Size crushed rock imported from commercial sources (Prov) (Transport included)	m^3	-		R/Only
5.4.3		Provision of selected fill material for blanket obtained from :				
	8.2.1(b)	a) trench excavation	m^3	132		
	8.2.2.2(b)	b) borrow pits (Prov)	m^3	17		
	8.2.2.3 (a)	b) Commercial sources (including transport) (Prov)	m^3	-		R/Only
5.4.4	8.2.3	Concrete Bedding Craddle (Class 15/20 concrete)				
5.4.4.1		formwork for pipe of all diameters regardless of the method of construction (Provisional)	m^3	-		R/Only
5.4.5	8.2.4	Encasing of pipes of class 15/20 concrete for the following pipe sizes:				
		a) 50dia (prov)	m^3	-		R/Only
		b) 110 dia (prov)	m^3	20		
5.4.6	8.2.5	Overhaul of imported material for bedding cradle and selected fill blanket (Provisional)	m^3-km	165		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
5.5	**1200LD**	**PIPE LAYING**				
5.5.1	8.2.1	Supply, lay, joint and test pipes on class F bedding :				
5.5.1.1		PVC sewer pipes complete with couplings				
		a) 50dia (prov)	m	-		R/Only
		b) 110 dia (prov)	m	330		
5.5.2		Galvanised Steel Pipes and Fittings				
5.5.2.1	8.2.1	Supply, fix into position the following pipes - galvanised (Conforming with SABS 966/1976) each pipe fitted at one end with socket for mechanical joint for diameters:				
		a) 110mm dia.	No.	-		R/Only
5.5.3	8.2.1	Extra-over for item 5.5.1 & 2 for laying pipes on :				
		a) 19mm stone bedding (Prov)	m	-		R/Only
		b) Concrete cradle	m	-		R/Only
		c) Concrete encasing (Prov)	m	20		
		d) Class B bedding (Prov)	m	-		R/Only
5.6	8.3.6.(c)	**REINSTATE ROAD WORKS**				
		a) Paving block surface	m^2	132		
		b) 50mm bitumen surface	m^2	66		
		c) Pavement layers	m^3	40		
5.7	**1200LD**	**MANHOLES**				
5.7.1	8.2.3	Construction of 1000mm dia precast manholes including concrete blending layer,inlet and outlet pipes, flexible joints, junctions, tapers, channel sections in floor slabs, benching and type 4 concrete cover and frame for depths :				
		Over Up to				
		a) 0,0m 1,0m	No.	5		
		b) 1,0m 2,0m	No.	-		R/Only
5.7.2	8.2.3	Extra-over item 5.7.1 for supply and installation of type 2A heavy duty cover and frame	No.	-		R/Only
5.8	**1200LD**	**CONNECTIONS**				
5.8.1	8.2.11	Break in to existing manhole and connect new pipeline, include for pipe piece and appurtenance	No.	2		
5.8.2	8.2.11	Connection to existing sewer (Provisional)	No.	2		
5.8.3	8.2.6	Erf connections 110mm dia. as per drawings				
		(a) complete off pipe of 110mm dia. with length of connection not exceeding				
		i) 50,0m	No.	1		
		ii) 110,0m	No.	1		
		iii) 160,0m	No.	1		
TOTAL CARRIED TO SUMMARY						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
6		**SECTION 6 : SIDE-WALK WAYS (LI)**				
6.1	**SABS 1200 LB**	**SITE CLEARANCE**				
6.1.1	8.2.1	Clear and grub site of all vegetation trees as indicated by the Engineer.	ha	0,1		
6.1.2	8.2.2	Remove and grub large trees and tree stumps girth				
		(a) 1m to 3m	No.	2		
6.1.3		Remove topsoil to nominal depth of 150mm and stockpile	m^3	117		
6.1.4	2.3	Use non-selective herbicide (obit) to kill all material	m^2	780		
6.2	1200DM	**EARTHWORKS (SUBGRADE)**				
6.2.1	8.3.3	**TREATMENT OF ROADBED**				
6.2.1.1		Rip and recompact 150mm to 90% mod. AASHTO	m^3	117		
6.2.2		**EARTHWORKS**				
6.2.2.1	8.3.4	Cut to fill, compacted to 90% mod AASHTO	m^3	35		
6.2.2.2	8.3.4	Borrow to fill (from stockpile) compacted to 90% mod AASHTO	m^3	70		
6.2.2.3	8.3.5	Selected layer (G7) compacted to 93% mod AASHTO				
		a) From onsite excavations	m^3	-		R/Only
		b) From commercial sources	m^3	-		R/Only
6.2.2.4	8.3.6	Extra over items 8.2.1 to 8.2.4 excavating and breaking down material in hard excavation	m^3	-		R/Only
6.2.2.5	8.3.7	Cut to spoil or stockpile from:				
		a) Soft excavation	m^3	316		
		b) Extra over for Hard excavation	m^3	36		
6.2.2.6	8.3.8	Removal of oversize material	m^3	4		
6.2.2.7	8.3.15	Catchwater mounds/berms and channels (as per detail)	m^3	-		R/Only
6.3	1200ME	**SUBBASE (Minimum G7)**				
6.3.1	8.3.2	Construct gravel subbase with material from designated excavations or stockpile in all materials to 95% mod AASHTO	m^3	-		R/Only
6.3.2	8.3.3	Construct gravel subbase with material from commercial sources in all materials to 95% mod AASHTO	m^3	-		R/Only
6.4	**1200ME**	**BASE(Minimum G5/C4)**				
6.4.1	8.3.1	Construct 150mm base with gravel material from designated excavations or stockpile	m^3	-		R/Only
6.4.2	8.3.3	Construct 150mm base with gravel material from commercial sources	m^3	117		
6.4.3	8.3.5	Process base by means of:				
		a) Screening (provisional)	m^3	12		
		d) Stabilisation	m^3	-		R/Only
6.4.4	8.3.8	Stabilizing agent				
6.4.4.1		Road lime	t	-		R/Only
6.4.4.2		Portland cement	t	-		R/Only
6.5		**HAULING**				
6.5.1		Overhaul of excavated material to designated dump site, for over haul exceeding 1km	m^3/km	356		
6.5.2		Overhaul of imported pavement material from borrow pit, for haul exceeding 1km	m^3/km	1780		
6.6	**1200MJ**	**SEGMENTED PAVEMENT**				
6.6.1	8.2.1	Provide edge restraints as shown on drawings for (figure 12)				
		a) All paving	m	-		R/Only
6.6.2	8.2.3	Cut units to fit edge restraints	m	10		
6.6.3	8.2.2	Construct precast concrete segmented paving with 25mm sand bed complete				
		a) 80mm Heavy Duty Concrete blocks (as per engineer's specification)	m^2	-		R/Only
		b) 60mm Concrete blocks (as per engineer' specification)	m^2	780		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
6.6.4	8.2.4	Additional rolling for loads exceeding 30KN if ordered				
		(Provisional)				
		a) All paved areas as depicted on the drawings	m^2	50		
6.7	1200	**KERBING AND CHANNELLING**				
6.7.1	8.2.1	Precast concrete kerb, including all transitions				
		a) Straight				
		i) Figure 3	m	-		R/Only
		ii) Figure 7	m	1040		
		iii) Figure 8b	m	-		R/Only
		iv) Figure 8c	m	-		R/Only
		b) Curved (radius up to 10m)				
		i) Figure 3	m	-		R/Only
		ii) Figure 7	m	104		
6.7.2	8.2.7	Trimming of excavations for concrete lined open drains in all materials	m^3	-		R/Only
6.7.3	8.2.8	Cast in-situ concrete lining of open drains approx 1m wide, 100mm thk(20MPa), including smooth formwork, joint filler, joint sealant, etc. complete	m^3	-		R/Only
6.8		**RETAINING STRUCTURE**				
6.8.1		Construct segmented retaining block structure using Terrace Block TB 380 with sliders on top row to varying heights, but not exceeding 1,500mm at 65 degrees on strip foundation to manufacturer's specificationsmooth formwork, joint filler, joint sealant, etc. complete	m^2	-		R/Only
6.9	1200	**ANCILLARY ROADWORKS**				
6.9.1	8.3.1	Sign faces with Class I background. Symbols, characters, legend, and borders in black or Class I retroreflective material to SADC-RTSM manufactured of :				
		a) Approved 1.4 mm thick pre-painted galvanized steel plate of area:				
		i) Up to 2 m²	m^2	-		R/Only
		ii) Exceeding 2 m² but not 10 m²	m^2	-		R/Only
6.9.2	8.3.3	Sign Supports (including excavation, backfilling, etc. complete)				
		a) Square steel tubing:				
		i) 50 mm x 1.6 mm wall thickness	m	-		R/Only
		ii) 50 mm x 2,0 mm wall thickness	m	-		R/Only
		iii) 75 mm x 2.0 wall thickness	m	-		R/Only
		Advertising Board	No.	-		R/Only
		Directional Board	No.	-		R/Only
6.10		**ROAD MARKINGS**				
6.10.1	8.4.1	Non-reflectorized paint applied at nominal rate of 0.42 l/m2				
		a) White lines (broken or unbroken) (100 mm wide)	m	30		
		b) White lines (broken or unbroken) (150 mm wide)	m	-		R/Only
		c) White characters and symbols	m^2	-		R/Only
6.10.3	8.4.4	Setting out and premarking of lines (excluding traffic island markings, characters, and symbols)	m	30		
TOTAL CARRIED TO SUMMARY						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
7		**SECTION 7 : ELECTRICAL SUPPLY AND CONNECTIONS (LI)**				
		Complete installation including commissioning of new electrical installations: Electrical Reticulation; lighting and lightning protection included				
7.1	**1200DB**	**EARTHWORKS**				
7.1.1	8.3.1	Site clearance				
		a) Clear vegetation and trees of girth up to 1m	m	600		
		b) Clear trees of girth over 1m up to 2m (Provisional)	No.	3		
7.2	**1200DB**	**EXCAVATION**				
7.2.1	8.3.2(a)	Excavation in all materials for trenches,backfilling, compaction and disposal of surplus or unsuitable material for :				
		over up - to				
		a) 0,0m 1,0m	m	600		
		b) 1,0m 2,0m	m	-		R/Only
7.2.2	8.3.2.(b)	Extra-over item 6.2.1				
		a) Hard rock excavation (Prov)	m^3	36		
7.2.3	8.3.2 (c)	Excavate unsuitable material from trench bottom and disposal thereof (provisional)	m^3	108		
7.2.4	8.3.3.1	Imported backfill material from designated borrow pits (Provisional)	m^3	158		
7.2.5	8.3.3.3.	Compaction in road reserves to 98% Mod AASHTO (Prov)	m^3	79		
7.2.6	8.3.3.4	Overhaul				
		a) Short-haul : over 0,5km up to 1,0km (prov)	m^3	77		
		b) long haul : over 1km (Prov)	m^3-km	96		
7.3	**1200DB**	**EXISTING SERVICES**				
7.3.1	8.3.5(a)	Existing services that intersect a trench (Prov)				
		a) Water pipeline	No.	5		
		b) Sewer pipeline	No.	2		
		c) Electrical line	No.	-		R/Only
7.3.2	8.3.5(b)	Existing services that adjoin a trench				
		a) Water pipeline	m	-		R/Only
		b) Sewer pipeline	m	-		R/Only
		c) Electrical line	m	-		R/Only
7.4		**CABLE MARKERS**				
7.4.1		PVC warning marking tape	m	-		R/Only
7.4.2		Concrete route markers	No.	2		
7.5		**MANHOLES**				
7.5.1		600 x 600 x 600 mm	No.	5		
7.6		**SLEEVES**				
7.6.1		20mm dia	m	-		R/Only
7.6.2		25mm dia	m	-		R/Only
7.6.3		32mm dia	m	-		R/Only
7.6.4		50mm dia	m	600		
7.6.5		75mm dia	m	-		R/Only
7.6.6		100mm dia	m	-		R/Only
7.7		**DRAW WIRE**				
7.7.1		Galvanised draw wire	m	600		
SUB - TOTAL CARRIED FORWARD						

Item No.	Payment Refers	Short Description	Unit	Orig Qty	Rate	Amount
			BROUGHT FORWARD			
7.8		**CABLES, CONDUCTORS & SLEEVES**				
		Low Voltage Cables 600/1000V grade PVC/PVC/SWA/PVC stranded copper conductor cable (terminations and earth conductors elsewhere measured) Cable laid in trenching (excavations elsewhere measured)				
7.8.1		**Supply and install PVC insulated amoured copper cables(XLPE)**				
7.8.1.1		35 mm^2 3 core PVC insulated copper cable	m	120		
7.8.1.2		16 mm^2 3 core PVC insulated copper cable	m	330		
7.8.1.3		6mm^2 3 core PVC insulated copper cable	m	60		
7.8.2		**Cable Terminations complete including glands, shrouds, lugs, connections and commissioning**				
7.8.2.1		6mm² x 3-core	No.	10		
7.8.2.2		10mm² x 3-core	No.	4		
7.8.2.3		16mm² x 3-core	No.	4		
7.8.2.4		35mm² x 3-core	No.	3		
7.8.3		**Bare Stranded Copper Earth Wire strapped to Cables (terminations elsewhere measured)**				
7.8.3.1		25mm²	m	330		
7.8.3.2		10mm²	m	120		
7.8.3.3		6mm²	m	90		
7.8.3.4		4mm²	m	60		
7.8.4		**Bare Stranded Copper Earth Wire Terminations complete including drilling, bolting, lugs, connections and commissioning**				
7.8.4.1		25mm²	No.	1		
7.8.4.2		10mm²	No.	6		
7.8.4.3		6mm²	No.	1		
7.8.4.4		4mm²	No.	1		
7.9		**CONDUCTORS**				
7.9.1		Supply and install wire to serve facilities items(luminaires, lights and plugs 600/1000V grade PVC insulated stranded copper conductors drawn into conduit				
7.9.1.1		4mm²	m	330		
7.9.1.2		2.5mm²	m	330		
7.9.1.3		2.5mm² BCEW	m	330		
7.10		**APPLIANCES**				
		Supply and install complete aplliances with fixed cover plates in flush boxes (boxes elsewhere measured)				
7.10.1		**Socket outlets**				
7.10.1.1		16 Ampere 3-Pin 250V normal switch socket outlet wall mounted	No.	2		
7.10.2		**Light Switches and Isolators**				
7.10..2.1		16 Ampere 250V Daylight Switches	No.	10		
7.10..2.2		16 Ampere 250V grade single lever one way	No.	6		
7.10..2.3		16 Ampere 250V grade single lever two way	No.	6		
7.10..2.4		20 Ampere 250V grade double pole isolator (Geyser)	No.	-		R/Only
7.10..2.5		60 Ampere 250V grade double pole isolator (Stove)	No.	-		R/Only
7.10..2.6		Telkom point	No.	-		R/Only
7.10..2.7		TV point,Complete Disch installation(Where indicated)	No.	-		R/Only
7.11		**LUMINAIRES**				
7.11.1		2x54w Open Channel Flourescent light fitting	No.	10		
7.11.2		Bulkhead luminaire with polycarbonate complete with 14W CFL	No.	8		
7.12		**AREA AND PERIMETER LIGHTING**				
7.12.1		Complete Beka Lane 2 x 26W CFL on 4m high pole	No.	4		
7.12.2		Earthing of the all electrical installation including Roof sheeting and termination of down conductor as per the regulation.	Sum	1		
7.12.3		Supply and intall 2x500w HPS floodlight mounted 180 deg on a 12m galvanized poles complete with circuit breaker band earthing to be burried 500mm underground	No.	8		
7.13		**TESTING AND COMMISSIONING**				
7.13.1		Testing and commissioning of the complete electrical installation	Sum	1		
7.14		**ISSUE OF COC**	Sum	1		
7.15		**COMPLETE SURVEY AND CIVIL WORKS ASSOCIATED TO POLE INSTALLATION**	Sum	1		
7.17		**CRANE HIRING AND OTHERS**	Sum	1		
TOTAL CARRIED TO SUMMARY						

SUMMARY OF SCHEDULE OF QUANTITIES	AMOUNTS
SECTION 1: PRELIMINARY AND GENERAL, PRIME COST SUMS AND PROVISIONAL SUMS	
SECTION 2 : PERIMETER FENCING AND SECURITY FEATURES (LI)	
SECTION 3 : GUARD HOUSE (LI)	
SECTION 4 : WATER SUPPLY AND CONNECTIONS (LI)	
SECTION 5 : SEWER CONNECTIONS (LI)	
SECTION 7 : ELECTRICAL SUPPLY AND CONNECTIONS (LI)	
SECTION 6 : SIDE-WALK WAYS (LI)	
SUB-TOTAL 1	
CONTINGENCY AMOUNT	R 200 000,00
SUB-TOTAL 2	
VAT @ 15%	
GRAND TOTAL	