

# TENDER DOCUMENT



Project Name	Project Number
CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GARVEL TO SURFACING	TECH/006/2022/23

**Contact** : Mr. Phaahla K – Technical Services

**Tel** : (015) 501 2300/38

**Fax** : (015) 501 0419

**COMPANY  
NAME**

**TENDER  
AMOUNT**

**EMAIL ADDRESS:** \_\_\_\_\_

**A. VERY IMPORTANT NOTICE ON DISQUALIFICATIONS:**

***BY SUBMITTING THE BID THE BIDDER UNDERTAKES TO ABIDE BY THE TERMS AND CONDITIONS OF THIS TENDER INCLUDING BUT NOT LIMITED TO THE RULES OUTLINED BELOW***

- A bid not complying with the requirements stated hereunder will be regarded as not being an “Acceptable bid”, and as such will be rejected.
- “Acceptable bid” means any bid which, in all respects, complies with the conditions of bid and specifications as set out in the bid documents, including conditions as specified in the Preferential Procurement Policy Framework Act (Act 5 of 2000) and related legislation and regulations, in terms of which provision is made for this policy.
- In this document and other documents referred to but not attached, the following words are synonymous with each other.
  - a. CLIENT, EMPLOYER, MOLEMOLÉ LOCAL MUNICIPALITY, MUNICIPALITY
  - b. BID, TENDER AND VARIATIONS THEREOF
  - c. JOINT VENTURE / CONSORTIUM
  - d. TENDERER, BIDDER, CONTRACTOR

**B. FULL DESCRIPTION OF THE TENDER**

- ❖ Molemole Local municipality [MLM] would like to appoint a competent service provider registered on the National Central Supplier Database, for the Construction of Ga-Sako Upgrading of 1.7km Internal Streets from Gravel to Surfacing.
- ❖ To achieve this, the service provider will work under the direction and instruction of the Technical Services (PMU Division) and will be:
- ❖ Construction of Ga-Sako Upgrading of 1.7km Internal Streets from Gravel to Surfacing.
- ❖ The municipality will enter into an agreement with the appointed service provider to clarify terms and conditions during the duration of the project.

**C. ACCURACY OF REQUEST FOR TENDER**

Whilst all due care has been taken in connection with the preparation of this bid document, Molemole Local Municipality [MLM] makes no representations or warranties that the content in this bid document or any information communicated to or provided to Bidders during the Tendering Process is, or will be, accurate, current or complete. MLM, its officers, employees and advisors will not be liable with respect to any information communicated which is not accurate, current or complete.

- ❖ If a Bidder finds or reasonably believes it has found any discrepancy, ambiguity, error or inconsistency in the bid document or any other information provided by MLM (other than minor clerical matters), the Bidder must promptly notify MLM in writing of such discrepancy, ambiguity, error or inconsistency in order to afford MLM an opportunity to consider what corrective action is necessary (if any).
- ❖ Any actual discrepancy, ambiguity, error or inconsistency in this document or any other information provided by the MLM will, if possible, be corrected and provided to all Bidders without attribution to the Bidder who provided the written notice.



## 1. RULES FOR BIDDING

BY SUBMITTING THE BID THE BIDDER UNDERTAKES TO ABIDE BY THE TERMS AND CONDITIONS OF THIS TENDER INCLUDING BUT NOT LIMITED TO THE FOLLOWING RULES:

- 2.1 The bidding entity shall be the same entity that will execute the bid. Any bid found to be fronting for another entity or entities shall be disqualified immediately.
- 2.2 All Bidders submitting bids as part of a consortium or joint venture must submit separate central supplier database reports per each company.
- 2.3 Bidders may ask for clarification on these bid documents or any part thereof up to close of business **seven (7) calendar days** before the deadline for the submission of the bids. All written questions must be addressed to Manager: PMU Mr. Phaahla KJ email: [phaahlak@molemole.gov.za](mailto:phaahlak@molemole.gov.za) written responses will be uploaded on the municipal website and or e-tender portal **five(5) calendar days** before bid closes. Bidders are encouraged to ensure they check the e-tender and or website on a daily basis.
- 2.4 The municipality reserves the right to return late bid submission unopened.
- 2.5 Bidders may not contact the municipality on any matter pertaining to their bid from the time when the bids are submitted to the time the contract is awarded. Any effort by a bidder to influence bid evaluation, bid comparisons or bid award decisions in any manner, may result in rejection of the bid concerned.
- 2.6 Bidders must attach proof of parties involved in the joint venture.



- 2.7 The Bid document must be properly signed by a party having the authority to do so, according to the example of “Authority or Signatory”
- 2.8 Bidders will be disqualified if Municipal rates and taxes or municipal service charges owed by the bidder or any of its directors to the municipality or municipal entity, are in arrears.
- 2.9 All Pages within the Bid document **must** be fully initialized and or signed by Company Director.
- 2.10 If at anytime during the project implementation phase the **rates** or **prices** are found to be abnormal, irregular and or not market related among other things, the Engineer may after written approval from the Municipality revise them to a practical or market related rate. The amount on the **form of offer** will be considered as the final cost of works.
- 2.11 In terms of Section 62 of the Local Government: Municipal Systems Act, 32 of 2000 a person whose rights are affected by a decision taken by the Molemole Municipality in the implementation of its supply chain management system, may appeal against that decision by giving written notice of the appeal and reasons to the Municipal Manager within 21 days of the date of the notification of the decision
- 2.12 An appeal must contain the following:
- 2.12.1 Reasons and/or grounds for the appeal
  - 2.12.2 The way in which the appellants rights have been affected
  - 2.12.3 Remedy sought by appellant
- 2.13 Appeals must be submitted in writing to the Manager: Legal Services (Attention Mr. N.J Moleele) Mogwadi Head Office, 303 Church Street, Private Bag X44 Mogwadi, 0715. Email: moleelej@molemole.gov.za
- 2.14 Bidders will be disqualified if:
- 2.14.1.1 Any bidders who during the last five years has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after a reasonable written notice was given to that bidder that performance was unsatisfactory or appears on the register / database of defaulters.

- 2.14.2 They are bankrupt or being wound up, are having their affairs administered by the courts,
- 2.14.3 Have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- 2.14.4 Are guilty of misrepresentation in supplying the information required in the document as a condition of participation in the procurement procedure or fail to supply this information;
- 2.15 The accounting officer must ensure that irrespective of the procurement process followed, no award may be given to a person –
- Who is in the service of the state, or;
  - If that person is not a natural person, of which any director, manager, principal shareholder or stakeholder, is a person in the service of the state; or;
  - Who is an advisor or consultant contracted with the municipality in respect of contract that would cause a conflict of interest?
- 2.16 Bid offers will be rejected if the bidder or any of his/ her directors is listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector and all bids would be subjected to vetting.
- 2.17 Failure by the bidder to disclose with the bid submission any form of conflict of interest including disclosure on a person(s) who is in the service of the state or any immediate blood relative in the service of the state will lead to disqualification.
- 2.18 Bids received by telegram, fax or e-mail will not be considered. Late bids shall neither be accepted nor considered.
- 2.19 Bidders are advised to fully index and attach a table of contents for their attachments.
- 2.20 The municipality is not liable for any documents delivered via courier companies and by post. No official is going to sign the receipt of the tender document.

## **TECH/006/2022/23**

- 2.21 Tender documents must be submitted in a sealed envelope clearly marked with the project name and number.
- 2.22 Fully completed and signed tender documents must be deposited into the tender box located at Mogwadi old building, next to Cashier's office.
- 2.23 The Municipality is strictly not obliged to appoint the lowest or cheapest bidder.
- 2.24 Due to the Covid19 Pandemic, Bidding processes shall be subject to the regulations as stated by the President of the Republic of South Africa.



## CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING

### CONTENTS

#### **PART T1: BIDDING PROCEDURES**

T1.1	Notice and Invitation to Bid .....	(WHITE)
T1.2	Bid Data .....	(PINK)

#### **PART T2: RETURNABLE DOCUMENTS**

T2.1	Returnable Schedules required for Bid Evaluation Purposes.....	(YELLOW)
T2.2	Other Documents required for Bid Evaluation Purposes.....	(YELLOW)
T2.3	Returnable Schedules that will be incorporated in the Contract.....	(YELLOW)

#### **PART T3: TENDER SPECIFICATION .....**(WHITE)

### **THE CONTRACT**

#### **PART C1: AGREEMENT AND CONTRACT DATA**

C1.1	Form of Offer and Acceptance.....	(WHITE)
C1.2	Contract Data.....	(WHITE)

## **TECH/006/2022/23**

### **PART C2: PRICING DATA**

C2.1 Pricing Instructions.....(YELLOW)

### **Part C3: Scope of Work**

C3.1 Scope of work ..... (BLUE)

C3.2 Standard Specifications.....(BLUE)



## Invitation to Tender

### TECH/006/2022/23: CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING

### BIDS ARE HEREBY INVITED FOR CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING

Bid documents are downloadable from Molemole Local Municipality website as from **16 May 2022**. Bidder is responsible to print the downloaded bid document and the bid document must be completed in full.

**NB. A compulsory clarification meeting with the relevant representatives of the Municipality will take place as follows:**

Project Number	Bid Description	CIDB	Minimum WO to be created	Compulsory Briefing Session	Preference Point System	Closing Date and Time	Contact Person
TECH/006/2022/23	Construction of Ga-Sako Upgrading of 1.7km Internal Streets from Gravel to Surfacing.	6CE or Higher	35 WO	Date: 19 May 2022 Time: 14h00pm Venue: Ga-Sako Community Hall Co-Ordinates: S 23° 24'56" E 29° 09' 54"	80/20 preference point system. 100 Points Functionality 80% minimum qualifying score for evaluation on 80/20	09 June 2022 @ 11h00am	Mr. K Phaahla Tel:015 501 2300/38

The Council also reserves the right to negotiate further conditions and requirements with the successful bidder.

Complete tender documents, fully priced and signed with all the necessary documents attached, must be sealed in an envelope marked "TENDER" Description of Project / Project Number" as mentioned above. Closing date of this tender is **09 June 2022** at **11h00** and should be deposited in the tender box at the Mogwadi Municipal Offices. Documents returned after the date and time will be returned unopened.

The Bid box is generally open during office hours, 08h00 to 16h30, Mondays to Fridays. Bidders should ensure that bids are delivered timeously to the correct address.

If the bid is late, it will not be accepted for consideration.

## **TECH/006/2022/23**

THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATION, 2011, AND THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (Second Edition) (2015).

The Municipality shall adjudicate and award bids in accordance with B-BBEE status level of contribution on 80/20-point system, 80 points for the price and 20 points for contribution. Prospective bidders must accept that the bid will be adjudicated, according to the said legislation. Bids will remain valid for 90 (ninety) days.

N.B: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (as defined in Regulation 1 of the Local Government: Municipal supply chain Management Regulations)

Only bidders who are registered in the relevant contractor category in the Construction Industry Development Board Register of Contractors will be considered. This requirement will remain in force as long as it is a requirement of the CIDB is **6CE** or higher. The minimum Labour content for this project shall be **35** work opportunities whichever is higher.

The Joint Ventures, all companies, which are part of the joint venture, must be registered with the CIDB. The Joint Venture that meets the grading for the bid will be considered.

Enquiries related to this bid should be addressed to Mr Phaahla K at telephone number (015) 501 2300 or 015 501 2338 or phaahlak@molemole.gov.za during working hours.

**MR. MAKGATHO K.E**  
ACTING MUNICIPAL MANAGER  
MOLEMOLE MUNICIPALITY  
**MOGWADI, 0715**

**T1.2 BID DATA**

The conditions of Bid are the Standard Conditions of Bid as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement. (See [www.cidb.org.za](http://www.cidb.org.za)) which are reproduced without amendment or alteration for the convenience of Bidders as an Annex to this Bid Data.

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

The **Standard Conditions of Bid** makes several references to the bid data for details that apply specifically to this bid. The bid data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of bid.

**The additional conditions of Bid are:**

Clause number	Bid Data
F.1.1 ACTIONS	The Employer is: The Municipal Manager MOLEMOLE Local Municipality 303 Church Street MOGWADI 0715
F.1.4 COMMUNICATION AND EMPLOYER'S AGENT	The Employer's Agent is: Name: Nevhutalu Consulting Engineers Address: Suite 10, JCJ Limpro Building, 6 Hans van Rensburg, Polokwane, 0700 Tel: 015 291 3519
F.1.10 CERTIFICATES AND ATTACHMENTS	The bidder is required to attach the following <b>Valid documents</b> to the tender. document: (1) The recent up-to-date central supplier database (CSD) registration report detailing all compliance requirements; [Last verified between the advert date and the closing date]; (2) The Master registration number or Tax compliance status pin (or valid copy of tax clearance certificate).



**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

Clause number	Bid Data
	<p>(3) Copy of the statement of municipal rates and taxes for the company or of its directors (not in arrears for more than three (3) months), if renting a lease agreement and owner's proof of municipal rates must be submitted (not in arrears for more than three (3) months). If the bidder is operating where municipal rates are not applicable, a proof of residence from the traditional authority must be submitted (not older than three (3) months).</p> <p>(4) Proof of CIDB grading of 6CE or higher (attach copy of certificate)</p> <p>(5) Certified Letter of Good Standing (COIDA) from Department of Employment</p> <p>(6) Joint venture/consortium agreements (if applicable);</p> <p>(7) Submit the above documents (1 to 5) for each company if bidding as a joint venture/consortium;</p> <p><b>Note:</b> Failure to attach the above documents will lead to automatic rejection of your Bid.</p>
F.1.11 OPENING OF BID SUBMISSIONS	<p>The time and location for opening of the bid offers</p> <p>Immediately after the closing time <b>11H00</b> on the closing date <b>09/06/2022</b></p> <p>Location: MOLEMOLE Local Municipality- Old Municipal Building 303 Church Street Mogwadi 0715</p> <p>Any bid received after the deadline for submission of bids prescribed, will be rejected and/or returned unopened to the Bidder.</p>
F.1.12 TWO-ENVELOPE SYSTEM	A two-envelope procedure will <b>not</b> be followed.
F.1.12 ARITHMETICAL ERRORS	<p>a) Where there is a discrepancy between the amounts in figures and in words, the amount in figures shall take precedence.</p> <p>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, <u>the rate shall govern and the line item total shall be corrected.</u></p> <p>c) Where there is an error in the total of the prices either as a result of</p>

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

Clause number	Bid Data
	<p>corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall be adjusted to reflect the arithmetically correct summation of corrected line item totals.</p> <p>Consider the rejection of a tender offer if the tenderer does not accept the correction of the arithmetical errors in the manner described above.</p>
F.1.13 EVALUATION OF BID OFFERS	<p>The preference procedure for evaluation of responsive bid offers shall be the <b>80/20</b> preference point system.</p> <ul style="list-style-type: none"> <li>- where 80 points will be allocated in respect of price</li> <li>- 20 points will be allocated towards targeted goals</li> </ul> <p>Note: All bids will be evaluated for functionality before the evaluation on 80/20 point system</p>
F.1.14 ACCEPTANCE OF BID OFFER	<p>Bids containing any one or more of the errors or omissions, or bids not having complied with any one of the required bid conditions as detailed in this bid document, shall not be considered and shall automatically be rejected.</p>
F.1.15 PROVIDE COPIES OF THE CONTRACTS	<p>The number of paper copies of the signed contract to be provided by Molemole Municipality is <b>one</b>.</p>
ADDITIONAL CONDITIONS APPLICABLE TO THIS BID	<p>The additional conditions of bid are:</p> <ol style="list-style-type: none"> <li>1 The Employer may also request that the bidder provide written evidence on the adequacy of financial, labour and other resources for carrying out the contract.</li> <li>2 The Employer reserves the right to appoint a firm of chartered accountants and auditors and/or execute any other financial investigations on the financial resources of any bidder. The bidder shall provide all reasonable assistance in such investigations.</li> <li>3 The bidder shall be required to complete the Form of Offer and Acceptance (C1.1) and Bills of Quantity.</li> <li>4 The bid document shall be submitted as a whole and shall <b>not</b> be submitted in parts.</li> </ol>

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

Clause number	Bid Data
	<p><b>5 List of returnable documents (PART T2) must be completed in full.</b> (i.e.: A bidder's company profile <b>will not</b> be used by the MLM to complete PART T2 on behalf of the bidder)</p> <p><b>NB: If PART T2 is not completed in full by the bidder, the offer will be rejected.</b></p>
F.2.1 ELIGIBILITY	Companies that fit all the requirements of this bid as specified.
F.2.1	Only those Bidders who have in their employ management and supervisory staff satisfying the requirements of the Scope of Work for supervisory and management staff are eligible to submit Bids.
F.2.7 CLARIFICATION MEETING	<p>Date : 19 May 2022</p> <p>Time : 14H00</p> <p>Venue : Ga-Sako Community Hall</p> <p>Co-Ordinates (23° 24'56" S, 29° 09' 54" E)</p>
F.2.13.2 SUBMITTING A TENDER OFFER	<p>The <b><u>whole original</u></b> bid document, <b>as issued by the Municipality</b>, shall be submitted. <b>No copies will be accepted.</b></p> <p>Bids may only be submitted on the Bid documentation issued by the municipality</p>
F.2.14 CLOSING DATE & TIME	<p>DATE: 09/06/2022</p> <p>Time : 11H00</p> <p>It is the responsibility of the tenderer to ensure that their tender is complete and reaches the correct address by the designated deadline.</p> <p><b>Late, faxed or e-mailed tenders will not be considered.</b></p>
F.2.14.1	Project duration for this project is <b>10 months</b> after signing the Service Level Agreement
F.2.15 TENDER OFFER VALIDITY	<p>1. The employer will have up to 90 days (working days) from the closing date within which to consider submitted bids.</p> <p>2. The successful bidder will have up to 14 days to respond to the</p>

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

Clause number	Bid Data
	service offer.
F.2.18	The Bidder must submit to the Employer, 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.
	<p>Labour Content:</p> <p>The minimum Labour content for this project shall be 25 work opportunities whichever is higher.</p>
F.2.23	<p><b>Certificates</b></p> <p>The following returnable schedules will be required for tender evaluation purposes:</p> <ul style="list-style-type: none"> <li>• Record of Addenda to Tender Documents</li> <li>• Schedule of Key Personnel - In terms of the Project Specification and the Conditions of Tender, unskilled workers may only be brought in from outside the local community if such personnel are not available locally.</li> <li>• Format of Curriculum Vitae, and certified copies of qualifications,</li> <li>• Schedule of Tenderer's Experience (attach Appointment Letters and Completion Certificates)</li> <li>• Proposed Amendments, Qualifications and Alternatives</li> <li>• Schedule of Sub-Contractors</li> <li>• Schedule of plant and equipment (attach proof of ownership / lease agreement)</li> <li>• Form of Intent to offer a Performance Guarantee</li> <li>• P(CPG)</li> <li>• B-BBEE Certificate</li> <li>• Proposed execution programme</li> <li>• Contractor's health and safety declaration</li> <li>• Contractors safety plan</li> <li>• Contractors quality management plan</li> <li>• Contractors environmental management plan</li> <li>• Environmental aspects and impact register</li> <li>• Contractors waste management plan</li> </ul>

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

Clause number	Bid Data
	<p>Compulsory Returnable Schedules are certified copies/originals of the following documents. Failure to submit any of the documents listed below will automatically disqualify the Bid.</p> <ul style="list-style-type: none"><li>• An original and current/valid Tax Clearance Certificate issued by the South African Revenue Services. The certificate must be valid on the date on which the tender closes.</li><li>• Certificate of Authority of Joint Ventures/ Close Corporations/ Partnership/Company/Sole Proprietor (Certified Copies of the Identity Documents in the Case of Sole Proprietor)</li><li>• Compulsory Enterprise Questionnaire</li><li>• Schedule Registration Certificates of Entities - Joint Ventures/Close Corporations/Partnership/ Company/Sole Proprietor</li><li>• Copy of Workmen's Compensation Registration Certificate (or proof of payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993) – a Letter of Good standing.</li><li>• Signed Form of Offer</li><li>• Legal Joint Venture Agreement</li><li>• SBD 4, SBD 6.1 SBD 8 AND SBD 9</li></ul>

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

**F.1 Standard Conditions of the Bid**

**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 with openness and transparency.

**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 of 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.

**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

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

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 three months.

**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/ her principals, is not under any restriction to do business with the 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 to satisfy requirements.

It is a term of this bid that the employer is indemnified from any liability arising or accruing from expenses or damages or losses incurred by the bidder including in the event the employer opts to cancel or discontinue the bidding process of this tender.

**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<sup>i</sup>**

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.

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

The distribution of the tender documents is for the sole purpose of obtaining offers. The distribution does not grant permission or licence to use the documents for any other purpose. Tenderers are required to treat the details of all documents supplied in connection with the tender process as private and confidential. All responses to this invitation to tender will be treated in confidence and no information contained therein will be communicated to any third party without the written permission of the tenderer except insofar as is specifically required for the consideration and evaluation of the response or as may be required under law.

**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 (5) working days before the closing date 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 required to seek adequate cover for covering liability that may ensue while delivering copiers to the employer.

**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, Value Added Tax (VAT), and other levies payable to the successful tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the tender data.



**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

F.2.10.2 Provide rates and prices that are fixed for the duration of the contract, payable after delivery of the copiers, subject to inspection by the Employer.

F.2.10.3 State the rates and prices in South African Rand.

F.2.10.4 The municipality has limited resources and bids must be competitive, with market related pricing, as this will be one of the deciding factors in the final award of the contract

**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 or TIPPEX 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 of 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.

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.

F.2.13.4 Sign the original 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 package marking the package as "ORIGINAL"

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

F.2.13.6 Seal the original tender offer package in an outer package that states \_\_\_\_\_ on \_\_\_\_\_ the outside only the employer's address and identification details as stated in the tender data.

F.2.13.7 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, will 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, facsimile or e-mail.

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. The tender validity period for this contract is 90 days after bid closes.

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.**

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

**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), referencing 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.2.19 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 twenty eight (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 (5) 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 (7) days before

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

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 a formal 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.

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

**F.3.6 Non-disclosure**

To 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

**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 rate shall govern and the total 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 rate shall govern and the tenderer will be asked to revise selected item prices 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/ her arithmetical errors in the manner described in F.3.9.1.

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

**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 Methodology**

- a. In addition to all items highlighted under Page 2 titled **“Very Important Notice on Disqualifications”**, the tenders will be evaluated in terms of the Municipality Supply Chain Management policy, Preferential Procurement Framework Act (Act 5 of 2000) and its regulations as enacted in 2001.
- b. Tenders will be evaluated using the 80/20 points allocation system. The total points out of a possible maximum of 100 will be calculated using various formulae to calculate price as well as for preferential procurement.

**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/her 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, the employer will publicise a list of successful bidders on the municipal website

**F.3.14 Municipality's right to accept or reject any or all Bids**

*The municipality reserves the right to:*

- Accept or reject any bid;
- Annul the tender process and reject all bids at any time prior to contract award;
- Award the contract to one or more bidders; without thereby incurring any liability to the affected Bidder or bidders.
- Accept one or more bids submissions.
- Appoint the lowest bidder

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

- Reject all bids submitted.
- Request further information from any bidder after the closing date.
- Cancel this bid or any part thereof any time, or
- Award this bid or any part thereof to any one or more bidders.
- Vary the site or number of sites and/or guards due to operational or budgetary requirements.

**F.3.15. Prepare contract documents**

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:

- addenda issued during the tender period,
- inclusion of the returnable documents,
- other revisions agreed between the employer and the successful tenderer, and
- 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 within fourteen (14) days 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 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.

**2. List of attachments required for Evaluation Purposes**

- a) The recent up-to-date central supplier database (CSD) registration report detailing all compliance requirements; [Last verified between the advert date and the closing date];
- b) Valid Tax compliance status pin
- c) Copy of the statement of municipal rates and taxes must be reflected on the CSD for the company or of its directors (not in arrears for more than three (3) months), if renting a lease agreement and owner's proof of municipal rates must be submitted (not in arrears

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

- for more than three (3) months). If the bidder is operating where municipal rates are not applicable, a proof of residence from the traditional authority must be submitted (not older than three (3) months).
- d)** Proof of CIDB grading of 6CE or higher.
  - e)** Financial Statements latest Three (3) year's audited Annual Financial Statements or since their establishment if established during the past three years.
  - f)** Certified Letter of Good Standing (COIDA) from Department of Employment and labour.
  - g)** Joint venture/consortium agreements (if applicable);
  - h)** Submit the above documents (a to f) for each company if bidding as a joint venture/consortium;

**3. EVALUATION METHODOLOGY**

**Bids will be evaluated in terms of the following 2 stages:**

**Stage 1: Evaluation on functionality**

Under functionality, Bidders must achieve a minimum of 80% ((rounded to the nearest decimal point)) for functionality (quality) in order to be considered for further evaluation in stage 2 (Evaluation on Price and BBBEE). Bidders that score less than 80% (rounded to the nearest decimal point) will be disqualified.

**NB: Only the combined Price & BBBEE points will determine the highest point scoring bidder to be awarded the contract.**

- **Guidelines for Evaluation using the Weighting method**
  - a. Score sheets will be prepared and provided to panel members to evaluate the bids.
  - b. The score sheet should contain all the criteria and the weight for each criterion as well as the values to be applied for evaluation as indicated in the bid documents.
  - c. Each panel member should after thorough evaluation independently award his / her own value to each individual criterion.
  - d. Score sheets should be signed by panel members and if necessary, written motivation may be requested from panel members where vast discrepancies in the values awarded for each criterion exist.
  - e. If the minimum qualifying score for functionality is indicated as a percentage in the bid documents, the percentage scored for functionality may be calculated as follows:
    - i. The value awarded for each criterion should be multiplied by the weight for the relevant criterion to obtain the score for the various criteria;
    - ii. The scores for each criterion should be added to obtain the total score; and



**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

iii. The following formula should be used to convert the total score to percentage for functionality:

$$Ps = (So/Ms) \times 100$$

Where:

Ps = percentage scored for functionality by bid under consideration

So = total score of bid under consideration

Ms = maximum possible score [the highest score by any bidder]

The percentage of each panel member should be added and divided by the number of panel members to establish the average percentage obtained by each bidder for functionality.

Criteria	Weights	Applicable values
<b>Company Experience</b>	<b>30</b>	Poor = 1
5 x Successfully completed traceable projects in construction of roads and stormwater.( attach 5 appointment letters and corresponding completion certificates on the client's letter head)		Average = 2
		Good = 3
<b>Plant and equipment</b>	<b>20</b>	Very good = 4
<b>Plant and equipment</b> <ul style="list-style-type: none"> <li>1x Grader</li> <li>1x Smooth drum roller (15 ton)</li> <li>2x (10 m³) tipper trucks</li> <li>1x Water tankers (9 000 litter or larger)</li> <li>1x TLB/Loaders</li> <li>1 x Walk behind roller or plate compactor</li> </ul> These equipment can be owned or rented. Attach proof ownership and lease agreement if renting.		Excellent = 5
<b>Proposed key personal (4)</b>	<b>40</b>	
<u>Contracts Manager</u> Attach the following: <ul style="list-style-type: none"> <li>CV indicating a minimum of ten (10) years' proven experience in Construction and managing projects of roads, stormwater and bridges.</li> <li>Certified copy of BTech/BSc/BEng : Civil Engineering,</li> <li>Certified copy of NQF Level 5 Certificate for Managing LIC Civil Projects</li> <li>Certified copy of ECSA Registration certificate as Pr. Technologist or Engineer.</li> </ul>		
<u>Site Agent</u> Attach the following: <ul style="list-style-type: none"> <li>CV indicating a minimum of five (5) years' proven experience in Construction and managing projects of roads, stormwater and bridges.</li> <li>Certified copy of ND : Civil engineering or construction</li> <li>Certified copy of ECSA Registration certificate as a technician</li> </ul>		
<u>Site Foremen</u> Attach the following: <ul style="list-style-type: none"> <li>CV indicating a minimum of three (3) years' proven experience in</li> </ul>		

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

<p>construction and supervising projects of roads, stormwater and bridges.</p> <ul style="list-style-type: none"> <li>• Certified copy of ND: Civil Engineering or higher.</li> <li>• Certified copy of EPWP LI NQF 5 to Manage Labour-Intensive Construction Processes)</li> </ul> <p><u>OHS and Environmental Officer</u> Attach the following:</p> <ul style="list-style-type: none"> <li>• CV indicating 5 years' experience in construction related projects</li> <li>• Certified copy of Occupational health and safety certificate</li> </ul>		
<b>Financial viability</b>	<b>10</b>	
Bank rating of C or higher		
<b>Total functionality Score</b>	<b>100</b>	

**Stage 2: Evaluation on price 80/20 and BBBEE status**

**a) Financial offer and evaluation on price points**

- Score Bid evaluation points for financial offer.
- Confirm that Bidders are eligible for the BBBEE claimed, and if so, score Bid evaluation points for BBBEE.
- Calculate total Bid evaluation points (Price points plus BBBEE points)
- Rank Bid offers from the highest number of Bid evaluation points to the lowest.
- The bidder obtaining the highest number of total points will be awarded the contract.
- Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.
- Points scored must be rounded off to the nearest 2 decimal places.
- In the event that two or more bids have scored equal total points, the successful bids must be the one scoring the highest number of preference points for B-BBEE.
- However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
- Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

**b) Price formula**

$$P_s = 80 \left( 1 - \frac{(P_t - P_{\min})}{P_{\min}} \right)$$

Where-

- $P_s$  = Points scored for price of tender under consideration;

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

- Pt = Price of tender under consideration; and
- Pmin = Price of lowest acceptable tender.

**c) Scoring for BBBEE**

- Bids will be evaluated in accordance with the prescripts of the Preferential Procurement Policy Framework Act (PPPFA) and the associated Preferential Procurement Regulations of 2017, which stipulate a 80/20 preference point system for acquisition of goods or services for Rand value equal to or above R30 000 and up to R50 million
- Bidders must attach certified copies of BBBEE to claim BBBEE points. Failure to attach the valid BBBEE points shall not disqualify the Bidder from further evaluation; but only points will be forfeited.

**B-BBEE Status Level of Contributor Number of points (80/20 system)**

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

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**



**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

**PART T2 LIST OF RETURNABLE DOCUMENTS**

*The bidder must complete the following returnable documents.*

- T2.1 RETURNABLE SCHEDULES REQUIRED FOR BID  
EVALUATION PURPOSES .....
- T2.2 OTHER DOCUMENTS REQUIRED FOR BID  
EVALUATION PURPOSES .....
- T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED  
IN THE CONTRACT .....
- T2.4 OTHER DOCUMENTS THAT WILL BE INCLUDED IN  
THE CONTRACT .....

**NOTE:**

Although the documents under Part T2 is headed “Returnable Documents” in line with the CIDB model, these are not the only documents to be returned together with the bid. **All** the documents indicated on Part T1 must be completed and signed where applicable and submitted as a **complete set of documents**.

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**T2.1 RETURNABLE SCHEDULES REQUIRED FOR BID EVALUATION PURPOSES**

**CONTENTS**

FORM 2.1.1: SIZE OF ENTERPRISE AND CURRENT WORKLOAD

FORM 2.1.2: CERTIFICATE OF AUTHORITY FOR JOINT VENTURE (WHERE APPLICABLE)

FORM 2.1.3: SCHEDULE OF PREVIOUS WORK CARRIED OUT BY BIDDER

FORM 2.1.4: SCHEDULE OF PROPOSED SUB-CONTRACTORS (*NOT APPLICABLE TO THIS BID*)

FORM 2.1.5: FINANCIAL REFERENCES

FORM 2.1.6: DETAILS OF ALTERNATIVE BIDS SUBMITTED (*NOT APPLICABLE TO THIS BID*)

FORM 2.1.7: AMENDMENTS & QUALIFICATIONS BY BIDDER

**[PLEASE NOTE IT IS COMPULSORY FOR ALL FORMS TO BE COMPLETED]**

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**RFORM 2.1.1      SIZE OF ENTERPRISE AND CURRENT WORKLOAD**

a) Total Turnover in the previous financial year?    R\_\_\_\_\_

b) Estimated turnover for current financial year?    R\_\_\_\_\_

**List your current contracts and obligations [maximum]:**

Description	Location	Value (R)	Start date	Duration	Expected completed date

CONTRACT NO: TECH/006/2022/23

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.1.2 CERTIFICATE OF AUTHORITY FOR JOINT VENTURE [WRITE N/A IF NOT APPLICABLE]**

**[PLEASE ATTACH A CERTIFIED COPY OF THE CERTIFICATE]**

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.1.3 SCHEDULE OF PREVIOUS WORK CARRIED OUT BY BIDDER**

**[N.B. COMPULSORY: TO BE USED FOR EVALUATION PURPOSES]**

Provide the following information on **relevant previous experience**. Indicate comparable projects of similar or larger size. This information is material to the award of the Contract.

**Give a minimum of two (2) names and telephone numbers and e-mail address per reference.**

**Please provide latest contact details.**

CLIENT NAME AND PLACE WHERE PROJECT WAS IMPLEMENTED	TEL NO & EMAIL ADDRESS	DESCRIPTION OF WORK	CONTRACT VALUE (R)	DURATION CONTRACT PERIOD
	_____ _____			
	_____ _____			
	_____ _____			



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.1.4** **SCHEDULE OF PROPOSED SUB-CONTRACTORS**  
**[IF NOT WRITE N/A ACROSS THE TABLE]**

Provide details on all sub-contractors you intend utilising for this contract

Type of work to be used for	a % of contract	Name of sub-contractor	B % HDI ownership	c = a x b Total contribution to HDI ownership
Total % of contract sub-contracted		Total contribution of HDI ownership:		

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

## **FORM 2.1.5 FINANCIAL REFERENCES**

### **- FINANCIAL STATEMENTS (delete which is not applicable)**

I/We \_\_\_\_\_ (name of authorized representative)

Agree / Disagree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report.

### **- DETAILS OF BIDDING ENTITY'S BANK**

**If the bidder is a Joint Venture or partnership, the information requested below is required for each member / partner.**

I/ We hereby authorise the Employer to approach all or any of the following banks for the purposes of obtaining a financial reference:

<b>DESCRIPTION OF BANK DETAIL</b>	<b>BANK DETAILS APPLICABLE TO BIDDER</b>
Name of bank	
Contact person	
Branch name & code	
Street address	
Bank Telephone number	(     )
Account number	
Type of account, (i.e. cheque account)	
Bank rating [A, B, C, etc.]	

*Note: Information supplied will be treated with the strictest confidence*

Affix dated bank stamp here

CONTRACT NO: TECH/006/2022/23

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.1.6 DETAILS OF ALTERNATIVE BIDS SUBMITTED**  
**[WRITE N/A ACROSS THE TABLE IF NOT APPLICABLE]**

See condition of bid.

DESCRIPTION

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.1.7 AMENDMENTS AND QUALIFICATIONS BY BIDDER**  
**[WRITE N/A ACROSS THE TABLE IF NOT APPLICABLE]**

See condition of bid

Attach additional information on separate sheets and initial all of them

PAGE	DESCRIPTION

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.



## **CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING**

### **T2.2 OTHER DOCUMENTS REQUIRED FOR BID EVALUATION PURPOSES**

#### **CONTENTS**

FORM 2.2.2	DECLARATION
FORM 2.2.3	DECLARATION OF INTEREST
FORM 2.2.4	MBD 9
FORM 2.2.5	MBD 5

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.2.2 DECLARATION:**

I/ We, the undersigned:

- (a) bid to Construction of Ga-Sako Upgrading of 1.7km Internal Streets in from Gravel to Surfacing to MOLEMOLE LOCAL MUNICIPALITY, described both in this and the other Schedules to this Contract to which I shall annex my signature;
- (b) agree that we will be bound by the specifications, prices, terms and conditions stipulated in those Schedules attached to this bid document, regarding execution of duties;
- (c) further agree to be bound by those conditions, set out in, "PARTS T1; T2; C1; C2; and C3", attached hereto, should this bid be accepted;
- (d) confirm that this bid may only be accepted by Molemole Local Municipality by way of a duly authorised Letter of Acceptance within stipulated timeframe from the appointment letter;
- (e) declare that we are fully acquainted with the Bid document and Schedules and the contents thereof and that we have signed the Bill of Quantities and completed the Returnable Schedules and declarations, attached hereto;
- (f) declare that all amendments to the bid document have been initialled by the relevant authorised person and that the document constitutes a proper contract between MLM and the undersigned.
- (g) certify that the item/s mentioned in the bid document, qualifies/qualify for the preference(s) shown.;
- (h) acknowledge that the information furnished is true and correct;
- (i) Accept that in the event of the contract being awarded as a result of preference claimed in this bid document, I may be required to furnish documentary proof to the satisfaction of MLM that the claims are correct. If the claims are found to be inflated, MLM may in addition to any other remedy it may have, recover from the company or me all costs, losses or damages incurred or sustained by MLM as a result of the award of the contract and/or cancel the contract and claim any damages which MLM may suffer by having to make less favourable arrangements after such cancellation;
- (j) declare that no municipal rates and taxes or municipal service charges owed by the bidder or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months, and
- (k) declare that I have not failed to perform satisfactorily during the last five (5) years on a previous contract with the Municipality, Municipal entity or any other organ of state, after written notice was given to me that my performance was not satisfactory.

**[PLEASE SIGN ON BEHALF OF THE BIDDER]**

**Signed at** \_\_\_\_\_ **on this** \_\_\_\_\_ **day of** \_\_\_\_\_ **20** \_\_\_\_\_

**Authorised Signature:** \_\_\_\_\_

**Name of Bidding Entity:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**As witness:** \_\_\_\_\_

### **FORM 2.2.3      DECLARATION OF INTEREST**

- 1. No bid will be accepted from persons in the service of the state including in instances of non-directors of the entity and also those who may be sub-contracting.**
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.
- 3 In order to give effect to the above, the following questionnaire must be completed with honesty and submitted with the bid.

**Full Name:** \_\_\_\_\_

**Identity Number:** \_\_\_\_\_

**Tax Number:** \_\_\_\_\_

**VAT Number:** \_\_\_\_\_

3.1 Are you presently in the service of the state\* **YES / NO** \_\_\_\_\_

If yes, furnish particulars \_\_\_\_\_

3.2 Have you been in the service of the state for the past twelve (12) months? **YES /NO**

If yes, furnish particulars \_\_\_\_\_

---

\* SCM Regulations: "in the service of the state" means to be –

(a) a member of –

- (i) any municipal Council;
- (ii) any provincial legislature; or
- (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;

(c) an official of any municipality or municipal entity;

(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);

(e) a member of the accounting authority of any national or provincial public entity; or

(f) an employee of Parliament or a provincial legislature.

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

3.3 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved in the project?  
**YES / NO** \_\_\_\_\_

If yes, furnish particulars \_\_\_\_\_

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

If yes, furnish particulars \_\_\_\_\_

\_\_\_\_\_

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

If yes, furnish particulars \_\_\_\_\_

\_\_\_\_\_

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.**

SHOULD THE INFORMATION REQUIRED ON THIS FORM NOT DULY BE SUPPLIED, THIS BID WILL BE AUTOMATICALLY REJECTED.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Position

\_\_\_\_\_  
Company Name



## **FORM 2.2.4 CERTIFICATE OF INDEPENDENT BID DETERMINATION**

- a) This Standard Bidding Document (MBD) must form part of all bids<sup>1</sup> invited.
- b) Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).<sup>2</sup>
- c) Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
  - i. Disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
  - ii. Cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
- d) This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- e) In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

<sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.

<sup>2</sup> Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

### **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 Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of

---

(Name of Bidder)

that:

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:
  - has been requested to submit a bid in response to this bid invitation;
  - could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
  - 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<sup>3</sup> 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;

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

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

**<sup>3</sup> 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.

**[PLEASE SIGN BELOW ON BEHALF OF THE BIDDER]**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Position**

\_\_\_\_\_  
**Name of Bidder**

**MBD 5**

**FORM 2.2.5 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?**

**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.**

**YES/NO**

.....

.....

- 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**

**\*YES / NO**

- 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**

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**3.1 If yes, furnish particulars**

.....  
.....

- 4. Will any portion of goods or services be sourced from outside / NO 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**

**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**

.....  
**Date**

.....  
**Position**

.....  
**Name of Bidder**

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.



## **PART T3: TENDER SPECIFICATIONS**

### **BID SPECIFICATION**

#### ***3.1 Services to be rendered at address:***

**Ga-Sako Village**

#### ***3.2 Work Description (scope)***

### **MINIMUM SPECIFICATION TABLE OF ELEMENTS/COMPONENTS OF THE SERVICE**

Design the following with Labour-Intensive Methods or Techniques:

- ◇ Construction of Ga-Sako Upgrading of 1.7km Internal Streets from Gravel to Surfacing with the following proposed description of pavement layers:
  - (a) Roadbed
  - (b) Sub-Base
  - (c) Base
  - (d) Surfacing of 30mm Asphalt
- ◇ Labour Intensity Construction to create a minimum **35** Work Opportunities
- ◇ Ensure strict adherence to **COVID19** Regulations during Project Implementation

CONTRACT NO: TECH/006/2022/23

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT**

**CONTENTS**

FORM 2.3.1 RECORD OF ADDENDA TO BID DOCUMENTS

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FORM 2.3.1 RECORD OF ADDENDA TO BID DOCUMENTS**  
**[WRITE N/A ACROSS THE TABLE IF NOT APPLICABLE]**

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

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

Attach additional pages if more space is required.

**[PLEASE SIGN BELOW FOR THE BIDDING COMPANY]**

**Signature of Authorized person:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Name of authorized person:** \_\_\_\_\_ **Position:** \_\_\_\_\_



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.



## **CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING**

### **PART C1 AGREEMENT AND CONTRACT DATA**

#### **C1.1 FORM OF OFFER AND ACCEPTANCE**

#### **C.1.2 SCHEDULE OF DEVIATIONS [WRITE N/A IF NOT APPLICABLE]**

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

## **C1.1 FORM OF OFFER AND ACCEPTANCE [COMPULSORY]**

### **FORM OF OFFER AND ACCEPTANCE (AGREEMENT)**

#### **1. OFFER BY THE BIDDING COMPANY**

**THE EMPLOYER, IDENTIFIED IN THE ACCEPTANCE SIGNATURE BLOCK, HAS SOLICITED OFFERS TO ENTER INTO A CONTRACT IN RESPECT OF THE FOLLOWING WORKS: CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING.**

The Bidder, identified in the Offer signature block below, has examined the documents listed in the Bid Data and addenda thereto as listed in the Bid Schedules, and by submitting this Offer has accepted the Conditions of Bid.

By the representative of the Bidder, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Bidder 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 AMOUNT INCLUSIVE OF VALUE ADDED TAX:**

IN WORDS:

---

---

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 Bidder before the end of the period of validity stated in the Bid Data, whereupon the Bidder becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the Bid documents and the receipt by the Bidder 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 AND ON BEHALF ON THE BIDDER [PLEASE SIGN]:**

Signature(s) \_\_\_\_\_

Name(s) \_\_\_\_\_ Capacity \_\_\_\_\_

(Bidding Company Name) \_\_\_\_\_

Name of Witness \_\_\_\_\_

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

Signature \_\_\_\_\_ Date: \_\_\_\_\_

**1. ACCEPTANCE**

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Bidder'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 Bidder's Offer shall form an agreement between the Employer and the Bidder upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract, are contained in

Part C1 Agreements and Contract Data, (which includes this Agreement)

Part C2 Pricing Data

Part C3 Scope of Work

AND Documents or parts thereof, which may be incorporated by reference into Parts C1 to C3 above.

Deviations from and amendments to the documents listed in the Bid Data and any addenda thereto listed in the Bid Schedules as well as any changes to the terms of the Offer agreed by the Bidder 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 duly signed by the authorised representative(s) of both parties.

The Bidder 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. 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 Bidder receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Bidder (now Contractor) within five working 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.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the Bid documents and the receipt by the Bidder 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 EMPLOYER: MOLEMOLÉ LOCAL MUNICIPALITY [TO BE SIGNED BY MUNICIPAL MANAGER]**

Signature(s) \_\_\_\_\_

Name \_\_\_\_\_

Capacity \_\_\_\_\_

Name of Witness \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

### **C.1.2 CONTRACT DATA**

#### **CONTENTS**

##### **C.1.2.1 Part 1: Data provided by the Employer**

C.1.2.1.1 Conditions of Contract

C.1.2.1.2 Contract-specific Data

C.1.2.1.2.1 Compulsory Data

C.1.2.1.2.2 Variations to the General Conditions of Contract

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**C.1.2.1..Part 1: Data provided by the Employer**

C.1.2.1.1 Conditions of Contract

The Conditions of Contract are:

- the “General Conditions of Contract” as they appear in the commercially-available publication “General Conditions of Contract for Construction Works, Third Edition, 2015”, hereinafter referred to as “GCC 2015”; and
- Specific Data as contained in this Contract Data.

Each party to the Contract shall purchase its own copy of the GCC 2015 that applies to this Contract, available from its publisher:

South African Institution of Civil Engineering  
Private Bag X200  
Halfway House  
1685  
South Africa

Tel +27 (0)11 805 5947

**The following Notes apply:**

**Note 1**

The GCC 2015 makes several references to the Contract Data.

Each item of data below is cross-referenced to the clause in the Conditions of Contract to which it applies. Notwithstanding anything specified to the contrary, the Contract Data shall take precedence in the interpretation of any ambiguity or inconsistency between it and the GCC 2015.

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purpose of interpretation, the priority of the documents shall be in accordance with the following order of precedence:

- (a) the Form of Offer and Acceptance.
- (b) amendments to the General Conditions of Contract within the Contract Data.
- (c) additional conditions to the General Conditions of Contract within the Contract Data.
- (d) corrigenda to the General Conditions of Contract.
- (e) the General Conditions of Contract.
- (f) the Specifications, Drawings, Schedules and other documents forming part of the Contract  
(in that order) contained in the Scope of Work and the Site Information.

If any ambiguity or discrepancy is found in the documents, the Engineer needs to be contacted to issue any necessary clarification or instruction.

## CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**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 document.

**C.1.2.1.2 Contract-specific Data**

The following contract-specific data, referring to the General Conditions of Contract, are applicable to this Contract:

**C.1.2.1.2.1 Compulsory Data**

Clause	Data		
1.1.13	The Defects Liability Period is <b>12 months</b>		
1.1.14	The time for achieving Practical Completion is <b>10 months</b>		
1.1.15	The name of the Employer is <b>Molemole Municipality</b>		
1.1.26	The Pricing Strategy of a Re-measurement Contract shall apply		
1.2.1.2	<p>The address of the Employer is:</p> <p>Physical address: 303 Church Street MOGWADI 0715</p> <p>e-mail address: <a href="mailto:phaahla@molemole.gov.za">phaahla@molemole.gov.za</a></p> <p>Contact numbers: Corporate: 015 501 3000 Direct: 015 501 3038</p>		
1.1.16	<p>The name of the Employer's Agent:</p> <p>Nevhutalu Consulting Engineers</p>		
1.2.1.2	<p>The address of the Employer's Agent:</p> <table border="0"> <tr> <td>Physical address: Unit 10, JCJ Limpro Building 6 Hans Van Rensburg street Polokwane; 0700</td> <td>Postal Address: Postnet Suite 92 Private Bag X 9676 Polokwane,0700</td> </tr> </table> <p>e-mail address: <a href="mailto:admin@nevhutalu.co.za">admin@nevhutalu.co.za</a></p> <p>Contact Number: Tel: 015 291 3519 Fax: 015 291 3491</p>	Physical address: Unit 10, JCJ Limpro Building 6 Hans Van Rensburg street Polokwane; 0700	Postal Address: Postnet Suite 92 Private Bag X 9676 Polokwane,0700
Physical address: Unit 10, JCJ Limpro Building 6 Hans Van Rensburg street Polokwane; 0700	Postal Address: Postnet Suite 92 Private Bag X 9676 Polokwane,0700		

## CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

Clause	Data
4.9.1	The Contractor shall deliver to the Engineer, on a monthly basis, a detailed inventory of Construction Equipment kept on Site, full particulars given for each day of the month. Distinction shall be made between Owned Equipment and Hired Equipment as well as Equipment in working order and Equipment out of order. Such inventory shall be submitted by the seventh day of the month following the month to be reported.
4.10.2	The Contractor shall deliver to the Engineer, on a monthly basis, a return in detail of supervisory staff and the number of categorized classes of labour employed each day for the said period by the Contractor for execution of the Contract. Such return shall be submitted by the seventh day of the month following the month to be reported.
5.3.1	<p>The documentation required before commencement with Works execution are:</p> <p>Health and Safety Plan (Refer to Clause 4.3)</p> <p>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).</p> <p>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).</p> <p>Initial programme (Refer to Clause 5.6).</p> <p>Security (Refer to Clause 6.2).</p> <p>Insurance (Refer to Clause 8.6).</p>
5.3.2	The time to submit the documentation required before commencement of the Works is <b>14 Days</b> .
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but shall be as set out elsewhere in the Contract.
5.8.1	<p>The non-working Days are Sundays.</p> <p>The special non-working Days are:</p> <p>Statutory public holidays; and</p> <p>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.</p>
5.13.1	The penalty for failing to complete the Works is <b>0,1</b> percent of contract price per calendar day.
5.16.3	The latent defects period is 10 years, commencing on the Day after the date of certification of Practical Completion.
6.5.1.2.3	The percentage allowance to cover overhead charges is: 50 per cent for labour; and 15 per cent for materials.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%. Proof of ownership is required.
6.10.3	<p>The limit of <b>retention money</b> is <b>10%</b> of the value of the Contract Price.</p> <p><b>A Retention Money Guarantee is compulsory.</b></p> <p>A penalty will be applied for non-delivery of the Retention Money Guarantee as required. The penalty will be 10% of the value of the completion Retention Money Amount per calendar month for late delivery of the said Retention Money Guarantee.</p>

## CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

Clause	Data
8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is <b>nil</b> .
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is a maximum of <b>10% (ten percent)</b> of the Contract Sum.
8.6.1.3	The limit of indemnity for liability insurance is equal to the contract amount.
10.5.1	Dispute resolution shall be by standing adjudication, use GCC 2015, Appendix 5.
10.7.1	The determination of disputes shall be by arbitration.
	<p><b>Payment for labour-intensive component of the works</b></p> <p><i>Payment for works identified in the Scope of Works 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 payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.</i></p>
	<p><b>Linkage of payment for labour-intensive component of works to submission of project data</b></p> <p><i>The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted.</i></p>
	<p><b>Applicable Labour Laws</b></p> <p><i>The current Ministerial Determination (also downloadable at <a href="http://www.epwp.gov.za">www.epwp.gov.za</a>), Expanded Public Works Programmes, issued in terms of the Basic Condition of Employment Act of 1997 by the Minister of Labour in Government Notice, shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled workers.</i></p>



**C.1.2.1.2.2 Variations to the General Conditions of Contract**

<b>Clause</b>	<b>Data</b>
1.1.1.16	<p><b>Employer's Agent</b></p> <p>Add the following after the first paragraph:</p> <p>"Employer's Agent shall have the same meaning and be synonymous with Engineer/engineer throughout the Contract document."</p>
2.5.1	<p><b>Cession</b></p> <p><i>Amend Clause 2.5.1 as follows:</i></p> <p><i>Delete the words "without the written consent of the other"</i></p>
5.3.3	<p><b>Time to instruct commencement of the Works</b></p> <p>Add the following to Clause 5.3.3 after the last sentence:</p> <p>"The Contractor shall not commence working until they have an approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 and complied with the initial requirements thereof."</p>
5.14.1	<p><b>Practical Completion</b></p> <p>Replace the last sentence of the second paragraph:</p> <p>"Should the Employer's Agent ... on expiry of 14 days."</p> <p>with the following:</p> <p>"Should the Employer's Agent not issue such a list within 14 days, Practical Completion shall be deemed to have been achieved on the said fourteenth day."</p>
5.14.2	<p><b>Issue of Certificate of Practical Completion</b></p> <p>Replace "the Employer's Agent" in the second and third lines with the following:</p> <p>", the Contractor shall notify the Employer's Agent, who shall inspect the Works and the Employer's Agent"</p>
5.14.4	<p><b>Certificate of Completion</b></p> <p>Replace "the Employer's Agent" in the third line of the first paragraph with:</p> <p>", the Contractor shall notify the Employer's Agent, who shall inspect the works and the Employer's Agent"</p>
5.14.5.1	<p><b>Consequences of Completion</b></p> <p><i>Amend Clause 5.14.5.1 as follows:</i></p> <p><i>In the second line, substitute the word 'Guarantor' with 'Contractor'.</i></p>

### C.1.2 SCHEDULE OF DEVIATIONS [WRITE N/A IF NOT APPLICABLE]

Notes:

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

<b>1</b>	<b>Subject</b> _____
	Details _____
<b>2</b>	<b>Subject</b> _____
	Details _____
<b>3</b>	<b>Subject</b> _____
	Details _____
<b>4</b>	<b>Subject</b> _____
	Details _____
<b>5</b>	<b>Subject</b> _____
	Details _____
<b>6</b>	<b>Subject</b> _____
	Details _____

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Bidder agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Bid Data and addenda thereto as listed in the Bid Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Bidder 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 bid documents and the receipt by the Bidder 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 BIDDER [PLEASE SIGN]:**

Signature(s) \_\_\_\_\_

CONTRACT NO: TECH/006/2022/23

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

Name(s) \_\_\_\_\_

Capacity \_\_\_\_\_

(Bidder's Name) \_\_\_\_\_

Name of Witness \_\_\_\_\_

Signature \_\_\_\_\_

Date: \_\_\_\_\_

**FOR THE EMPLOYER: MOLEMOLE LOCAL MUNICIPALITY [PLEASE SIGN]**

Signature(s) \_\_\_\_\_

Name \_\_\_\_\_

Capacity \_\_\_\_\_

Name of Witness \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



## **PART C2 PRICING DATA**

### **C2.1 PRICING INSTRUCTIONS**

- 1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.
- 2 The Bill comprises items covering the Bidder's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

Although the Bidder is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out.

Clause 8 of each Standardized Specification, and the measurement and payment clause of each Particular Specification, read together with the relevant clauses of the Project Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.

- 3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Company submitted on such a basis. Should any requirement of the measurement and payment clause of the appropriate Standardized or Project Specification(s) be contrary to the terms of the Bill the requirement of the appropriate Standardized, Project, or Particular Specification as the case may be, shall prevail.
- 4 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the: GA-SAKO UPGRADING OF 0.4KM INTERNAL STREETS FROM GRAVEL TO SURFACING and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Bid is based.
- 6 The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the schedule of quantities, will be used to determine payments to the contractor.
- 7 An amount or rate shall be entered against each item in the Bill of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Bill.

The Bidder shall also fill in a rate against the items where the words "rate only" appear in the amount column. Although no work is foreseen under these items and no quantities are consequently given in the quantity column, the stated rates shall apply should work under these items actually be required.

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

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

The stated rates, prices and sums shall, subject only to the provisions of the Conditions of Contract, remain valid irrespective of any change in the quantities during the execution of the Contract.

Rates quoted are fixed and quoted in ZAR currency; and shall not in any way be affected by rand/dollar exchange rate or any currency.

- 8 The quantities of work as measured and accepted and certified for payment in accordance with the Conditions of Contract, and not the quantities stated 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 certified for payment.
- 9 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 Standardized, Project or Particular Specifications
Quantity	:	The number of units of work for each item
Rate	:	The payment per unit of work at which the Bidder bids to do the work. Should be quoted in ZAR currency only
Amount	:	The quantity of an item multiplied by the bid rate of the (same) item. Should be quoted in ZAR currency only
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. Should be quoted in ZAR currency only
- 10 The units of measurement indicated in the Bill of Quantities are metric units. The following abbreviations may appear in the Bill of Quantities:  
Measurement and payment shall be in accordance with the relevant provisions of COLTO Standardized Specifications for Civil Engineering Construction referred to in the Scope of Work. The Preliminary and General items shall be measured in accordance with the provisions of COLTO 1000, *General*.
11. The units of measurement described in the Bills of Quantities are metric units. Abbreviations used in these Bills of Quantities are as follows:

%	=	percent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kilolitre
km	=	kilometre
km-pass	=	kilometre-pass
kPa	=	kilopascal
kW	=	kilowatt
l	=	litre
m	=	metre
mm	=	millimetre
m <sup>2</sup>	=	square metre
m <sup>2</sup> -pass	=	square metre-pass
m <sup>3</sup>	=	cubic metre
m <sup>3</sup> -km	=	cubic metre-kilometre
MN	=	meganewton
MN.m	=	meganewton-metre
MPa	=	megapascal
No.	=	number
Prov sum	=	Provisional sum
PC sum	=	Prime Cost sum
R/only	=	Rate only
sum	=	lump sum
t	=	ton (1000 kg)
W/day	=	Work day

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

12. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
13. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.
14. It will be assumed that prices included in these Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for Bids. (Refer to [www.stanza.org.za](http://www.stanza.org.za) or [www.iso.org](http://www.iso.org) for information on standards)
15. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount Bided such items
16. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
17. The quantities set out in these Bills of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.
18. Reasonable compensation will be received where no pay item appears in respect of work required in the Bills of Quantities in terms of the Contract and which is not covered in any other pay item.
19. The short descriptions of the items of payment given in these Bills of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
20. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the COLTO Standardised Specifications.
21. Those parts of the works to be constructed using labour-intensive methods should be marked in the bill of quantities with the letter LI either in a separate column or as a prefix or suffix against every item so designated.

**MOLEMOLE LOCAL MUNICIPALITY****PROJECT DESCRIPTION: CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GAVEL TO SURFACING****C2.2 BILL OF QUANTITIES**

	<u>Description</u>	<u>Contents</u>	<u>Page</u>
1200	General requirements and provisions		74 – 75
1300	Contractor's establishment on site and general obligations		76– 76
1400	Housing, offices and laboratories for the engineer's site personnel		77– 78
1500	Accommodation of traffic		79 – 80
1700	Clearing and grubbing		80 – 80
1800	Daywork and hire of constructional plant		82 – 83
2100	Drains		84 – 86
2200	Prefabricated Culverts		87 – 89
2300	Concrete Kerbing, concrete channeling, open concrete chute and concrete lining for open drains		90 – 92
3100	Borrow materials		93 – 93
3300	Mass earthworks		94 – 95
3400	Pavement layers of gravel material		96 – 96
3500	Stabilization		97 – 97
3600	Crushed Stone Base		98 – 98
4100	Prime Coat		99 – 99
4200	Asphalt Base and Surfacing		100 – 100
5100	Pitching stonework and protection against erosion		101 – 101
5200	Gabions		102 – 102
5400	Guardrails		103– 103
5600	Road signs		104 – 104
5700	Road marking		105 – 105
5900	Finishing the road and reserve and treating old roads		106 – 106
8100	Testing Materials and Workmanship		107 – 107
<b>C2.3 SUMMARY OF BILL OF QUANTITIES</b>			<b>108 – 108</b>
<b>C2.4 TENDER (CONTRACT) SUM</b>			<b>109 – 109</b>
<b>TENDER (CONTRACT) PRICE CARRIED TO FORM OF OFFER OF ACCEPTANCE</b>			<b>109 – 109</b>

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE A: GENERAL**  
**SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1200</b>		<b>GENERAL REQUIREMENTS AND PROVISIONS</b>				
<b>B12.01</b>		<b>EXCAVATIONS OF MATERIAL WITHIN THE FOLLOWING DEPTH RANGES BELOW GROUND LEVELS FOR EXPOSING OR SEARCHING EXISTING SERVICES</b>				
		a) Depth between 0 and 2,0m				
	LI	(i) Soft material	m <sup>3</sup>	80		
		(ii) Intermediate material	m <sup>3</sup>	50		
<b>B12.03</b>		<b>(1) RELOCATION OR PROTECTION OF SERVICES AS ORDERED BY ENGINEER</b>				
	LI	a) Cost of work	Prov Sum	1	-	R 80 000.00
		b) Handling Costs and Profit in respect of item (a) above	%	R 80 000.00		
<b>B12.04</b>		<b>PROVISION FOR COMMUNITY LIAISON OFFICER</b>				
	LI	a) Payment of the Community Liaison Officer (R 4500.00/month)	P Sum	1	-	R 45 000.00
		b) Contractor's handling cost in respect of item B12.04 (a)	%	R 45 000.00		
<b>B12.05</b>		<b>CONSTRUCTION HEALTH AND SAFETY OBLIGATIONS</b>				
		a) Occupational Health and Safety obligations	Month	10		
<b>B12.06</b>		<b>COMPENSATION FOR LANDOWNERS</b>				
		a) Prime Cost Sum	PC Sum	1	-	R 50 000.00
		b) Handling Cost and Profit of item B12.06 (a) above	%	R 50 000.00		
<b>B12.07</b>		(a) Setting Out and Protection of Beacons	Prov Sum	1	-	R 15 000.00
		b) Contractor's handling cost in respect of item a) above.	%	R 15 000.00		
<b>1200</b>		<b>TOTAL CARRIED FORWARD</b>				



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE A: GENERAL**  
**SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>BROUGHT FORWARD</b>						
<b>B12.09</b>		<b>(i) PROVISION OF TRAINING</b>				
		a) Training and Venue	P Sum	1	-	R 220 000.00
		c) Remuneration of workers undergoing training	P Sum	1	-	R 50 000.00
		(ii) Contractor's handling costs, profits and all other charges in respect of a, b, and c above	%	R 270 000.00		
<b>B12.10</b>		<b>EMPLOYMENT OF GRADUATE STUDENTS IN TRAINING</b>				
		a) Payment of the Graduates Student in Training (R 4500.00)	P Sum	1	-	R 45 000.00
		b) Contractor's handling cost in respect of item a) above	%	R 45 000.00		
<b>B12.11</b>		<b>PERSONEL PROTECTIVE CLOTHING</b>				
		a) Cost of Protective Clothing	P Sum	1	-	R 70 000.00
		b) Contractor's handling cost in respect of item a) above	%	R 70 000.00		
<b>B12.11</b>		<b>PROJECT STEERING COMMITTEE</b>				
		a) Payment of PSC for attending <a href="#">meetings @ R400.00/meeting</a> for maximum of 5 members	P Sum	1	-	R 20 000.00
		b) Contractor's handling cost in respect of item a) above	%	R 20 000.00		
<b>B12.12</b>		<b>Construction Nameboard</b>	No.	2		
		<b>MEDICALS FOR LABOURERS</b>				
		a) Cost of Medicals for labourers	P Sum	1	-	R 42 000.00
		b) Contractor's handling cost in respect of item a) above	%	R 42 000.00		
<b>1200</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE A: GENERAL****SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1300</b>		<b>CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS</b>				
<b>13.01</b>		The contractor's general obligations:				
		(a) Fixed obligations	L/Sum	1		
		(b) Value-related obligations	L/Sum	1		
		(c) Time-related obligations	Month	10		
<b>1300</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE A: GENERAL****SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1400</b>		<b>HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL</b>				
<b>14.01</b>		<b>Office and Laboratory Accommodation:</b>				
		(a) Offices (interior floor space only - engineer's office and conference room)	m <sup>2</sup>	52		
		(b) Laboratories (interior floor space only)	m <sup>2</sup>	-		Rate Only
		(c) Open concrete working floors, 150mm Thick	m <sup>2</sup>	-		Rate Only
		(d) Roof cover open concrete working floors	m <sup>2</sup>	-		Rate Only
		(e) Ablution units	No	-		Rate Only
<b>14.02</b>		<b>Office and laboratory furniture:</b>				
		(a) Chairs	No.	16		
		(b) Draughtsman's stools	No.	1		
		(c) High chairs	No.	2		
		(d) Desks, complete with drawers and locks	No.	2		
		(e) Drawing table	No.	1		
		(f) Conference tables	No.	1		
<b>14.04</b>		<b>Car ports:</b>				
		Car ports, as specified, at offices and laboratory buildings	No.	1		
<b>1400</b>		<b>TOTAL CARRIED TO FORWARD</b>				

CONSTRUCTION OF GA-SAKO UPGRADE 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE A: GENERAL****SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>14.08</b>		<b>Services</b>				
		Provision of water, electricity, low pressure Gas, sewerage, septic tank, sewage and Rubbish removals, cleaning services, Maintenance and repairs, all as Specified in clause 1404, including the Construction and maintenance of access roads and paths etc.				
		(a) Services at offices and laboratories				
		(i) Fixed Costs	L. Sum	1		
		(ii) Running costs	Month	10		
<b>B14.11</b>		<b>Provision and erection of security fencing. (including gate)</b>	m	400		
<b>B14.12</b>		<b>Provision of Printing, Scanning and Photostat Facilities</b>	Month	10		
14.3		a) Provision of Phone including All Fees, Cost of Phone Calls and Internet Connection.	P.C Sum	1	-	R 40 000.00
		b) Contractor's Handling Costs in respect of Item 14.13 (a) above.	%	R 40 000.00		
<b>1400</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 1500: ACCOMMODATION OF TRAFFIC**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1500</b>		<b>ACCOMMODATION OF TRAFFIC</b>				
<b>15.01</b>		<b>Accommodating traffic and maintaining deviations incl. road signs</b>	km	1.7		
<b>15.02</b>		<b>Earthworks for deviations</b>				
		(a) Shaping of deviations	km	1.7		
		(b) Cut and borrow to fill	m <sup>3</sup>	80		
		(c) Cut to spoil	m <sup>3</sup>	15		
<b>B15.03</b>		<b>Temporary traffic-control facilities:</b>				
		(a) Flag persons	man-day	410		
		(b) Portable STOP and GO-RY signs	No.	2		
		(c) Road signs, R- and TR- series;				
		(i) 1200mm	No.	2		
		(ii) 1500mm	No.	2		
		(d) Road signs, TW- series				
		(i) 1500mm	No.	2		
		(ii) 2400mm x 400mm	No.	2		
		(e) Road signs, STW-, DTG-, TGS- and TG-Series excluding delineators and barricades				
		(i) 1600mm x 1200mm	m <sup>2</sup>	2		
		(ii) 2400mm x 1800mm	m <sup>2</sup>	2		
		(f) Delineators DTG50J, size indicated:				
		(i) Single	No.	10		
		(ii) Mounted back to back	No.	28		
		(g) Movable barricade/road sign combination with an affective width of 6m	No.	2		
<b>1500</b>		<b>TOTAL CARRIED FORWARD</b>				

CONSTRUCTION OF GA-SAKO UPGRADE 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B1: ROADWORKS**  
**SECTION 1500: ACCOMMODATION OF TRAFFIC**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
		(j) Traffic Cones				
		(j) (i) 750mm	No	8		
		(m) Two way Communication Devices	No	3		
		(n) Provision of high Visibility Safety Jackets and Safety Hats	No	7		
15.05		<b>Gravelling and repairs of deviation</b>	m <sup>3</sup>	100		
15.06		<b>Watering of deviations</b>	kl	100		
15.07		<b>Blading of by-passes and existing roads used as deviations by grader</b>	km-pass	6		
15.10		<b>Accommodation of traffic where the road is constructed in half widths.</b>	km	-		Rate Only
15.12		<b>(a) Provision and laying of temporary Prefabricated culverts complete</b>				
		(i) 50D-load concrete pipe culverts SC type With ogee joints on class B bedding				
		1. 600 dia	m	-		Rate Only
		2. 750 dia	m	-		Rate Only
		3. 900 dia	m	-		Rate Only
		4. 1050 dia	m	-		Rate Only
15/16.01		<b>Overhaul of materials hauled in excess of a free haul distance of 0.5 km for haul through 1.0km (restricted overhaul)</b>	m <sup>3</sup>	1 200		
15/16.02		<b>Overhaul of materials hauled in excess of 1km (ordinary overhaul)</b>	m <sup>3</sup> -km	15 000		
15/17.01		<b>Clearing and grubbing</b>	ha	-		Rate Only
15/17.02		<b>Removal and grubbing of large trees and tree stumps;</b>				
		a) Girth exceeding 1m up to and including 2m	No.	-		Rate Only
1500	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 1700: CLEARING AND GRUBBING**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1700</b>		<b>CLEARING AND GRUBING</b>				
<b>17.01</b>		<b>Clearing and Grubbing of:</b>				
		(a) Normal areas				
		(i) Within the road reserve	ha	0.9		
		(ii) In borrow areas	ha	0.35		
		(b) Existing fill embankments with slopes steeper than 1:4	ha	-		Rate Only
<b>17.02</b>		<b>Removal and grubbing of large trees and tree stumps:</b>				
		(a) Girth larger than 1m up to and including 2m	No.	1		
		(b) Girth larger than 2m up to and including 3m	No.	1		
		(c) Girth larger than 3m up to and including 4m	No.	-		Rate Only
<b>1700</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 1800: DAYWORK AND HIRE OF CONSTRUCTION PLANT**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1800</b>		<b>DAYWORK AND HIRE OF CONSTRUCTIONAL PLANT</b>				
<b>B18.01</b>		<b>Labour:</b>				
		<b>(a) Normal working hours:</b>				
		(i) Team Leader	hour	-		Rate Only
		(ii) Semi-skilled labourer	hour	-		Rate Only
		(iv) Labourer	hour	-		Rate Only
		<b>(b) Overtime and Saturdays:</b>				
		(I) Team Leader	hour	-		Rate Only
		(ii) Semi-skilled labourer	hour	-		Rate Only
		(iv) Labourer	hour	-		Rate Only
<b>B18.02</b>		<b>Hire of construction equipment:</b>				
		1) Bulldozer with ripper:				
		(i) 70kW - 170kW	hour	-		Rate Only
		2) Self-propelled grader (100 to 200kW)	hour	-		Rate Only
		3) Front-end loader with 2 to 3 m3 capacity	hour	-		Rate Only
		4) Tip truck or dumper with:				
		(i) 5 m <sup>3</sup> capacity	hour	-		Rate Only
		(ii) 10 m <sup>3</sup> capacity	hour	-		Rate Only
		5) Air compressor with:				
		(i) 6 m <sup>3</sup> /min. capacity with two pneumatic drills	hour	-		Rate Only
		6) Flat wheel roller (steel drums) with 10 to 20 tons capacity	hour	-		Rate Only
		7) Pneumatic-tyred roller with 10 to 25 tons capacity.	hour	-		Rate Only
		8) Vibratory roller of 8 tons capacity	hour	-		Rate Only
		9) TLB (tractor/loader/backhoe)	hour	-		Rate Only
<b>1800</b>		<b>TOTAL CARRIED FORWARD</b>				



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 1800: DAYWORK AND HIRE OF CONSTRUCTION PLANT**

ITEMS		DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
		10) 13 500 litre water tanker	hour	-		Rate Only
		11) 1800 litre water tanker	hour	-		Rate Only
		12) Bomag 65	Daily	-		Rate Only
		13) Bomag 90	Daily	-		Rate Only
		14) Excavator 25 tons	hour	-		Rate Only
		15) Excavator 30 tons	hour	-		Rate Only
		16) Generator	Daily	-		Rate Only
		17) Water pump	Daily	-		Rate Only
		18) Concrete saw cutter	Daily	-		Rate Only
		19) Flatbed truck	hour	-		Rate Only
		20) Lowbed	km	-		Rate Only
<b>1800</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 2100: DRAINS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2100</b>		<b>DRAINS</b>				
<b>21.01</b>		<b>Excavation for open drains:</b>				
		(a) Excavating soft materials situated within the following depth ranges below the surface level:				
	LI	(i) 0 m up to 1,5m	m <sup>3</sup>	63		
		(ii) Exceeding 1,5m and up to 3,0m	m <sup>3</sup>	-		Rate Only
		(b) Extra over sub item 21.01(a) for excavation in hard material, irrespective of depth	m <sup>3</sup>	20		
<b>21.03</b>		<b>SUBSURFACE DRAINAGE:</b>				
		<b>Excavation for subsoil drainage Systems:</b>				
		(a) Excavating soft material situated within the following depth ranges below the surface level:				
	LI	(i) 0 m up to 1,5m	m <sup>3</sup>	-		Rate Only
		(ii) Exceeding 1,5m and up to 3,0m	m <sup>3</sup>	-		Rate Only
		(b) Extra over sub item 21.03(a) for excavation in hard material, irrespective of depth	m <sup>3</sup>	-		Rate Only
<b>21.04</b>	LI	<b>Impermeable backfilling to subsoil Drainage systems</b>	m <sup>3</sup>	-		Rate Only
<b>21.05</b>	LI	<b>Banks and dykes</b>	m <sup>3</sup>	-		Rate Only
<b>21.06</b>		<b>Natural permeable material in subsoil drainage systems (crushed stones)</b>				
		(a) Crushed stone obtained from Commercial sources. (no overhaul)				
		(i) Coarse grade stone. (19mm aggregate)	m <sup>3</sup>	-		Rate Only
		(ii) Fine-grade stone. (13.2mm aggregate)	m <sup>3</sup>	-		Rate Only
<b>2100</b>	<b>TOTAL CARRIED FORWARD</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS  
SECTION 2100: DRAINS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>21.07</b>		<b>Natural permeable material in subsoil drainage systems (sand)</b>				
		(a) Sand obtained from approved sources On the site (1km free haul)	m <sup>3</sup>	-		Rate Only
		(b) Sand obtained from commercial sources: (no haul)				
		(i) Medium-grade sand 2,0mm	m <sup>3</sup>	-		Rate Only
		(ii) Fine-grade sand 0,2mm	m <sup>3</sup>	-		Rate Only
<b>21.08</b>		<b>Pipes in subsoil drainage systems:</b>				
		(b) Unplasticised PVC pipes and fittings, normal duty, complete with couplings:				
	LI	(ii) 110 mm internal dia., normal	m	-		Rate Only
	LI	(iii) 160mm internal dia., slotted or perforated	m	-		Rate Only
	LI	(iv) 160mm internal dia., normal	m	-		Rate Only
		(c) HDPE flexible pipes with smooth bore complete with couplings				
	LI	(i) 110mm internal dia., perforated or slotted	m	-		Rate Only
	LI	(ii) 110mm internal dia, unperforated	m	-		Rate Only
	LI	(iii) 160mm internal dia. Perforated or slotted	m	-		Rate Only
	LI	(iv) 160mm internal dia. unperforated	m	-		Rate Only
<b>B21.09</b>	LI	<b>Polyethylene sheeting 0,25mm thick, or similar approved material for lining Subsoil drainage systems.</b>	m <sup>2</sup>	-		Rate Only
<b>2100</b>	<b>TOTAL CARRIED FORWARD</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 2100: DRAINS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>21.10</b>	LI	Synthetic-fibre filter fabric  (a) Non-woven needle punched type; (l) "Kaymat U24" or approved equivalent	m <sup>2</sup>	-		Rate Only
<b>21.11</b>	LI	Composite in-plane drainage systems as shown on the drawing.  (a) 700mm deep (b) 1000mm deep	m m	- -		Rate Only Rate Only
<b>21.12</b>		<b>Concrete outlet structures, manhole boxes, junction boxes and cleaning eyes for subsoil drainage systems</b>				
	LI	(a) Outlet structures	No.	-		Rate Only
	LI	(b) Cleaning eyes	No.	-		Rate Only
<b>21.13</b>	LI	Concrete caps for subsoil drain pipes	No.	-		Rate Only
<b>21.15</b>		Overhaul for material hauled in excess of 1km free-haul (normal overhaul)	m <sup>3</sup> -km	166		
<b>21.16</b>	LI	Backfilling existing eroded side drains	m <sup>3</sup>	-		Rate Only
<b>21.17</b>	LI	Test flushing of piped subsoil drains	No.	-		
<b>B21.20</b>	LI	Galvanized wire mesh. 250x250 at the outlets of subsoil drainage system	No.	-		Rate Only
<b>2100</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADE 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 2200: PREFABRICATED CULVERTS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2200</b>		<b>PREFABRICATED CULVERTS</b>				
<b>B22.01</b>		<b>Excavation:</b>				
		(a) Excavating soft material situated within the following depth ranges below the surface level:				
	LI	(i) 0 m up to 2.0m	m <sup>3</sup>	52		
		(ii) Exceeding 1,5m and up to 3,0m	m <sup>3</sup>	7		
		(iii) Exceeding 3,0m and up to 4,5m	m <sup>3</sup>	-		Rate Only
		(b) Extra over item B22.01(a) for excavation in hard material, irrespective of depth	m <sup>3</sup>	-		Rate Only
<b>22.02</b>		<b>Backfilling:</b>				
	LI	(a) Using the excavated material	m <sup>3</sup>	32		
	LI	(b) Using imported selected material: (i) Granular material	m <sup>3</sup>	-		Rate Only
	LI	(c) Extra over sub items B22.02 (a) b) and (b)(i) for soil cement back- filling: (4% of Portland cement by volume)	m <sup>3</sup>	14		
<b>22.03</b>		<b>Concrete pipe culverts:</b>				
		(b) On class B bedding:				
		(i) SC type, Ogee joints:				
	LI	(1) 450 mm dia (Class 100 D-load pipes)	m	-		Rate Only
	LI	(2) 600 mm dia (Class 100 D-load pipes)	m	30		
	LI	(3) 750 mm dia (Class 100 D-load pipes)	m	-		Rate Only
		(4) 900 mm dia (Class 100 D-load pipes)	m	-		Rate Only
		(5) 1050 mm dia. (Class 100 D-load pipes)	m	-		Rate Only
		(6) 1200 mm dia. (Class 100 D-load pipes)	m	-		Rate Only
<b>2200</b>		<b>TOTAL CARRIED FORWARD</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 2200: PREFABRICATED CULVERTS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>22.05</b>		<b>Portal and rectangular culverts</b>				
		(b) without prefabricated floor slabs complying with SANS 986				
		(iii) 1200mm x 600mm	m	-		Rate Only
		(iv) 1200mm x 900mm	m	-		Rate Only
<b>B22.07</b>		<b>Cast in – situ concrete and formwork</b>				
	LI	a) In class A bedding, screeds and the encasing for pipes, including formwork (class 15/19)	m <sup>3</sup>	-		Rate Only
		b) In floor slabs for portal or rectangular culverts, including formwork and Class U2 surface finish:				
	LI	(i) Class 25/19 concrete	m <sup>3</sup>	6		
		c) In inlet and outlet structures, catchpits, manholes, thrust blocks and anchor blocks, excluding formwork but including Class U2 surface finish				
	LI	(i) Class 25/19 concrete	m <sup>3</sup>	-		Rate Only
		d) Formwork of concrete under sub item 22.07 (c) above				
	LI	(i) Class F1 surface finish	m <sup>2</sup>	6		
	LI	(ii) Class F2 surface finish	m <sup>2</sup>	-		Rate Only
	LI	(iii) Class F3 surface finish	m <sup>2</sup>	6		
<b>22.08</b>	LI	<b>Concrete backfill for culverts, class 15/19 Steel reinforcement:</b>	m <sup>3</sup>	-		Rate Only
	LI	(a) Mild steel bars	t	-		Rate Only
	LI	(b) High tensile steel bars	t	-		Rate Only
	LI	(c) Welded steel fabric	kg	950		
<b>2200</b>	<b>TOTAL CARRIED FORWARD</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 2200: PREFABRICATED CULVERTS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>22.12</b>		<b>Removing Existing Concrete:</b>				
		(a) Plain Concrete	m <sup>3</sup>	-		Rate Only
		(b) Reinforced Concrete	m <sup>3</sup>	-		Rate Only
<b>22.13</b>		<b>Removing and re-laying of existing pipes</b>				
		(a) On class B bedding				
	LI	(i) 600 mm dia.	m	-		Rate Only
	LI	(ii) 750 mm dia.	m	-		Rate Only
<b>22.14</b>	LI	<b>Removing and stacking existing pipes (all sizes)</b>	m	-		Rate Only
<b>22.17</b>		Manholes, Catchpits, Precast Inlet and Outlet structure complete (Covers to be polymer and no steel)				
		a. Manholes	No			Rate Only
		b. Catchpits (2.4 precast Kerb Inlets)	No			Rate Only
		c. Precast Outlets structures	No	-		Rate Only
<b>22.18</b>		<b>Brickwork</b>				
	LI	(b) 230mm thick	m <sup>2</sup>	6		
<b>22.23</b>		<b>Service ducts</b>				
	LI	(a) 110mm dia. Internal PVC	m	-		Rate Only
<b>22.25</b>		<b>Overhaul on excavated material carted to</b>				
		spoil, backfill material, existing structures Demolished and removed to spoil and Removing and relaying, and removing Stacking existing prefabricated culverts For haul in excess of the free-haul Distance. (1km free-haul)	m <sup>3</sup> -km	60		
<b>2200</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELING, OPEN CHUTES AND CONCRETE LININGS FOR OPEN DRAINS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2300</b>		<b>CONCRETE KERBING, CONCRETE CHANNELING, OPEN CHUTES AND CONCRETE LININGS FOR OPEN DRAINS</b>				
<b>23.01</b>		<b>Concrete kerbing:</b>				
		(a) Cast in situ kerbing (Class 25/19 concrete):				
	LI	(i) Edge Beam 200mmx 300mm deep.	m	97		
		(b) Prefabricated Concrete Kerbing				
	LI	(ii) Precast Kerb Fig 8c (SABS 927)	Prov.Sum	2 542	R 762 600.00	R 762 600.00
		(c) Contractor's handling cost in respect of item (a) (i) and (b) (ii) above	%	R 762 600.00		
<b>23.02</b>		<b>Concrete kerbing-channeling combination</b>				
		(a) Prefabricated concrete kerb SABS 927 fig. 7 with in-situ apron 25/19 as follows:				
	LI	(i) Apron 300 wide sloping and 125mm thick	m	-		Rate Only
	LI	(ii) Apron 150 wide and 125mm thick	m	-		Rate Only
<b>23.03</b>		<b>Concrete chutes:</b>				
	LI	(a) Prefabricated concrete chutes as detailed	m	-		Rate Only
	LI	c) Armco galvanized corrugated casing, 300mm dia. x 1.2mm steel	No.	-		Rate Only
<b>23.05</b>		<b>Inlet, outlet, transition and similar structures</b>				
	LI	(a) Open chutes (Class 25/19 concrete): (See drawings)				
		(i) Chute inlets Type A				
	LI	1) On slope	No.	-		Rate Only
	LI	2) At low point	No.	-		Rate Only
	LI	(ii) Chute outlets Type C	No.	-		Rate Only
	LI	(iv) Chute outlets (Type D)	No.	-		Rate Only
	LI	(v) Chute outlets (Type E)	No.	-		Rate Only
<b>2300</b>		<b>TOTAL CARRIED FORWARD</b>				



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**
**SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELING, OPEN CHUTES AND CHUTS  
CONCRETE LININGS FOR OPEN DRAINS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>23.06</b>		<b>Inlet, outlet, transition and similar structures: (Including in-situ concrete chutes</b>				
	LI	(a) Cast in situ concrete lining for Chute				
		Inlets Type "F": (Class 25/19 concrete):	m <sup>3</sup>	-		Rate Only
		(b) Formwork (Class F1 surface finish) for Type "F": chutes & inlets:	m <sup>2</sup>	-		Rate Only
		(i) To side with form work on both internal And external faces (each face measured)				
	LI	(c) Class U2 surface finish to cast in situ Concrete:	m <sup>2</sup>	-		Rate Only
<b>23.07</b>		<b>Trimming of excavations for concrete-lined open drains:</b>				
	LI	(a) In soft material	m <sup>2</sup>	750		
		(b) In hard material	m <sup>2</sup>	35		
<b>23.08</b>		<b>Concrete lining for open drains:</b>				
		(a) Cast in situ concrete lining (Class 25/19 concrete):				
	LI	(i) Side drains - Type "D"	m <sup>3</sup>	-		Rate Only
	LI	(ii) Side drains - Type "E"	m <sup>3</sup>	-		Rate Only
	LI	(iii) Side drains - Type "F"	m <sup>3</sup>	445		
		(b) Class U2 surface finish to cast in situ concrete:				
	LI	(i) Side drains	m <sup>2</sup>	165		
<b>23.09</b>		<b>Formwork to cast in situ concrete lining for open drains (Class F2 surface finish):</b>				
	LI	(d) To side with formwork on both internal and external faces (each face measured)	m <sup>2</sup>	258		
	LI	(c) To ends of slabs and top	m <sup>2</sup>	258		
<b>23.10</b>	LI	<b>Sealed joints in concrete linings of open drains (2 layers of 3-ply malthoid) 300mm wide as supplied by ABE or similar as approve</b>	m	75		
<b>2300</b>	<b>TOTAL CARRIED FORWARD</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELING, OPEN CHUTES AND CHUTS CONCRETE LININGS FOR OPEN DRAINS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
23.11	LI	Concrete screed for backfill below Chutes (class 20/19)	m <sup>3</sup>	-		Rate Only
23.12		Steel reinforcement				
	LI	(c) Welded steel fabric	kg	4 632		
2300	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 3100: BORROW MATERIALS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>3100</b>		<b>BORROW MATERIALS</b>				
<b>31.01</b>		Excess overburden				
		(a) 0m up to 1,5m	m <sup>3</sup>	4 500		
		(b) Exceeding 1,5m up to 3,0m	m <sup>3</sup>	-		Rate only
<b>31.03</b>		Finishing -off borrow areas in:				
		(a) Hard material	ha	0.10		
		(b) Intermediate Material	ha	0.10		
		(c) Soft Material	ha	0.20		
<b>31/55.02</b>	LI	Supply and Erect new fencing (Stock Proof fence 1.8m high complete with standards at 3m spacing) corner and intermediate straining posts, new gates including safety signs on all sides of the fence and gates	m	400		
<b>3100</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 3300: MASS EARTHWORKS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>3300</b>		<b>MASS EARTHWORKS</b>				
<b>33.01</b>		<b>Cut and borrow to fill, including free haul up to 1,0 km.</b>				
		(a) Gravel material in compacted layer thickness of 200mm and less				
		(i) Compacted to 90% of modified AASHTO density	m <sup>3</sup>	-		Rate Only
		(ii) Compacted to 93% of modified AASHTO density	m <sup>3</sup>	-		Rate Only
		(c) Rockfill (From Commercial Sources)	m <sup>3</sup>	1 150		
<b>33.03</b>		<b>Extra over item 33.01 for excavating and breaking down material in:</b>				
		(a) Intermediate excavation	m <sup>3</sup>	-		Rate Only
		(b) Hard excavation	m <sup>3</sup>	-		Rate Only
<b>33.04</b>		<b>Cut to spoil, including free haul up to 1, 0 km.</b> <b>Material obtained from:</b>				
		(a) Soft excavation	m <sup>3</sup>	4 900		
		(b) Intermediate excavation	m <sup>3</sup>	1 800		
		(c) Hard excavation	m <sup>3</sup>	2 100		
		(e) Boulder excavation Class B	m <sup>3</sup>	-		Rate Only
<b>33.07</b>		<b>Removal of Unsuitable Material</b>				
		(g) In layer thickness of 200mm or less				
		(i) Stable Material	m <sup>3</sup>	650		
<b>B33.10</b>		<b>Roadbed preparation and the compaction of material</b>				
		(b) Compaction to 90% of modified AASHTO density	m <sup>3</sup>	2 700		
<b>33.12</b>		<b>In situ treatment of roadbed:</b>				
		(a) In situ treatment by Blasting	m <sup>3</sup>	1 200		
<b>3300</b>		<b>TOTAL CARRIED FORWARD</b>				

CONSTRUCTION OF GA-SAKO UPGRADE 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 3300: MASS EARTHWORKS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>TOTAL BROUGHT FORWARD</b>						
<b>33.13</b>		<b>Finishing-off cut and fill slopes, medians and interchange areas:</b>				
		(a) Cut slopes	m <sup>2</sup>	-		Rate Only
	LI	(b) Fill slopes	m <sup>2</sup>	-		Rate Only
<b>33.14</b>		<b>Extra over item 33.01 for excavating material from the pavements and fills of existing roads:</b>				
		(a) Non-cemented material	m <sup>3</sup>	-		Rate Only
		(b) Cemented material	m <sup>3</sup>	-		Rate Only
		<b>OVERHAUL</b>				
<b>33/16.02</b>		<b>Overhaul (extra over items 33.01 &amp; 33.04 on material hauled in excess of the free-haul distance of 1km (ordinary overhaul))</b>	m <sup>3</sup> -km	47 900		
<b>3300</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>3400</b>		<b>PAVEMENT LAYERS OF GRAVEL MATERIAL</b>				
<b>34.01</b>		<b>Pavement layers constructed from gravel taken from cut or borrow, incl. free-haul up to 1,0 km.</b>				
		(a) Gravel Selected layer compacted to: (i) 93% of modified AASHTO density (150mm compacted layer thickness)	m <sup>3</sup>	-		Rate Only
		(d) Gravel sub base compacted to: (i) 95% of modified AASHTO density (150mm compacted layer thickness)	m <sup>3</sup>	1 900		
		(f) Gravel base material) compacted to:  (ii) 98% of modified AASHTO density (150mm compacted layer thickness from commercial sources)	m <sup>3</sup>	-		Rate Only
		(g) Gravel shoulder compacted to: (ii) 95% of modified AASHTO density (150mm compacted layer thickness)	m <sup>3</sup>	910		
<b>34.02</b>		<b>Extra over item 34.01 for excavation of material in:</b>				
		(a) Intermediate excavation	m <sup>3</sup>	150		
		(b) Hard excavation	m <sup>3</sup>	110		
<b>34.04</b>		<b>In-situ reconstruction of existing layers as:</b>				
		(a) Gravel Selected layer compacted to 93% of modified AASHTO density				
		(i) Non cemented material (150mm compacted layer thickness)	m <sup>3</sup>	-		Rate Only
<b>34.10</b>		<b>(a) Vibratory rollers</b>	m <sup>2</sup>	-		Rate Only
		(d) Flat-wheeled rollers	m <sup>2</sup>	-		Rate Only
		(e) Pneumatic-tyred rollers	m <sup>2</sup>	-		Rate Only
<b>34.11</b>		<b>Watering the pavement excavation floor</b>	kl	-		Rate Only
<b>34/16.02</b>		<b>OVERHAUL</b>				
		<b>Overhaul (extra over items 34.01 on material hauled in excess of the free-haul distance of 1km (ordinary overhaul)</b>	m <sup>3</sup> -km	52 500		
<b>3400</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 3500: STABILISATION**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>3500</b>		<b>STABILIZATION</b>				
<b>35.01</b>		<b>Chemical stabilization extra over</b>				
		Unstabilized compacted layers:				
		(a) Base (thickness 150mm)	m <sup>3</sup>	-		Rate Only
		(b) Subbase: (thickness: 150mm)	m <sup>3</sup>	1 900		
<b>35.02</b>		<b>Chemical stabilization agent</b>				
		(a) Base (thickness 150mm)	t	-		Rate Only
		(b) Subbase: (thickness: 150mm)	t	125		
		(c) Ground granulated blast-furnace slag	t	-		Rate Only
35.04		Provision and application of water for curing	kl	300		
35.05		Curing by covering with subsequent layer	m <sup>2</sup>	-		Rate Only
<b>3500</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 3600: CRUSHED STONE BASE**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>3600</b>		<b>CRUSHED STONE BASE</b>				
<b>36.01</b>		<b>Crushed Stone Base</b>  (a) Constructed from type G2 material obtained from commercial sources (150mm thick) compacted to 98% of modified AASHTO density.	m <sup>3</sup>	2 300		
<b>3600</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 4100: PRIME COAT**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>4100</b>		<b>PRIME COAT</b>				
<b>41.01</b>		<b>Prime coat:</b>				
		(a) RTH 3/12P or RTL 3/12P tar prime (0.8 l/m <sup>2</sup> )	litre	-		Rate only
		(b) MC-30 cut-back bitumen (0.8 l/m <sup>2</sup> )	Prov.Sum	8 600	R 180 600.00	R 180 600.00
		(c) Contractor's handling cost in respect of item (b) above	%	R 180 600.00		
<b>41.02</b>	LI	<b>Agg egate for blinding</b>	m <sup>2</sup>	-		Rate only
<b>41.03</b>	LI	<b>Extra over item 41.01 for applying the prime coat in areas accessible only to hand held equipment</b>	litre	35		
<b>4100</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 4200: ASPHALT BASE AND SURFACING**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>4200</b>		<b>ASPHALT BASE AND SURFACING</b>				
<b>42.02</b>		<b>Asphalt Surfacing 60/70 penetration grade bitumen)</b>				
		a) Medium grade continuously graded asphalt (30mm)	Prov.Sum	10 800	R1 944 000.00	R1 944 000.00
		(a) Contractor's handling cost in respect of item (a) above	%	R1 944 000.00		
<b>42.04</b>		<b>Tack coat of 30% stable grade emulsion (0.6 l/m<sup>2</sup>)</b>	Prov.Sum	6 500	R 77 760.00	R 77 760.00
		(b) Contractor's handling cost in respect of variations item (a) above	%	R 77 760.00		
<b>42.05</b>		<b>Binder variations</b>	t	-		Rate Only
<b>42.07</b>		<b>Trial section 30mm</b>	m <sup>2</sup>	-		Rate Only
<b>42.08</b>		<b>Speed humps complete as per drawing</b>	No	5		
<b>4200</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 5100: PITCHING, STONEMWORK AND PROTECTION AGAINST EROSION**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>5100</b>		<b>PITCHING, STONEMWORK AND PROTECTION AGAINST EROSION</b>				
<b>51.01</b>		<b>Stone pitching:</b>				
	LI	(b) Grouted stone pitching	m <sup>2</sup>	140		
<b>51.02</b>		<b>Riprap</b>				
	LI	(a) Packed Riprap average nominal diameter of 200mm with SG of 2.1	m <sup>3</sup>	16		
<b>51.04</b>		<b>Concrete pitching and block paving:</b>				
	LI	(d) Prefabricated concrete paving blocks for sidewalk pavement - interlocking blocks 60mm thick, 25 Mpa	m <sup>2</sup>	-		Rate only
<b>5100</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 5200: GABIONS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>5200</b>		<b>GABIONS</b>				
<b>52.01</b>		<b>Foundation trench excavation and backfilling:</b>				
		(b) In all other classes of materials	m <sup>3</sup>	-		Rate Only
<b>B52.02</b>	LI	<b>Surface preparation for bedding the gabions</b>	m <sup>2</sup>	-		Rate Only
<b>52.03</b>		<b>Gabions:</b>				
		(a) Galvanized gabion boxes:				
	LI	(iii) 2,0m x 1,0m x 1,0m with 80mm x 100mm mesh and 7.3 diam mesh wire	m <sup>3</sup>	-		Rate Only
	LI	(b) Galvanized gabion mattresses, 0,3m deep with 80mm x 100mm mesh and diaphragms at 1,0 centres and 7.3mm diameter mesh wire	m <sup>3</sup>	-		Rate Only
<b>52.04</b>		<b>Filter fabric</b>				
	LI	(a) Bidim grade A4 or approved equivalent	m <sup>2</sup>	-		Rate Only
<b>5200</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 5400: GUARDRAILS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>5400</b>		<b>GUARDRAILS</b>				
<b>54.01</b>		<b>Guardrails on Timber Posts:</b>				
	LI	(a) Galvanized	m	-		Rate only
<b>54.04</b>		<b>End Treatments:</b>				
	LI	(a) End wings	No.	-		Rate only
	LI	(c) Bridge adaptors	No.	-		Rate only
	LI	(e) End treatments in accordance with the drawings where single guardrail sections are used	No.	-		Rate only
<b>54.05</b>		<b>Additional Guardrail Posts:</b>				
	LI	(a) Timber	No.	-		Rate only
<b>54.06</b>	LI	<b>Reflective Plates</b>	No.	-		Rate only
<b>54/56.06</b>	LI	Extra over item 54.01 for cement treated soil backfill using 1:12 cement: soil mixture.	m <sup>3</sup>	-		Rate Only
<b>5400</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 5600: ROAD SIGNS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>5600</b>		<b>ROAD SIGNS</b>				
<b>B56.01</b>		<b>Road sign boards with painted or Coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:</b>				
		(b) Prepainted galvanized steel plate (chromadek 1,6mm thick or approved equivalent)				
	LI	(i) Area not exceeding 2m <sup>2</sup>	m <sup>2</sup>	55		
	LI	(ii) Area exceeding 2m <sup>2</sup> but not 10 m <sup>2</sup>	m <sup>2</sup>	73		
<b>56.02</b>		<b>Extra over B56.01 for using:</b>				
		(a) Background of retro-reflective material:				
	LI	(iii) Class III	m <sup>2</sup>	73		
		(b) Lettering, symbols, numbers, arrows, emblems				
	LI	(ii) Diamond Grid	m <sup>2</sup>	42		
<b>56.03</b>		<b>Road sign supports (overhead road sign structures excluded) (Galvanised)</b>				
		(a) Steel tubing (wall thickness 2mm)				
	LI	(i) 75mm	t	1.5		
	LI	(ii) 100mm	t	-		Rate Only
	LI	(b) Timber 150mm	m	-		Rate Only
<b>56.05</b>	LI	<b>Excavation and backfilling for road sign supports (not applicable to kilometer posts)</b>	m <sup>3</sup>	17		
<b>56.06</b>	LI	<b>Extra over item 56.05 for cement-treated soil backfill</b>	m <sup>3</sup>	17		
<b>56.07</b>		<b>Extra over item 56.05 for rock excavation</b>	m <sup>3</sup>	6.1		
<b>56.10</b>		<b>Danger plates at culverts</b>				
	LI	(a) 200mm*800mm	No	10		
<b>56.11</b>		<b>Speed hump related road signs complete as per drawing</b>	No	5		
<b>5600</b>	<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS**  
**SECTION 5700: ROAD MARKINGS**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>5700</b>		<b>ROAD MARKINGS</b>				
<b>57.01</b>		<b>Road marking paint:</b> (g) Kerb markings - any colour	m <sup>2</sup>	-		Rate Only
<b>57.02</b>		<b>Retro-reflective (water based) road-marking paint (Water Based):</b>  (a) White lines (broken or unbroken):  (i) 150 mm wide  (b) Yellow lines (broken or unbroken):  (i) 150 mm wide  (d) White lettering and symbols	km  km  m <sup>2</sup>	1.7  -  217		Rate Only
	LI	(e) Yellow lettering and symbols	m <sup>2</sup>	-		Rate Only
	LI	(f) Transverse lines, painted islands and arrestor bed markings (any colour)	m <sup>2</sup>	217		
<b>57.04</b>		<b>Variations in rate of application:</b>  (a) White paint  (b) Yellow paint  (d) Retro-reflective beads	litre litre kg	- - -		Rate only Rate only Rate only
<b>B57.05</b>		<b>Roadstuds</b>  (a) Bi-directional–Lynx Aluminium or similar	No.	-		Rate Only
<b>B57.06</b>	LI	<b>Setting out and premarking the lines</b> (excluding traffic-island markings, lettering and symbols)	km	2.1		
<b>B57.07</b>		<b>Speed hump road markings complete as per drawing</b>	No	5		
<b>5700</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 5900: FINISHING THE ROAD AND ROAD RESERVE**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>5900</b>		<b>FINISHING THE ROAD AND ROAD RESERVE</b>				
<b>59.01</b>		<b>Finishing the road and road reserve:</b>				
		(b) Single carriageway road	km	1.7		
<b>5900</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				



CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**SCHEDULE B: ROADWORKS****SECTION 8100: TESTING MATERIALS AND WORKMANSHIP**

ITEMS	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>8100</b>		<b>TESTING MATERIALS AND WORKMANSHIP</b>				
<b>81.02</b>		<b>Other Special Tests Requested by the Engineer</b>				
		a) Cost of Testing	Prov. Sum	1	-	R 60 000.00
		b) Handling Cost and Profit in respect of Item 81.02 (a)	%	R 60 000.00		
<b>8100</b>		<b>TOTAL CARRIED FORWARD TO SUMMARY</b>				

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

## CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREET FROM GRAVEL TO SURFACING

### C2.3 SUMMARY OF BILL OF QUANTITIES

<b>SCHEDULE A: ROADWORKS</b>		
1200	General requirements and provisions	R
1300	Contractor's establishment on site and general obligations	R
1400	Housing, offices and laboratories for the engineer's site personnel	R
<b>TOTAL SCHEDULE A</b>		<b>R</b>
<b>SCHEDULE B: ROADWORKS</b>		
1500	Accommodation of traffic	R
1700	Clearing and grubbing	R
1800	Daywork and hire of constructional plant	R
2100	Drains	R
2200	Prefabricated Culverts	R
2300	Concrete Kerbing, concrete channeling, open concrete chute and concrete lining for open drains	R
3100	Borrow materials	R
3300	Mass earthworks	R
3400	Pavement layers of gravel material	R
3500	Stabilization	R
3600	Crushed Stone Base	R
4100	Prime Coat	R
4200	Asphalt Base and Surfacing	R
4500	Double seals	R
5100	Pitching stonework and protection against erosion	R
5200	Gabions	R
5400	Guardrails	R
5500	Fencing	R
5600	Road signs	R
5700	Road marking	R
5900	Finishing the road and reserve and treating old roads	R
8100	Testing Materials And Workmanship	R
<b>TOTAL SCHEDULE B</b>		<b>R</b>

CONTRACT NO: TECH/006/2022/23

CONSTRUCTION OF GA-SAKO UPGRADING 1.7KM OF INTERNAL STREETS FROM GRAVEL TO SURFACING.

**FOR**

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING**

## **C2.4 CALCULATION OF TOTAL COST**

TOTAL SCHEDULE A: GENERAL	R
TOTAL SCHEDULE B: ROADWORKS	R
	<hr/>
<b>TENDER (CONTRACT) SUM</b>	<b>R</b>
CONTINGENCIES (10%)	<b>R</b>
	<hr/>
<b>SUB - TOTAL</b>	<b>R</b>
ADD 15% VAT	R
	<hr/>
<b>TENDER (CONTRACT) PRICE CARRIED TO FORM OF OFFER OF ACCEPTANCE</b>	<b><u>R</u></b>

SIGNED ON BEHALF OF TENDERER: .....

DATE.....

# THE CONTRACT

PART C3..... SCOPE OF WORKS

PART C4..... SITE INFORMATION

## **PART C3: SCOPE OF WORK**

<u>C3.1</u>	<u>DESCRIPTION OF WORKS.....</u>	<u>112</u>
<u>C3.2</u>	<u>ENGINEERING.....</u>	<u>124</u>
<u>C3.3</u>	<u>PROCUREMENT.....</u>	<u>125</u>
<u>C3.4</u>	<u>CONSTRUCTION.....</u>	<u>135</u>
<u>C3.5</u>	<u>MANAGEMENT.....</u>	<u>246</u>

### **C3.1 DESCRIPTION OF WORKS**

#### **C3.1.1 Employer's Objective**

Molemole Local Municipality, in consultation with the community, identified the need for the **CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURACING**. It is anticipated that upon completion, this project will deliver the following benefits to the users:

- Better road riding quality and improved visibility;
- Better stormwater drainage facilities;
- Improved road safety;
- Sheltered turn and ease overall of turning movements;

#### **Labour-intensive works**

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of this Scope of Work.

Labour-intensive competencies of supervisory and management staff

Contractors shall engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/Supervisors at NQF "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/Manager at NQF level 5 "Manage labour-intensive Construction Processes" or equivalent QCTO qualifications.

#### **C3.1.2 Overview and Location of Works**

*The current scope of works entails Construction of Ga-Sako Upgrading of 1.7km Internal Streets from Gravel to Surfacing.*

#### **C3.1.3 Extent of Works**

The major activities within the project will include, among other, the following;

- Contractor's Site establishment, maintenance and removal;
- Clearing and grubbing, including removal of rubble on site;
- Installation of sub-surface drains (LI);
- Earthworks comprising of out to spoil and borrow to fill
- Construction of subgrade layer using insitu material
- Construction of pavement layerworks; (G2 Base and C4 Subbase)
- Asphalt surfacing(30mm).
- Construction of concrete kerbs and concrete open V-drains (LI);
- Construction of Concrete edge beams and concrete drifts (LI);
- Grouted stone pitching;
- Supply and erection of Road traffic signs;
- Provision of road markings;

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

- Finishing the Road and Road Reserve (LI).
- Maintenance of the Works during construction and also during defects liability period..

All labour-intensive works are marked as Labour-Intensive Construction (LIC) items in the Bill of Quantities and this progress is part of the Expanded Public Works Programme (EPWP).

**C3.1.4 Location of the Works**

The project is located in the Ga-sako Village in Molemole Municipality under the jurisdiction of Capricorn District of Limpopo Province. Within 90km North of Polokwane.

LOCATION	S-COORDINATES	E-COORDINATES
Ga-Sako Village	23° 25'14.6"S	29° 09' 45.7"E

**C3.1.6 General Information****C3.1.6.1 Drawing**

The reduced drawings contained in Annexure C5.2 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 engineer.

The contractor will be supplied with an unreduced 0,05 mm thick transparent polyester print of each of the drawings. These polyester prints are issued free of charge and the contractor shall make any additional prints he may require at his own cost.

Any information in the possession of the contractor, which the resident engineer requires to complete the as-built drawings, shall be supplied to the resident engineer 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 engineer. The engineer 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 engineer 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.

**C3.1.5 Labour Regulations**

**C3.1.5.1 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.

**C3.1.5.2 Applicable labour laws**

Sectorial determination 2: Civil engineering sector.

The Ministerial Determination for 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° R949 in Government Gazette 33665 of 22 October 2015, 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.



**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**

The Ministerial Determination for 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° R949 in Government Gazette 33665 of 22 October 2015, 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.

**C3.1.7.3 Introduction**

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.

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.

**C3.1.7.4 Terms of Work**

- (a) Workers on a SPWP are employed on a temporary basis.
- (b) A worker may NOT be employed for longer than 24 months in any five-year cycle on

a SPWP.

- (c) Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

#### **C3.1.7.5 Normal Hours of Work**

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.
- (d) 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.

- (e) 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.

#### **C3.1.7.6 Meal Breaks**

- (f) A worker may not work for more than five hours without taking a meal break of at least thirty minutes' duration.
- (g) An employer and worker may agree on longer meal breaks.
- (h) 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.
- (i) 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.

#### **C3.1.7.7 Special Conditions for Security Guards**

- (a) A security guard may work up to 55 hours per week and up to eleven hours per day.
- (b) A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

#### **C3.1.7.8 Daily Rest Period**

- (a) who works on a public holiday must be paid –
- (a) the worker's 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.

**C3.1.7.9 Weekly Rest Period**

- (a) 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").

**C3.1.7.10 Work on Sundays and Public Holidays**

- (b) A worker may only work on a Sunday or public holiday to perform emergency or security work.
- (c) Work on Sundays is paid at the ordinary rate of pay.
  - i. A task-rated worker daily task rate, if the worker works for less than four hours;
  - ii. double the worker's daily task rate, if the worker works for more than four hours.
- (d) A time-rated worker who works on a public holiday must be paid –
  - i. the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
  - ii. double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

**C3.1.7.11 Sick Leave**

- (a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- (b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
- (c) A worker may accumulate a maximum of twelve days' sick leave in a year.
- (d) Accumulated sick-leave may not be transferred from one contract to another contract.
- (e) An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- (f) An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- (g) An employer must pay a worker sick pay on the worker's usual payday.
- (h) Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –
  - i. absent from work for more than two consecutive days; or

- ii. absent from work on more than two occasions in any eight-week period.
- (i) A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.
- (j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

**C3.1.7.12 Maternity Leave**

- (a) A worker may take up to four consecutive months' unpaid maternity leave.
- (b) A worker is not entitled to any payment or employment-related benefits during maternity leave.
- (c) A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- (d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- (e) A worker may begin maternity leave –
- (f) four weeks before the expected date of birth; or
- (g) 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
  - (ii) 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
- (h) 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.
- (j) 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.

**C3.1.7.12 Family responsibility leave**

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.

#### **C3.1.7.13 Statement of Conditions**

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.
- (f) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- (g) An employer must supply each worker with a copy of these conditions of employment.

#### **C3.1.7.14 Keeping Records**

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.
- (e) The employer must keep this record for a period of at least three years after the completion of the SPWP.

#### **C3.1.7.15 Payment**

- (a) An employer must pay all wages at least monthly into a bank account.
- (b) A task-rated worker will only be paid for tasks that have been completed.
- (c) 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.
- (d) A time-rated worker will be paid at the end of each month.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- (e) Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- (f) Payment in cash or by cheque must take place –
  - (i) at the workplace or at a place agreed to by the worker;
  - (ii) during the worker's working hours or within fifteen minutes of the start or finish of work;
  - (iii) in a sealed envelope, which becomes the property of the worker.

**C3.1.7.16** 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.
- (f) 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
- (g) 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.

**C3.1.7.17 Deductions**

- (a) An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- (b) An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- (c) An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.
- (d) An employer may not require or allow a worker to –
  - i. repay any payment except an overpayment previously made by the employer by mistake;
  - ii. state that the worker received a greater amount of money than the employer actually paid to the worker; or
  - iii. pay the employer or any other person for having been employed.

**C3.1.7.18 Health and Safety**

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- (a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- (b) A worker must –
  - i. work in a way that does not endanger his/her health and safety or that of any other person;
  - ii. obey any health and safety instruction;
  - iii. obey all health and safety rules of the SPWP;
  - iv. use any personal protective equipment or clothing issued by the employer;
  - v. report any accident, near-miss incident or dangerous behavior by another person to their employer or manager.

**C3.1.7.19 Compensation for Injuries and Diseases**

- (a) 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.
- (b) A worker must report any work-related injury or occupational disease to their employer or manager.
- (c) The employer must report the accident or disease to the Compensation Commissioner.
- (d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

**C3.1.7.20 Termination**

- (a) The employer may terminate the employment of a worker for good cause after following a fair procedure.
- (b) A worker will not receive severance pay on termination.
- (c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
- (d) A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

- (e) A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

**C3.1.7.21 Certificate of Service**

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

**C3.1.7.22 Contractor's default in payment to Labourers and Employees**

- (a) Any dispute between the Contractor and labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.
- (b) The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.

**C3.1.7.23 Provision of Hand tools**

- (a) The Contractor shall provide his labour force with hand tools of adequate quality, sufficient in numbers and make the necessary provisions to maintain the tools in good and safe working conditions

**C3.1.7.23 Reporting**

The Contractor shall submit monthly returns/reports as specified below:

- (a) Signed Muster rolls/pay sheets of temporary workers and permanent staff detailing the number, category, gender, rate of pay and daily attendance.
- (b) Copies of identity documents of workers
- (c) Number of persons who have attended training including nature and duration of



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

training provided

- (d) Assets created, rehabilitated or maintained in accordance with indicators in the EPWP M&E framework
- (e) Plant utilization returns
- (f) Progress report detailing production output compared to the programme of works

**C3.2 ENGINEERING**

**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 engineer 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. E.g.

**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 engineer's design certificate.

**C3.2.4 Design procedures**

All designs and modifications thereto shall be communicated in writing and the contractor and engineer shall maintain master lists to record and track all transactions.

### **C3.3 PROCUREMENT**

#### **PREFERENTIAL PROCUREMENT POINT SYSTEM POLICY**

##### **C3.3.1 GENERAL CONDITIONS**

The abovementioned provisions of this policy document shall apply subject to the following terms and conditions:

###### **C3.3.1.1 Company Registration**

Whereas the Agency shall have the above responsibilities, the respective and prospective service providers shall be:

- (a) Formally registered entity, in compliance with the applicable legislation such as the Companies Act, the Close Corporations Act, other related industry regulatory bodies, and professional bodies, where required;
- (b) Registered with the South African Revenue Services for all categories of taxes applicable to it.

###### **C3.3.1.2 Tender Evaluation**

- (a) Only a tenderer who has completed and signed the declaration part of the tender documentation may be considered for preference points.
- (b) The Municipality may, before a tender is adjudicated or at any time, require a tenderer to substantiate claims it has made with regard to preference.
- (c) The Municipality shall, when calculating comparative prices, take into account any discounts, which have been offered unconditionally.
- (d) A discount, which has been offered conditionally must, despite not being taken into account for evaluation purposes, be implemented when payment is effected.
- (e) In the event that different prices are tendered for different periods of a contract, the price for each period must be regarded as a firm price if it conforms to the definition of a "firm price".
- (f) Points scored must be rounded off to the nearest 2 decimals.
- (g) In the event that two or more tenders have scored equal total points, the successful tender must be the one scoring the highest number of preference points for specified goals. Should two or more tenders be equal in all respects, the award shall be decided by the drawing of lots.

###### **C3.3.1.3 Principles**

- (a) Preference points stipulated in respect of a tender must include preference points for equity ownership by HDIs.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- (b) The equity ownership contemplated in sub-regulation (C3.3.1.3(a)) must be equated to the percentage of an enterprise or business owned by individuals or, in respect of a company, the percentage of a company's shares that are owned by individuals, who are actively involved in the management of the enterprise or business and exercise control over the enterprise, commensurate with their degree of ownership as the closing date of the tender.
- (c) In the event that the percentage of ownership contemplated in sub regulation (C3.3.1.3 (b)) changes after the closing date of the tender, the tenderer must notify The Agency and such tenderer will not be eligible for any preference points.
- (d) Preference points may not be claimed in respect of individuals who are not actively involved in the management of an enterprise or business and who do not exercise control over an enterprise or business commensurate with their degree of ownership.
- (e) Subject to sub-regulations C3.3.1.3 (a), (b), (c) and (d), all claims made for equity ownership by an HDI must be considered according to the following criteria:

- i. Equity within private companies must be based on the percentage of equity ownership;
- ii. Preference points may not be awarded to public companies and tertiary institutions;
- iii. The following formula must be applied to calculate the number of points for equity ownership by an HDI:

$$NEP = NOP \times \frac{EP}{100}$$

Where

NEP = Points awarded for equity ownership by an HDI

NOP = The maximum number of points awarded for equity ownership by an HDI

EP = The percentage of equity ownership by an HDI within the enterprise or business, determined in accordance with sub-regulations C3.3.1.3 (a), (b), (c) and (d).

- (f) Equity claims for a Trust may only be allowed in respect of those persons who are both trustees and beneficiaries and who are actively involved in the management of the Trust.
- (g) Documentation to substantiate the validity of the credentials of the trustees contemplated in sub-regulation C3.3.1.3 (f) must be submitted to the relevant The Agency.
- (h) A Consortium or Joint Venture may, based on the percentage of the contract value managed or executed by their HDI members, be entitled to equity ownership in respect of an HDI.
- (i) The number of points scored for a Consortium or Joint Venture must be added to the number of points scored for achieving specified goals.
- (j) The points contemplated in sub-regulation C3.3.1.3 (i) must be added to the points scored for price, in order to establish the total number of points scored.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- (k) Subject to regulations C3.3.1.3 (i), the contract must be awarded to the tender, which scores the highest points.
- (l) A person awarded a contract as a result of preference for contracting with, or providing equity ownership to, an HDI, may not subcontract more than 25 % of the value of the contract to a person who is not an HDI or does not qualify for such preference.

**C3.3.1.4 Declarations**

A tenderer must, in the stipulated manner, declare that-

- (a) The information provided is true and correct;
- (b) The signatory to the tender document is duly authorised; and
- (c) Documentary proof regarding any tendering issue will, when required, be submitted to the satisfaction of the relevant The Agency.

**C3.3.1.5 Penalties**

- (a) The Municipality shall, upon detecting that a preference in terms of the Act and these regulations has been obtained on a fraudulent basis, or any specified goals are not attained in the performance of the contract, act against the person awarded the contract.
- (b) The Municipality may, in addition to any other remedy it may have against the person contemplated in sub-regulations C3.3.1.5(a).
- (c) Recover all costs, losses or damages it has incurred or suffered as a result of that person's conduct;
- (d) 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;
- (e) Impose a financial penalty more severe than the theoretical financial preference associated with the claim which was made in the tender; and
- (f) Restrict the contractor, its shareholders and directors from obtaining business from the Agency for a period not exceeding 10 years.
- (g) The Municipality reserves the right to have access and/or require production of the original or certified proof of any such registration at a time agreed to by the parties or as may be prescribed by law.

**C3.3.1.6 Areas of Policy Coverage**

The above-mentioned provisions of this policy shall apply subject to, but not limited to, the following entities and/or activity:

- (a) Procurement of goods or services;
- (b) Appointment of consultants;

- (c) Appointment of contractors, subcontractor, consortia and joint venture contractors;

#### **C3.3.1.7 Criteria for Tender Evaluation**

The Agency shall use the following criteria to evaluate tenders: -

- (a) Compliance with tender conditions;
- (b) Preference point system 90/10 on tenders with a Rand value above R 50 000 000 (fifty million Rand) and preference point system 80/20 for tenders with a Rand value equal to, or above R 30 000 but up to a Rand value of R 50 000 000 (Fifty million Rand);
- (c) Status of the enterprise; and
- (d) Price and functionality.

#### **C3.3.1.8 Preference Point System: 80/20**

The following formula shall be used to calculate the points in respect of tenders/procurement with a Rand value equal to, or above R30 000 and up to a R 50 000 000 (fifty million Rand). The Municipality may, however, apply this formula for procurement with a value less than R30 000, if and when appropriate. The formula shall be used to determine points for price and functionality.

$$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where:  $P_s$  = Points scored for price and functionality for the tender under consideration.

$P_t$  = Rand value of tender under consideration.

$P_{\min}$  = Rand value of the lowest acceptable tender.

- (a) A maximum of 20 points may be awarded to a tenderer for being a Historically Disadvantaged Individual or a pro-rata thereof commensurate with the percentage of an HDI in a firm or a JV.
- (b) The points scored by a tenderer in respect of the HDI shareholding will be added to the points scored for price and functionality.
- (c) Only the tenderer with the highest number of points scored may be awarded.

#### **C3.3.1.9 Preference Point System: 90/10**

The following formula must be used to calculate the points in respect of tenders/procurement with a Rand value above R 50 000 000 (fifty million Rand). This formula should be used to determine points for price and functionality.

$$P_s = 90 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where:  $P_s$  = Point scored for price and functionality for the tender under consideration.

$P_t$  = Rand value of tender under consideration.

$P_{\min}$  = Rand value of the lowest acceptable tender.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- (a) A maximum of 10 points may be awarded to a tenderer for being an Historically Disadvantaged Individual or a prorata thereof commensurate with the percentage of an HDI in a firm or a JV.
- (b) The points scored by a tenderer in respect of the HDI shareholding will be added to the points scored for price and functionality.
- (c) Only the tenderer with the highest number of points scored may be awarded.

**C3.3.1.10 Award of Contract to Tender Not Scoring the Highest Number of Points**

- (a) Despite the fact that only the tenderer with the highest number of points scored may be awarded, a contract may, on reasonable and justifiable ground, be awarded to a tender that did not score the highest number of points.

**C3.3.2 APPOINTMENT OF CONTRACTORS**

**C3.3.2.1 Procedure for Invitation of Tenders**

Tenders will be invited publicly through the general media and other forms of communication to ensure that the target communities are reached. The intention is to ensure that the SMME's in rural areas that may not be in a position to access the general press is also reached.

**C3.3.2.2 The tender invitation shall include:**

- (a) Specifications and description of project or service to be procured.
- (b) Tendering information and documentation will be in English;
- (c) A non-refundable charge shall be payable to cover the cost of the tender documents and specifications;
- (d) In the event where normal tendering is not practical due to other constraints, at least three (3) selected service providers shall be invited to submit quotations.

**C3.3.2.3 Compulsory Requirements**

The following requirements shall be applicable to all tenders and non-adherence thereto shall result in an automatic disqualification of the tender submitted:

- (a) Attendance of site inspection for briefing;
- (b) Submission of valid original tax clearance certificate.
- (c) *Submission of names of all management and supervisory staff employed to supervise the labour-intensive portion of the work*
- (d) Authority to act and contractually bind the tenderer.

**C3.3.2.4 Closure and Opening of Tenders**

Tenders shall close on a date and time specified in tender document and shall be opened and read in public.

**C3.3.2.6 Preferential Point System**

All tenders shall be evaluated according to the price, functionality and preference in compliance with the Preferential Procurement Policy Framework Act No. 5 of 2000 and the Regulations, as amended. Preference points shall be awarded according to tenders whose firms or joint ventures comprise specific combinations of historically disadvantaged persons as owners, trustees, equity shareholders, subcontractors, joint ventures and or managers. Preference will be calculated in accordance with the preferential point system/s set-out hereunder.

**C3.3.2.7 The 80/20 Preference System**

The following formula shall be used to calculate the points in respect of tenders/procurement with a Rand value equal to, or above R 30 000 and up to a Rand value of R 50 000 000 (fifty million Rand).

The Municipality may, however, apply this formula for procurement with a value less than R30 000, if and when appropriate. This formula shall be used to determine points for price and functionality.

$$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where  $P_s$  = Points scored for price and functionality for the tender under consideration.

$P_t$  = Rand value of tender under consideration.

$P_{\min}$  = Rand value of the lowest acceptable tender.

- (a) a maximum of 20 points may be awarded to a tenderer for being a Historically Disadvantaged Individual or a pro-rata thereof commensurate with the percentage of an HDI in a firm or a JV.
- (b) the points scored by a tenderer in respect of an HDI shareholding will added to the points scored for price.
- (c) only the tenderer with the highest number of points scored may be awarded.

**C3.3.2.8 The 90/10 Preference System**

The following formula shall be used to calculate the points in respect of tenders/procurement with a Rand value above R 50 000 000 (fifty million Rand). This formula should be used to determine points for price and functionality.

$$P_s = 90 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where:  $P_s$  = Points scored for price and functionality for the tender under consideration.

$P_t$  = Rand value of tender under consideration.

$P_{\min}$  = Rand value of the lowest acceptable tender.



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

- (a) a maximum of 10 points may be awarded to a tenderer for being an Historically Disadvantaged Individual or a pro rata thereof commensurate with the percentage of an HDI in a firm or a JV.
- (b) the points scored by a tenderer in respect of the HDI shareholding will be added to the points scored for price and functionality.
- (c) only the tenderer with the highest number of points scored may be awarded.

**C3.3.2.9 Points in Respect of Status of Enterprise**

A maximum of 10 (ten) points and twenty (20) potential points in respect of 90/10 and 80/20 respectively, will be awarded in respect of the status of the enterprise, which may take into consideration factors such as:

-

Factor Appraised	90/10 points	80/20 points
(a) No franchise before 1983 and 1994 constitution	8 points	16 points
(b) Women Equity	1 point	2 points
(c) Disabled	1 point	2 points

The above points shall be allocated on a pro-rata basis to the total composition of owners who are actively involved in the management of the enterprise under consideration. Provided that a person is a South African citizen and has obtained his/her citizenship before the 27 April 1994.

**C3.3.2.10 Points in Respect of Price and Functionality**

Tenders shall be evaluated on the basis of price: 50% and functionality: 50%. The criteria and weight shall be calculated in terms of the formula as tabulated below:

**(a) Calculation of percentage for price**

The percentage scored for price should be calculated as follows:

The lowest acceptable bid/proposal will obtain the maximum percentage allocated for price. The other bids/proposals with higher prices will proportionately obtain lower percentages based on the following formula:

$$P_s = \frac{P_{\min}}{P_t} \times AP$$

Where:	P <sub>s</sub>	=	Percentage scored for price by bid/proposal under consideration
	P <sub>min</sub>	=	Lowest acceptable bid/proposal
	P <sub>t</sub>	=	Price of bid/proposal under consideration
	AP	=	Percentage allocated for price

**(b) Calculation of points for functionality**

The percentage scored for functionality should be calculated as follows:

The value scored for each criterion should be multiplied with the specified weighting for the relevant criterion to obtain the marks scored for the various criteria. These marks should be added to obtain the total score. The following formula should then be used to convert the total score to percentage functionality:

$$Ps = \frac{So}{Ms} \times AP$$

Where: Ps = Percentage scored for functionality by bid/proposal under consideration  
 So = total score of bid/proposal under consideration  
 Ms = maximum possible score  
 AP = percentage allocated for functionality

The criteria for functionality are:

i	Relevant experience of company/key staff:	<b>30</b>
i	Company Experience	<b>40</b>
ii	Plant and equipment:	<b>20</b>
iii	Financial status	<b>10</b>
	<b>TOTAL</b>	<b>45</b>

After calculation of the percentage for functionality, the prices of all bids that obtained the minimum score for functionality should be taken into consideration.

Bids/proposals that do not score a certain specified minimum percentage for functionality should be disqualified and not be considered further

### **(c) Calculation of Points for Functionality and Price**

The percentages obtained for functionality should be added to the percentage obtained for price to obtain a percentage out of 100, which in turn should be converted to points out of 80 or 90.

The points scored out of 80 or 90 should be calculated according to the following formula:

(i) The 80/20 preference point system

$$Ps = 80 \left( 1 - \frac{Hs - Rs}{Rs} \right)$$

(ii) The 90/10 preferential point system

$$Ps = 90 \left( 1 - \frac{Hs - Rs}{Rs} \right)$$

Where: Ps = Points scored for functionality and price of the bid/proposal under consideration  
 Hs = Highest percentage scored by any acceptable tenderer for functionality and price

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

Rs = Percentage scored for functionality and price by bid/proposal under consideration

Points scored for specified goals as contemplated by the PPPFA and its Regulations are then calculated separately and added to the points scored for price and functionality in order to obtain a final point. The contract should be awarded to the tenderer scoring the highest points.

- i. After the calculation, the tender that scores the highest points, when adding the scores on status of enterprises and price and functionality, shall be awarded the tender;
- ii. Points scored on tenders shall be rounded off to 2 decimal places;
- iii. Where equal points are scored, the one with the highest preference points shall be awarded;
- iv. Should two or more tenders be equal in all respects, the award shall be decided by the drawing of lots.

**C3.3.2.11 Authority to Award**

- (a) The Municipality's Executive Council shall, upon recommendation of the Finance and Procurement Committee, have the authority to award all tenders.

**C3.3.2.12 Cessions**

A service provider awarded a contract may not cede or subcontract a contract/project or any part thereof without written consent of the Agency and where such consent is granted, a signed agreement involving the cedent, cessionary and the Agency shall be entered into.

In any event, not more than 25% of the value of the contract shall be subcontracted. Both the cedent and the cessionary shall be jointly and severally liable for the quality of the material supplied and workmanship.

**C3.3.2.13 Performance Guarantees**

The Municipality shall strive to facilitate the participation of HDI's and SMME by waiving or reducing the maximum amounts of sureties as follows:

- (a) No surety for projects between R 0 to R 500 000.
- (b) 1% surety for projects between R 500 000 to R 1 million.
- (c) 2,5% surety for projects between R 1 million to R 2 million.
- (d) 10% surety for projects above R 2 million.

The period required to provide surety shall be 21 calendar days. However, depending on circumstances, a shorter period may be prescribed. In the event of failure to submit the surety within the stipulated period, the Municipality shall be entitled to cancel the contract and award the tender to a suitable contractor.

Sureties may only be accepted from a banking institution registered in terms of the Bank Act, 1996, an insurer registered in terms of the Insurance Act, 1943 or from governmental institutions established for such purposes.

**C3.3.2.14 Notification of Acceptance**

Successful service tenderer/s shall be notified before the tender validity period expires.

**C3.3.2.15 Contractual Agreement**

The relationship between the Municipality and contractor shall be managed under the following contractual documents:

- (a) The tender document submitted by the tenderer
- (b) The project drawings relevant for the tendered project
- (c) The General Conditions of Contract.
- (d) The Municipality Procurement Policy
- (e) Any other relevant legislation aimed at meeting other government policy initiatives.

**C3.3.2.17 Variations**

- (a) The Municipality shall have the right to reduce or increase the scope of work by no more than 30% of the tendered amount.
- (b) Tenders shall make an allowance for a variation in the tendered amount up to 30%.

## **C3.4 CONSTRUCTION**

### **C3.4.1 STANDARD SPECIFICATIONS**

The standard specifications on which this contract is based are the **COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998 edition**.

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.

SANS 10396: 2003:	Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures
SANS 1914-4 (2002):	Targeted Construction Procurement (local resources)
SANS 1921 – 1 (2004):	Construction and Management Requirements for Works Contracts
Part 1:	General Engineering and Construction Works and where accommodation of traffic is involved:
SANS 1921-2 (2004):	Construction and Management Requirements for Works Contracts; and
Part 2:	Accommodation of Traffic on Public Roads Occupied by the Contractor.
OTHER	Technical Guideline: Bitumen Stabilised Materials: A Guide for the Design and Construction of Bitumen Emulsion and Foam Bitumen Stabilised Materials. TG 2, 2nd Edition, May 2009 (Asphalt Academy)

### **C3.4.2 PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS**

#### **C3.4.2.1 Amendments to the Standard Specifications**

There are no amendments to the Standard Specifications as issued by the SABS.

#### **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.

### **C3.4.2.3 REQUIREMENTS OF EXPANDED PUBLIC WORKS PROGRAMME**

#### **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.

#### **Employment of Unskilled and Semi-Skilled Workers in Labour Intensive Works**

##### **Requirements for the sourcing and engagement of labour.**

- C.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.
- C.1.2 The rate of pay set for the SPWP is R ..... per task or per day.
- C.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.
- C.1.4 The contractor must revise the time taken to complete a task whenever it is established that

the time taken to complete a weekly task is not within the requirements of 1.1.3.

- C.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
- C.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:
- a) 55 % women;
  - b) 55% youth who are between the ages of 18 and 35; and
  - c) 2% on persons with disabilities.

#### **Specific provisions pertaining to SANS 1914-5**

C.2.1. Definitions

**Targeted labour:** Unemployed persons who are employed as local labour on the project.

C.2.2. Contract participation goals

C.2.3. 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.

C.2.4. 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.

C.2.5 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.

C.2.6. Variations to SANS 1914-5

C.2.7. 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.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- C.2.8. 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**

- C.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.
- C.3.2. 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.

- C.3.3. 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](mailto:cinderella.makunike@dpw.gov.za) Tel: 083 677 4026
- C.3.4. 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.
- C.3.5. The contractors shall do nothing to dissuade targeted labour from participating in the above-mentioned training programmes.
- C.3.6. 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



## **C3.2 PROJECT SPECIFICATIONS**

### **PART A: GENERAL**

PS-1	Project Description
PS-2	Description of the Site and Access
PS-3	Details of the Works
PS-4	Construction Management Requirements
PS-5	Management of the Works

### **PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS**

B1	Project Specifications Relating to the Standard Specifications and Additional Specifications
----	--

## **PART A: GENERAL**

### **Details of the Works**

The approximate length of roads to be constructed is 2.1km (0.6km for this phase), of single carriageway street. The street is single carriageway road within the designated road reserves of 14.0m and 15m wide within the village. The new street will have a surfaced width of 6.0m with kerbs, concrete edge beams and lined stormwater channel.

The pavement design includes two layerworks, 150mm G2 Base layer, 150mm C4 Subbase layer, and 150mm subgrade and will be surfaced with 30mm continuously graded asphalt

The upgraded street will be complete with new permanent road markings and traffic signs and other related road furniture.

Below is a brief description of the works in which the following are discussed:

- ◇ The street is an internal access collector class 5 and carry traffic up to dwelling units.
- ◇ The Design Speed proposed on this street is 30km/h and its based on horizontal and vertical alignments, sight distance and lane width.
- ◇ The Design Standards adopted are as outlined in the Detail Design Report for a Class 5 Roads.
- ◇ Horizontal alignment has been planned for effective integration. The chosen alignment is as directional as possible and consistent with topography, Developed properties have been avoided and protected.
- ◇ Vertical alignment is made of smooth gradeline. Sharp crest and sag curves which are aesthetically unpleasant have been avoided.
- ◇ There is a section that has a gradeline of less than 0.5%.

### **Design Speed**

In terms of the road class, the minimum design speed is 30km/hr.

### **Road reserve and typical cross section of the streets**

The cross section in the design manual for a Class IIB road is two 3.0m lanes, plus 1.0m gravel shoulders within a road reserve of around 9.0m.

Typical roadside elements

<b>Design (km/hr)</b>	<b>Speed</b>	<b>Element</b>	<b>Width (m)</b>
30		Road formation	<b>6.0</b>
		Single surfaced lane width 2% cross-fall	<b>3.0</b>
		Gravel shoulder lane width	<b>0.3</b>
		Stormwater channel (concrete lined)	<b>1.0</b>

The major intersection cross section in the design manual for a Class IIB road is four (4) x 3.7m lanes, plus 0.6m surfaced shoulders and 2.0m gravel shoulders within a road reserve of 32m.

### **Temporary Works**

The Contractor shall, as relevant,

- a) provide temporary drainage works, temporary pumps and other equipment as might be necessary for the protection, draining and dewatering of the works; and
- b) Construct and maintain haulage, temporary access and construction roads, subject to the approval of the Employer, and permit the Employer, other Contractors, statutory bodies or any other person who might require legitimate access to or through the site for the purpose of executing legitimate business, free and unhindered usage of such roads.
- c) Temporary water connections, Contractor's offices, storage sheds, latrines, barricading of Works shall be located in an approved position and subject to the approval of all authorities concerned.
- d) Safety and Security of the Contractors' temporary works shall be at the Contractors' discretion.
- e) The camp shall be adequately guarded during or outside working hours.

### **PS-3.4 Accommodation of traffic**

The Contractor shall organize the work to cause the least possible inconvenience to the public, particularly the residents. In this respect the Contractor's attention is drawn to Clause 8.1.2 of GCC 2015.

All powered vehicles used on the Contract shall be fitted with warning signboards mounted across the back and front of the vehicle. These boards shall be the same width as the vehicle, 400 mm high, display the word "CONSTRUCTION VEHICLE" in bold black lettering on a yellow background and be subject to the approval of the Employer's Agent.

In addition, all vehicles and items of mobile plant operating on site shall be supplied with electrically operated amber rotating beacons of robust construction. The amber lens shall have a height of at

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

least 200 mm and an output of at least 50 W. The beacons shall be placed to be clearly visible from all directions for approximately 300 metres.

No additional payments shall be made for the furnishing of these boards and rotating beacons.

The Contractor shall provide, at his expense, reflective waistcoats, overalls, protective goggles, gloves, hard hats, waterproof clothing etc., which may be necessary for the execution of the contract.

All normal work will be limited to the periods specified in the Conditions of Contract.

Where temporary road signs are required, this will be provided by the Contractor and the Contractor shall at all times ensure proper maintenance thereof.

Failure to maintain road signs, warning signs or rotating lights, etc., in a good condition shall constitute ample reason for the Employer's Agent to bring the works to a stop until the defective items have been repaired to the satisfaction of the Employer's Agent.

The Contractor may not commence constructional activities before adequate provision has been made to accommodate the traffic as agreed with the Client and/or instructed by the Employer's Agent.

Any cost associated with the accommodation of traffic must be included in the relevant payment items.

**PS-4 Construction Management Requirements**

**4.1 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.

**4.1.7 Drawings (Read with SANS 1921 – 1: 2004 clauses 4.1.7; 4.1.11 & 4.1.12)**

The requirements for drawings, information and calculations for which the Contractor is responsible are: None.

The reduced drawings which form part of the tender documents shall be used for tendering purposes only.

The contractor shall be supplied with three complete paper copies of the construction drawings free of charge. The Contractor shall at his own expense produce there from all further paper prints required for the construction of the work.

At the completion of the Contract, the Contractor shall return to the Engineer all drawings, provided or made, during the contract period.

Any information which the Contractor has control over and which is required by the Resident Engineer to complete the as-built drawings shall be made available to the Resident Engineer before the completion certificate is issued.

Only written dimensions may be used. Dimensions are not to be scaled from drawings unless ordered by the Engineer. The Engineer will supply all figures / dimensions which are not shown on the drawings. The levels or dimensions given on the drawings are subject to confirmation on site. The Contractor shall submit all levels and dimensions to the Engineer for confirmation before he commences with any structural construction work. The Contractor shall also check all clearances which are given on the drawings and inform the Engineer of any conflicting dimensions.

Any destination names on road signs which may be indicated on the drawings are subject to confirmation by the Engineer before these signs are manufactured.

#### **4.2 Responsibilities for design and construction**

##### **Consulting Engineer**

The Consulting engineer responsible for the design in accordance with the specification is: Mr Thomson Nebotalo.

#### **4.3 Planning and Programme (Read with SANS1921-1:2004 clause 4.3)**

##### **Preliminary programme**

*The Contractor shall include with his tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.*

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

Tenderers may submit tenders for an alternative Time for Completion in addition to a tender based on the specified Time for Completion. Each such alternative tender shall include a preliminary programme similar to the programme above for the execution of the works and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

The following constraints shall be taken into account in preparing the preliminary construction programme which must be submitted with the Tender. These same constraints shall apply to the final construction programme.

1. The Contract time is **10 months**. Plant and personnel requirements to complete the project within the allocated duration must be incorporated in the Tender.
2. A high standard of traffic accommodation
3. The relocation of services
4. Ancillary works by Emerging Contractors

**Programme in terms of Clause 5.6 of the General Conditions of Contract**

It is essential that the construction programme, which shall conform in all respects to Clause 5.6 of the General Conditions of Contract, be furnished within the time stated in the Contract Data. The preliminary programme to be submitted with the tender shall be used as basis for this programme. The Contractor's attention is also drawn to clause 5.7.1 of the General Conditions of Contract 2015.

**4.4 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.

**4.6 Management and disposal of water (Read with SANS 1921 - 1 : 2004 clause 4.6)**

*The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that all completed 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.*

**4.10 Earthworks (Read with SANS 1921 - 1 : 2004 clause 4.10)**

**Borrow pits and spoil areas**

The borrow pits to be used for this contract shall be pointed out at the Site Inspection. The Contractor shall be permitted to use only those borrow pits approved by the Engineer.

The spoil sites shall be determined on site in conjunction with the Engineer, the PLC, and the local communities. The Contractor shall be permitted to use only those spoil areas approved by the Engineer.

Should the Contractor wish to use any other tip area for the disposal of soil, rubble, vegetation, etc, its use shall be subject to the approval of the Engineer and the landowner.

**4.11 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 by a laboratory acceptable to and approved by the Engineer.

*The Contractor may establish his own laboratory on site or he may employ the services of an independent commercial laboratory. Whatever method is used, the Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.*

**Acceptance control**

*The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be covered by a provisional sum provided in the schedule of quantities, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.*

#### **4.14 Site Establishment**

**(Read with SANS 1921 - 1 : 2004 clause 4.14)**

##### ***Contractor's camp site and depot***

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and labourers. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor.

The chosen site shall be subject to the approval of the Engineer, the local Tribal Authorities and the Project Liaison Committee (PLC).

Possible locations for a campsite shall be pointed out at the Site inspection. The Contractor shall conform to all local authority, environmental and industrial regulations.

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**

No employees except for security guards will be allowed to sleep or be accommodated on the site in urban areas.

*No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.*

*No informal housing or squatting will be allowed.*

*The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities have to be provided.*



**Security**

*The Contractor shall be responsible for the security of his personnel and equipment on and around the site of the works and for the security of his camp. No claims in this regard will be considered.*

**Power supply and other services**

*The Contractor must 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.*

**4.15 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.*

**4.17 Existing Services (Read with SANS 1921 - 1 : 2004 clause 4.17)**

*The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.*

*The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.*

Services belonging to the following service owners are indicated on the drawings:

<u>Service owner</u>	<u>Type of service</u>
Eskom/municipality	Electricity lines
Telkom	Telephone lines

A provisional amount is included in the bill of quantities for the protection of services.

Prior to commencing construction activities in a particular area, the Contractor shall also diligently enquire of local landowners as to whether there are any other known services which

have not been shown on the drawings, but which may be affected by the construction activities in that area, and any such services shall be brought to the attention of the Engineer immediately. The Contractor shall take note of the requirements of clause 1202 of the standard specifications with regard to services.

**4.18 Health and Safety**

***(Read with SANS 1921 - 1: 2004 clause 4.18)***

**4.18.1 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 No 181 of 1993, and the OHSA 1993 Construction Regulations 2014 issued on 07 February 2014 by the Department of Labour, including the COVID-19 Occupational Health And Safety Measures In Workplaces COVID-19 (C19 OHS), 2020, issued on 24 April 2020.

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 Part V of the Returnable Schedules.

**Health and Safety Specifications and Plans**

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification will be included in the tender documents as part of the Project Specifications.

(b) Tenderer's Health and Safety Plan

The Tenderer shall submit with his tender his own documented Health and Safety Plan he proposes to implement for the execution of the work under the contract. His Health and Safety Plan must 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;

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- (iv) 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*);
- (v) 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;
- (vi) 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
- (vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

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 and COVID19 pandemic**

*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.*

*A Provisional Sum has been provided in the bills of quantities for management and compliance with the requirements of COVID-19 pandemic response.*

**4.18.2 Requirements for Accommodation of Traffic (Read with SANS 1921 - 2 : 2004 )**

**General**

The Contractor will be responsible for the safe and easy passage of public traffic past and on sections of roads of which he has occupation or where work has to be done near traffic.

The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

Accommodation of traffic, where applicable shall comply with SANS 1921-2: 2004: Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor shall obtain this specification from Standards South Africa if accommodation of traffic will be involved on any part of the construction works.

**Basic Requirements**

The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

The Contractor shall ensure that all road signs, barricades, delineators, flagmen and speed controls are effective, and that courtesy is extended to the public at all times.

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc, have been repaired to his satisfaction.

The Contractor may not commence constructional activities affecting existing roads 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.

The Contractor shall construct and maintain all temporary drainage works necessary for temporary deviations.

The Contractor shall provide and grant access to persons whose properties fall within or adjoin the area in which he is working.

**Payment**

The Contractor's tendered rates for the relevant items in the Bill of Quantities shall include full compensation for all possible additional costs which may arise from this, and no claims for extra payment due to inconvenience as a result of the *modus operandi* will be considered.

**4.19 Management of the environment** *(Read with SANS 1921 - 1 : 2004 clause 4.19)*

Respect for the environment is an important aspect of this contract and the Contractor shall pay special attention to the following:

(a) Natural Vegetation

The Contractor shall confine his operation to the limits of the road reserve for the purpose of constructing the works and where applicable detours, shall be sited in consultation with the Engineer and the local communities.

Only those trees and shrubs directly affected by the works and such others as the Engineer may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

(b) Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires which may have been caused by him or his employees.

(c) Environmental Management Plan

*In addition to the above all requirements according to the Environmental Management Plan as detailed in C3.3, Particular Specifications, will be adhered to.*

## **PS 5 MANAGEMENT OF THE WORKS**

### **5.1 Applicable SANS 1921 standards**

The following parts of SANS 1921 Construction works standards and associated specification data are applicable to the works:

- 1) SANS 1921-1: General engineering and construction works
- 2) SANS 1921-2: Accommodation of traffic
- 3) SANS 1921-6: HIV/Aids awareness

The abovementioned South African National Standards make several references to the Specification Data for data, provisions and variations that make these standards applicable to this contract. The Specification Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and these standards.

Each item of Specification Data given below is cross-referenced to the clause in the standard to which it mainly applies.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

<b>SANS 1921-1, Construction and management requirements for works contracts – Part 1: General engineering and construction works</b>	
<b>Clause</b>	<b>Specification data</b>
<b>Essential data</b>	
4.1.7	There are no requirements for drawings, information and calculations for which the contractor is responsible
4.2.1	The responsibility strategy assigned to the contractor for the works is <b>A</b> .
4.2.2	The structural engineer is Nevhutalu Engineering Consultants.
4.3.1	<p>The planning, programme and method statements are to comply with the following:</p> <ol style="list-style-type: none"> <li>The Contract time is <b>5 months</b>.</li> <li>Plant and personnel requirements to complete the project in 5 months shall be incorporated.</li> <li>A high standard of traffic accommodation.</li> <li>The relocation of services (if required).</li> <li>Ancillary works by Emerging Contractors.</li> </ol> <p>State requirements for format of programme, level of detail, critical path activities and their dependencies, frequency of updating, etc., if not provided in the contract data. Provide particulars of phased completion, programme constraints, milestone dates for completion, etc., as necessary.</p> <p>State requirements for sequencing, as required.</p> <p>State any requirements for software for programmes.</p>
4.3.3	The notice period for inspection is 2 Days
4.7.3	The trees and shrubs which are not to be disturbed are attached in the Environmental Report which is available upon request.
4.12.2	<p>The samples of materials, workmanship and finishes that the contractor is to provide and deliver to the employer are:</p> <p>None</p>
4.14.3	<p>The office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are:</p> <ol style="list-style-type: none"> <li><b>Site office</b> which shall be used for site meetings and for the contractor's use. Such an office shall comprise a minimum of 48m<sup>2</sup> in area and 3 m high, be ventilated, have good lamination, must be reasonably sound proof, and have a hard floor construction. It shall be furnished with a desk on which drawings can be rolled open and on which there is sufficient writing space and sufficient temporary chairs or benches to accommodate all persons present at site meetings.</li> <li>Engineer's supervisory staff shall be provided with rented accommodation.</li> <li>Engineer's supervisory staff may be provided with cellular phones.</li> <li>The office of the engineer may be equipped with 1 laptop computer and colour laser printer.</li> <li>The office of the engineer may be equipped with a copier, fax and e-mail facilities to facilitate communication.</li> <li>The office of the engineer shall be equipped with HVAC facilities necessary for the climatic condition.</li> <li>The office of the engineer shall be equipped with two office desks and chairs as well as filing units for files and drawings.</li> <li>A board room will be provided and equipped to accommodate the employer, his agent and the contractor in meetings.</li> </ol>
4.14.5	The Contractor is required to provide latrine and ablution facilities.
4.14.6	<p>The requirements for the provision and erection of separate sign boards for consultants and subcontractors are:</p> <ol style="list-style-type: none"> <li>The boards must comply with the official standard type signboard of the Employer and be at least 2750 x 1800 mm high.</li> <li>The boards must be constructed with a firm flat exposed face using suitable material of firm construction, painted and lettered according to the standard drawings available from the Employer on request and mounted on sturdy pipe-standards at a height of 1800 mm above natural ground level.</li> </ol>
4.17.1	<p>The requirements for the termination, diversion or maintenance of existing services are:</p> <p>The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.</p> <p>The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.</p> <p>Prior to commencing construction activities in a particular area, the Contractor shall also diligently enquire of local landowners as to whether there are any other known services which have not been shown on the drawings but which may be affected by the construction activities in that area, and any such services shall be brought to the attention of the Engineer immediately.</p> <p>The Contractor shall take note of the requirements of clause 1202 of the standard specifications with regard to services.</p> <p>The Contractor shall fulfill all wayleaves requirements/permits prior to and during construction.</p>

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

4.17.3	Services which are known to exist on the site are: 1.... Electricity poles 2.... Fences 3.... Water pipes 4.... Culverts/bridge														
4.17.4	The requirements for detection apparatus are:  Where applicable, the Contractor shall use appropriate detection equipment to locate underground services. The Engineer shall be informed immediately of such activities.														
<b>Variations</b> None															
<b>Additional clauses</b>															
<b>1 Site meetings and procedures</b>  The Employer's Representative and the Contractor shall hold meetings relating to the progress of the works at regular intervals and at other such times as may be necessary. The Contractor shall attend all site meetings and shall ensure that all persons under his jurisdiction are notified timeously of all site meetings should the Employer's Representative require their attendance at such meetings.  The Contractor shall keep on site a set of minutes of all site meetings, daily records of resources (people and equipment employed), a site instruction book, a complete set of contract working drawings and a copy of the procurement document and make these available at all reasonable times to all persons concerned with the contract.															
<b>2 Water and electricity</b>  The Employer does not warrant that any water supply or electricity supply that may exist is adequate for the proper execution of the works. The responsibility strategies in terms of the tabulation below that will apply to the contract is:															
<table border="1"> <thead> <tr> <th>Service</th><th>Contractor responsibility</th></tr> </thead> <tbody> <tr> <td><b>Water</b></td><td>The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections and purchase water from the local authority for the works at his own cost.</td></tr> <tr> <td><b>Electricity</b></td><td>The Contractor is to provide, and remove and make good upon completion, all the necessary temporary electrical connections and installations and purchase electricity from the local authority / ESKOM for the works at his own cost.</td></tr> <tr> <td><b>Telecommunication</b></td><td>The Contractor is to provide, and remove and make good upon completion, all the necessary temporary telecommunication connections and installations and purchase bandwidth/units from the supplier for the works at his own cost.</td></tr> <tr> <td><b>Sanitation</b></td><td>The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections for the works at his own cost. The contractor shall ensure the provision of this service at the site camp and at accommodation of contractor's employees.</td></tr> <tr> <td><b>Waste disposal</b></td><td>The Contractor is to provide, and remove and make good upon completion, all the necessary temporary waste disposal means for the works at his own cost.</td></tr> <tr> <td><b>Security services</b></td><td>The Contractor is to provide, and remove and make good upon completion, all the necessary temporary security arrangements and purchase such goods and services for the works at his own cost.</td></tr> </tbody> </table>		Service	Contractor responsibility	<b>Water</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections and purchase water from the local authority for the works at his own cost.	<b>Electricity</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary electrical connections and installations and purchase electricity from the local authority / ESKOM for the works at his own cost.	<b>Telecommunication</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary telecommunication connections and installations and purchase bandwidth/units from the supplier for the works at his own cost.	<b>Sanitation</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections for the works at his own cost. The contractor shall ensure the provision of this service at the site camp and at accommodation of contractor's employees.	<b>Waste disposal</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary waste disposal means for the works at his own cost.	<b>Security services</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary security arrangements and purchase such goods and services for the works at his own cost.
Service	Contractor responsibility														
<b>Water</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections and purchase water from the local authority for the works at his own cost.														
<b>Electricity</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary electrical connections and installations and purchase electricity from the local authority / ESKOM for the works at his own cost.														
<b>Telecommunication</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary telecommunication connections and installations and purchase bandwidth/units from the supplier for the works at his own cost.														
<b>Sanitation</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections for the works at his own cost. The contractor shall ensure the provision of this service at the site camp and at accommodation of contractor's employees.														
<b>Waste disposal</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary waste disposal means for the works at his own cost.														
<b>Security services</b>	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary security arrangements and purchase such goods and services for the works at his own cost.														

**SANS 1921-5, Construction and management requirements for works contracts – Part 5: Earthworks activities which are to be performed by hand.**

Clause	Specification Data
<b>Essential Data:</b>	
5.1	The depth of trenches which are to be excavated by hand is 1,5 metres.
<b>Additional clauses:</b>	
1	<b>Stone pitching and rubble concrete masonry</b> All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, shall 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.
2	<b>Manufactured Elements</b> 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 hand hold on them.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

<b>SANS 1921-6, Construction and management requirements for works contracts – Part 6: HIV/AIDS awareness.</b>	
4.2.1(a)	A qualified service provider is a service provider that is one that is accredited or provisionally accredited training service provider in the HIV/AIDS field. A list of accredited service providers can be obtained from the Construction SETA (CETA) (Tel: 011-265 5900), Health and Welfare SETA (HWSETA) (011-622 6852) or on the Health and Welfare SETA website: <a href="http://www.hwseta.org.za">www.hwseta.org.za</a> .
4.2.1(a)	The HIV/AIDS awareness programme is to be repeated at three month intervals throughout the duration of the contract. (Two times in total, including the initial one at the start of the contract.)
<b>Additional clauses</b>	
	The duration of each workshop is not to be less than 2 ½ hours.

**5.2 Particular / generic specifications**

The management of the site shall be in accordance with the provisions of the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition), obtainable from the South African Institution of Civil Engineering.

**5.3 Recording of weather**

The Contractor shall erect an effective rainfall gauge on the site and record the daily rainfall figures in a book. Such book shall be handed to the employer's representative for his signature no later than 12 days after rain that is considered to justify an extension of time occurs.

**5.4 Unauthorised persons**

The Contractor shall keep unauthorized persons from the works at all times. Under no circumstances may any person except guards be allowed to sleep on the building site.

**5.5 Management meetings**

Project management meetings will be held once a month. This meeting will be attended by the representatives of the Employer, the representatives of the contractor as well as the representatives of the consultant.

All representatives at the meeting(s) must be delegated to take binding decisions, although it may be sometimes necessary to refer some decisions to higher authority.

Any claim or intention to claim must be brought to the attention of the meeting / Engineer / consultant in writing and within 28 days of the cause of the delay or where contractually required any specific shorter period. Not complying with this instruction / procedure will be regarded as relinquishment of the claim.

All important matters must be brought to the attention of the meeting timorously and supported by a written notification.

**5.6 Forms for contract administration**

Forms for contract administration will be completed by the consultant's staff on site.



### **5.7 Electronic payments**

The contractor is to fulfil the electronic payment requirements of the Client in order to be paid electronically. The Contractor is also advised to pay all his staff electronically in order to avoid handling large quantities of money on site.

### **5.8 Daily records**

The contractor is required to keep a site diary in which to record daily occurrences on site.

### **5.9 Payment certificates**

The Contractor shall be entitled to receive a monthly progress payment, which shall be based on a progress on site and payment certificate issued by the Consultant.

The Contractor shall on monthly basis submit a monthly statement of all moneys due to him. On such a statement, he shall also include the all materials on site. The statement submitted by the contractor shall indicate measured quantities. The consultant shall submit to the Department of Public Works, Roads and Transport a signed certificate which indicates the amount due to the contractor.

## **PART B: AMENDMENTS TO THE STANDARD AND PARTICULAR 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 in the standard specifications.

## **B1. PROJECT SPECIFICATIONS RELATING TO THE STANDARD SPECIFICATIONS AND OTHER ADDITIONAL SPECIFICATIONS**

In certain clauses in the standard, standardised and particular specifications, allowance is made for 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 alternative or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains the necessary additional 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 relevant clause or payment item in the standard specification.

The number of a new clause or payment item, which does not form part of a clause or a payment item in the standard specifications and which is included here, is also prefixed by B, but followed by a new number which follows on the last clause or item number used in the relevant section of the standard specifications.

Add the following additional clauses:

### **B1156: PROCESS CONTROL**

Process control means all testing required to be carried out by the contractor at his cost in order to ensure that the completed permanent works comply with the specifications and drawings. All such testing will be subject to inspection and approval by the engineer.

### **B1157: ACCEPTANCE CONTROL**

Acceptance control means whatever testing the engineer carries out over and above the process control testing already carried out by the contractor in order to decide on the acceptability of any work submitted by the contractor. Such testing will be carried out at the cost of the employer in either the engineer's laboratory or one approved by him.

## **SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS**

### **B1202 SERVICES**

Delete and replace the words:

"Clause 12 of the general conditions of contract" in the first sentence of the eleventh paragraph with Clause 5.6 of the General Conditions of Contract for construction works 2015 Edition.

### **B1204 PROGRAMME OF WORK**

Insert the following before the first paragraph:

"A network-based programme in accordance with the precedence method shall be provided showing the various activities 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 apply a programme based on his own assumptions for the purpose of evaluating claims for extension of time for completion of the works, or for additional compensation."

### **B1205 WORKMANSHIP AND QUALITY CONTROL**

Add the following:

Quality control (Scheme 1) as detailed in Section 8200 will be used for determining the acceptance levels with respect to the properties of the materials and workmanship executed by the contractor.

Delete the second, third, fourth and fifth paragraphs and replace with the following:

"The contractor shall submit the quality assurance plan and system he proposes using to the engineer for his approval within two weeks of site handover. Once accepted it shall not be deviated from unless written notification of proposed changes has similarly been submitted and approved. The system shall record lines and levels of responsibility and indicate the method by which testing procedures will be conducted."

Add the following to the end of this clause:

"The engineer shall for the purpose of acceptance control on products and workmanship, assess test results and measurements in accordance with the provisions of section 8200 of the standard specifications. Where small quantities of work are involved, a lot shall mean a full day's production for a specific item of work subject to acceptance control testing.

## **B1206 THE SETTING-OUT OF WORK AND PROTECTION OF BEACONS**

Delete the entire contents of the first paragraph and the following words in the first sentence of the sixth paragraph.

“and of clause 14 of the general conditions of contract.”

Add the following at the end of the fourth paragraph:

“Road markings, particularly overtaking barrier lines are also elements of the road that require proper setting out. The contractor shall provide the engineer that critical reference points have

been satisfactorily recorded for later reinstatement before any work may commence that will obliterate the existing markings.”

The repair method of this route is to reconstruct the road to existing levels with some localised section to be indicated by the Engineer to be constructed to redesigned lines and levels.

## **B1207 NOTICES, SIGNS AND ADVERTISEMENTS**

One signboard shall be erected and maintained for the duration of the contract at points to be indicated by the engineer. Details of the signboards are included in the contract drawings.

## **B1209 PAYMENT**

Amend sub clause (e) Materials on site by deleting and replacing the words:

“Clause 52 of the general conditions of contract” in the first sentence of the first paragraph with Clause 6.10 of the General Conditions of Contract for construction works 2015 edition.

## **B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS**

Delete and replace the words in the first paragraph:

“Clause 54 of the general conditions of contract” in the fourth line of the first sentence with Clause 5.14 of the General Conditions of Contract for construction works 2015 Edition.

## **B1212 ALTERNATIVE DESIGNS AND OFFERS**

Add the following to the end of sub clause (m):

"The provision for contract price adjustment in the original tender summary must not under any circumstances be altered in an alternative tender"

**B1214 CONTRACTOR'S ACTIVITIES IN RESPECT OF PROPERTY OUTSIDE THE ROAD RESERVE AND OF SERVICES MOVED, DAMAGED OR ALTERED**

Add the following to the last paragraph of subclause (d)

"These written statements shall be handed to the engineer before the final certificate will be issued. Failing to obtain these written statements from all land/property owners and authorities concerned, the period of maintenance will be extended including all conditions related to such an extension, until such time that all these statements are obtained.

The obtaining of any such written statements will not relieve the contractor of the execution of any of his obligations to the satisfaction of the landowner or authority concerned, and to the approval of the engineer."

**B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL**

Delete and replace the words in the first paragraph:

"Clause 45 of the general conditions of contract" in the first line of the first sentence with Clause 5.12 of the general conditions of contract for construction works 2015 Edition.

Add the following after the first paragraph:

Method (ii) (Critical-path method) shall be used on this contract.

Method (ii) (Critical-path method)

Delete and replace the words in the second paragraph with the following:

Replace the word "five-day" in the second paragraph with "six-day".

The value of "n" is five (5 days).

**B1217 PROTECTION OF THE WORKS AND REQUIREMENTS TO BE MET BEFORE CONSTRUCTION OF NEW WORK ON TOP OF COMPLETED IS COMMENCED**

Delete and replace the words in the first paragraph:

"Clause 35 of the general conditions of contract" in the second line of the first sentence with Clause 8 of the General Conditions of Contract for construction works 2015 Edition.

**B1219 WATER**

*Add the following:*

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

"Water for use on site other than municipal, shall be subject to the required permit from Department of Water and Sanitation (DWS). This shall include such extraction points as rivers, dams, streams, and boreholes.

Use Table B1219 below to determine the suitability of water for construction purposes.

		Water Quality Classification Code							
		H0	H1	H2	H3	H4	H5		
Property	Unit	Pure water (AR)	Clean water (Rain)	Treated water (Municipal)	Silty (muddy) water with low salt content	Highly mineralised chloride sulphate water (brackish)	Waste brack, sewage, marsh, sea, etc water	Method	
PH*	-	7.0	5.7 – 7.9	4.5 – 6.5	4.5 – 8.5	9.0	-	SABS M113 SM 11 - 1990	
Dissolved solids*	ppm	0	1000	1500	3000	-	-	SABS 213 SM213 - 1990	
Total hardness*	-	None	None	Temporary	Temporary	Permanent	-	SABS 215 SM 215 – 1971	
Suspended matter	ppm	0	2000	2000	5000	-	-	SABS 1049 SM 1049 – 1990	
Electrical conductivity	mS/m	0	200	200	500	-	-	SABS 1057 SM 1057 – 1982	
Sulphates (SO4)	ppm	0	200	300	500	1000	-	SABS 212 SM 212 – 1971	
Chlorides (Cl)	ppm	0	500	1000	3000	5000	-	SABS 202 SM 202 – 1983	
Alkali Carbonates (CO3) & Bicarbonates (HCO3)	ppm	0	500	1000	1000	2000	-	SABS 241 – 1999	
Sugar	-	Negative	Negative	Negative	Negative	Negative	-	SABS 833	
Quality of water required		Untreated layer works	√	√	√	√	Investigate the effect on the quality of the material		
		Chemically treated layer works	√	√	√	Investigate the effect on the quality of the material			
		Concrete mass	√	√	√	Investigate the effect on the quality of the material			
		Concrete prestressed	√	√	References: 1. Concrete Technology – Dr S Fulton (1989) 2. Materials Manual (PAWC)				
		Slurry & emulsion	√	√					
		Soil/gravel tests	√	√					
		Chemical or control tests	√	√					

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

- A primary property. The quality of the water is that quality where all three of the primary properties are within the limits.
- The tabulated single values are maximum value except in the case of the pH value for pure water, which must be 7.0.

**B1224 THE HANDING-OVER OF THE ROAD RESERVE**

Add the following:

The full extent of the road reserve will be handed over to the Contractor at the beginning of the contract. He shall be responsible for the maintenance along this portion of the road until completion of the contract.

**B1229 SABS CEMENT SPECIFICATIONS**

The standard cement specifications SABS 471, SABS 626, SABS 831 and SABS 1466 have been withdrawn and are replaced by the new SANS 50197-1 and -2: Common cements, and SANS 50413-1 and -2: Masonry cement. These specifications will be applicable to this contract, and the descriptions and types of cements specified, will be based on the designations as defined in these specifications.

**B1230 ENVIRONMENTAL IMPACT CONTROL**

Respect for the environment is an important aspect of this contract. The environmental control of the site shall be governed by the Environmental Management Plan (EMP) included in Particular Specification C3.3 of this document, which provides, inter alia for:

- (a) The Contractor must allow for the satisfactory combating of dust and noise nuisance throughout the contract length during construction.
- (b) The Contractor must make provision for the prevention of excessive erosion and siltation throughout the Contract and in particular on adjacent land. Should excessive erosion and/or siltation take place outside the road reserve as a direct result of the Contractor's construction activities it will be the Contractor's responsibility to make good the erosion/siltation to the satisfaction of the landowner and the Engineer.
- (c) No littering by construction workers shall be allowed. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the engineer.
- (d) Adequate provision shall be made for temporary toilet requirements in construction areas. Use of the veld for this purpose shall not, under any circumstances be allowed.
- (e) Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants, such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate tailings, wash water, organic

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

materials and bituminous products. In the event of spillage, prompt action shall be taken to clear the affected area. Emergency measures in the event of spillage must be set out and the responsible person made aware of the required action. The construction of temporary and or permanent dams must be done with the necessary approvals from the Department of Water Affairs and Forestry and Environmental Affairs and Tourism.

- (f) Bituminous and/or other hazardous products shall not be spoiled on site and may only be disposed of in licensed authorised disposal facilities.
- (g) Control of invader species of plants.
- (h) Clearing shall be limited to the road prism and, where applicable, detours, which shall be sited in consultation with the Engineer and the local communities.

No separate payment will be made for observing these requirements as it is deemed to be included in the amount tendered for Item 13.01(c) but any avoidable non-compliance with these rules may be considered sufficient grounds for withholding payment of part or all of the amounts to be paid for the above item.

**B1231 WORKMEN'S COMPENSATION ACT**

All labour employed on the site shall be covered by the Workmen's Compensation Act. The Contractor shall pay in full, including the payment of the necessary levies, such amounts as are due in terms of the Act.

The manner in which Workmen's Compensation shall be handled shall be resolved by the Contractor at the commencement of the contract.

**B1232 CARE OF WORKS, DAMAGE, INJURY AND INSURANCE**

Compliance with Road Traffic Act:

When a service necessitates vehicles or plant travelling or working on a public road the following shall apply:

- The vehicles and plant shall be licensed in terms of the National Road Traffic Act 1996 (Act No. 93 of 1996) as amended.
- Every driver and operator of a vehicle or an item of plant shall be in possession of a valid permit in respect of the class of vehicle or item of plant he is driving or operating.

The contractor shall provide, erect and maintain sufficient road signs, barricades, fencing and guarding as may be necessary or required by the Engineer or by any act, regulation or statutory authority in order to minimise the danger and inconvenience caused to vehicle and pedestrian traffic.



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The Contractor by accepting this contract shall be deemed to have indemnified the Employer and the Engineer against any claims, damages and / or costs that may arise in this regard.

Add the following new clauses:

**B1233 COMMUNITY LIAISON OFFICER (CLO)**

Add the following payment items

- |  |                 |
|--|-----------------|
| (a) Remuneration of Community Liaison Officer                    | provisional sum |
| (b) Handling costs and profit in respect of sub-item B1233 (a)." | percentage (%)  |

**The CLO shall be paid at a rate as determined by the Employer.**

**B1234 TRAINING**

Add the following payment items

- |   |                 |
|---|-----------------|
| (a) CETA Accredited training  | provisional sum |
| (b) Handling costs and profit in respect of sub-item B1234 (a).   | percentage (%)  |
| (c) Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity to the Site | provisional sum |
| (d) Handling costs and profit in respect of sub-item B1234 (c).   | percentage (%)  |

Payment of the training allowance in sub-item B1234(a) will be made at the daily task rate set for the SPWP. Expenditure under sub-items B1234 (b), (c) and (d) shall be made in accordance with the General Conditions of Contract, the tendered percentages being a percentage of the amounts actually spent respectively under sub-items B1234 (a) and (c)."

**B1235 OCCUPATIONAL HEALTH AND SAFETY**

Add the following payment items

- |  |          |
|--|----------|
| (a) Contractors initial obligations in respect of the OHS Act and construction regulations | Lump Sum |
| (b) Contractors initial obligations in respect of the OHS Act and construction regulations | Month    |
| (c) Provision of full time Health and Safety Officer                                       | Month    |
| (d) Submission of the Health and Safety file   | Lump Sum |
| (e) Provision for personal protection equipment and clothing                               | Lump Sum |

**B1236 TRANSPORT TO SITE OF LOCAL TARGETED LABOUR**

This payment item has reference only to the temporary local targeted labour employed the contractor in fulfilment of his Contract Participation Goal offered, and not to the transport of his own permanent staff. Payment applies to labour directly hired by the Contractor, or hired by his own subcontractors, unless the subcontract is structured such that it covers the transport of labour by the subcontractor.

At tender stage, the Contractor committed himself to the engagement of certain amount of targeted labour, based on the planning of his construction methods. Whilst the contractor's cost on wages and other obligations for these workers are covered under the various pay items of the work they are involved in, this item makes provision for separate payment to the Contractor for transporting the workers to site daily. Payment shall be made only on provision that no deduction is made from the wages of the workers for transportation, and that the workers are assisted in transportation to site by the Contractor.

The payment shall cover full compensation for transportation by the Contractor by his own means or by subcontracted transport service providers.

The requirements, conditions, terms and limits of assistance covered by this pay item, are further set out elsewhere in the contract document.

Add the following payment items:

- |  |          |
|--|----------|
| Transport to site of local targeted labour | Lump sum |
|--|----------|

**B1237****LOCAL LABOUR**

It is of particular importance to the employer that wherever possible employment opportunities be used to generate maximum benefit within the local community through the optimal utilization of local labour. It is important that the contractor identifies specific tasks where maximum labour input is ensured. Each such task must be briefly described in the contractor's tender, together with total associated man-days."

## SECTION 1300: CONTRACTOR'S SITE ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

### B1302 GENERAL REQUIREMENTS

#### (c) Legal and contractual requirements and responsibility to the public

*ADD THE FOLLOWING PARAGRAPH:*

"The Contractor shall comply with all statutory and contractual requirements of the Environmental Management Programme, as included in the Project Specifications."

*ADD THE FOLLOWING NEW SUBCLAUSE:*

#### "(d) Contractor's ablution facilities

The Contractor shall, at each construction section, provide sufficient portable chemical latrine units. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the Employer's Agent. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates tendered for the Contractor's time-related obligations."

### B1303 PAYMENT

**Item**

**Unit**

#### B13.01 The Contractor's general obligations:

*ADD THE FOLLOWING SUBITEM:*

"(d) Environmental obligation ..... month

REPLACE "... for sub item (c) shall, for the three sub items together ..." IN THE FIRST PARAGRAPH WITH "... for sub items (c) and (d) shall, for the four sub items together ...".

*ADD THE FOLLOWING AFTER THE ON THE FIRST PARAGRAPH*

"This section also covers "the contractor's general obligations" for all sub-contractors appointed by the main contractor. No additional payment shall be paid for subcontractor's general obligations".

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

*ADD THE FOLLOWING AFTER THE FOURTH PARAGRAPH:*

"The combined total tendered for sub items (a), (b) and (c) shall not exceed 15% of the Tender Sum."

**SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL**

**B1402 OFFICES AND LABORATORIES**

**b) Offices**

*Amend sub-clause (xii) to read as follows:*

“(xii) A complete telephone service capable of delivering electronic and facsimile data, together with ...”

*Amend sub-clause (xvii) to read as follows:*

“(xvii) A combination colour printer/copier/scanner/facsimile machine for A3 and A4 size documents.”

*Add the following sub-clauses:*

“(xviii) Plan holders which shall be able to accommodate 30 AO – sized drawings hanging vertically and of a robust construction to withstand continuous use over the duration of the contract.

(xix) An electric refrigerator of specified capacity.

(xx) Floodlights which are to be controlled by a photocell for security purposes at the offices and laboratory.

**c) Laboratories**

*In the second paragraph, second line substitute “drawings” with “figures included in the project document”*

**B1404 SERVICES**

**b) Water electricity and gas**

*Add the following to the end of the third paragraph:*

“The power supply shall be regulated by a suitable voltage regulator in order to maintain a constant current and voltage level at all times to prevent damage to the office and laboratory equipment and related machinery during power surges. In the event of damage to the office

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

and laboratory equipment and related machinery because of a faulty voltage regulator, the contractor shall be liable for payment of all repair or replacement costs of such damaged items.”

*Add the following paragraph:*

“The supply of electricity and water to the offices and laboratories of the engineer’s supervisory staff shall be maintained 24 hours per day”

**B1405 GENERAL**

*Add the following to paragraph (e):*

“In addition, the offices and laboratories shall be supplied with approved burglar proofing and the whole site shall be guarded full time during the day and night, as well as over weekends and holidays. The site shall also be fenced with a 2,4m high security fence with a razor-cut wire being used as strands or with a brick wall. The cost of this protection shall be included in item B13.01.”

**B1406 MEASUREMENT AND PAYMENT**

**Item**

**Unit**

**B14.03 Office and laboratory fittings, installations and equipment**

**a) Items measured by number**

*Add the following subitems:*

“(xviii) Plan holder.....number (No)

(xix) Electrical Refrigerator.....number (No)

(xx) Floodlights complete with poles and 500Watt minimum globes.....number (No)

The tendered rate for subitem B14.03(a)(xx) shall include for the operation of the lights from sunset to sunrise for the full duration of the contract.”

**b) Prime cost items and items measured and paid for in a lump sum**

*Add the following subitems:*

“(ix) Cell phones costs, including pro-rata

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

rentals, for calls in connection  
with contract administration.....prime cost sum (PC)sum  
(x) Handling costs and profit in respect of  
subitem 14.03(b)(ix) above.....percentage (%)

Payment of B14.03(b)(ix) shall include for the cost of all cellular telephone calls in connection with contract administration, as well as pro rata fixed costs.

The tendered percentage for pay item B14.03(b)(x) shall be a percentage of the amount actually spent under subitem B14.03(b)(ix) which shall include full compensation for the profit and handling costs incurred in managing provision of the cellular phones and monthly billings.”

**B14.10 Provision of photostat facilities**

*Amend this pay item description to read “Provision of copying facilities” and in the payment prescription, amend “photocopier” to read “combination colour printer/copier/scanner/facsimile machine”.*

## **SECTION 1500: ACCOMMODATION OF TRAFFIC**

### **B1501 SCOPE**

*Add the following:*

"It is a condition of this contract that traffic is accommodated taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is volume 2, chapter 13 of the June 1999 edition. Copies of this publication are available from Government Printers –Tel: (012) 334 4507/8/9 or (012) 334 4510 Fax: (012) 323 9574.

This section also covers the provision of additional information signs for motorists and the release of any notices to the media and public."

### **B 1502 GENERAL REQUIREMENTS**

Insert the following:

"The whole of the site will be handed over to the contractor at the beginning of the contract. The sequence in which various parts of the site may be occupied by the contractor for the execution of the different items of work shall be subject to the requirements of the contract documents regarding, inter alia, working hours and the number, spacing and length of the work areas which may be occupied at any particular time.

The contractor shall programme his work taking due cognizance of restrictive conditions indicated in Clause B1204. The contractor's tendered rates shall include full compensation for all possible additional costs which may arise from the above and no claims for extra payment as a result of this modus operandi will be considered. The contractor shall in particular note that no additional compensation shall be made for work that could be considered as half-width construction."

Safety

Add the following as an introductory sentence to this sub clause:

"Traffic shall be accommodated in accordance with the South African Road Traffic Signs Manual with the least delay and discomfort to the public."

(b) Providing Temporary Deviations

Add to Sub-clause 1502(b) the following:



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The contractor shall keep the provincial traffic police, the municipal traffic departments and the engineer fully informed with regard to any changes in the normal traffic flow and obtain their approval for these changes.

During the non-working hours, all unnecessary obstructions to the traffic shall be removed and all signs no longer applicable to the situation shall be removed or effectively covered.'

It is a condition of this contract that not more than 10 km of deviation should be open to public traffic at any one time, and that not more than three separate deviations should be open at any one time. No additional payments will be made where situations arise that the contractor has deviations cross over the roadway under construction.

**(i) Traffic Safety Officer**

Add to Sub-clause 1502(i) the following:

The Contractor shall submit a CV of the candidate to the Engineer for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall be made available to discuss road safety and traffic accommodation matters whenever required by the Engineer.

Delete Sub-clause 1502(i), sub-sub-clauses (ii) and (iii) and replace with the following:

(ii) Record on neat and dimensioned sketches and submit to the Engineer the position and sign reference number where applicable of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The position of each unit shall be adequately referenced to identifiable permanent features located along the site of the works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the Traffic Safety Officer and shall be signed by the Traffic Safety Officer before being submitted to the Engineer.

The records shall be amended whenever changes are made in the field and the revised detailed sketches shall be submitted to the Engineer. This shall include the recording of the position of flagmen and stop/go control men and their associated traffic accommodation equipment wherever they are used."

(iii) Personally, inspect the position and condition of each traffic accommodation feature on the whole site of works twice each day by 9:30 and by 16:30, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Engineer such record sheets by 10:00 and by 17:00 each day. The traffic Safety Officer shall keep a duplicate book for this specific purpose.

The Traffic Safety Officer shall also submit to the Engineer by 10:00 each morning, a record of all matters pertinent to site safety and traffic accommodation throughout the site of works the previous day. He shall also record the daily labour returns of flagmen, stop/go and traffic signal control men employed.

The traffic safety officer shall be equipped with a cellular telephone and shall have a vehicle and 3 labourers at his disposal 24 hrs a day and he shall be directly answerable to the Contractor's Site Agent. The Traffic Safety vehicle shall be a truck with a capacity of 5 tons and shall be equipped with a high visibility rear panel as shown on Figure 24 of Road Signs Note No.13. The traffic Safety Officer shall have a direct line of communication at all times with the police and traffic officers responsible for the area within limits of the Contract. The provision of the Road Safety Vehicle, driver, three labourers and the cost of the cellular telephone shall be deemed to be included in the rates tendered for the Contractor's establishment on site.

Add to Sub-clause 1502(i) the following new sub-sub-clauses:

(ix) Ensure that all obstructions, soil and gravel heaps, related to the Contractors activities be removed before nightfall where applicable and as instructed by the Engineer and that the roads are safe for night traffic.

(x) The Traffic Safety Officer shall, in addition to the duties listed in Clause 1502 (i), also be responsible for removal of broken down vehicles off the roadway and implementing actions requested by the traffic authorities with regard to the work to be carried out and shall be responsible for the erection and maintenance of all traffic signs necessary for the accommodation of traffic.

(j) Public traffic

The contractor must plan and conduct his activities so as to bring about the least possible disruption to the traffic on the road. All halting of traffic will require the prior approval of the engineer and must be pre-arranged with the appropriate traffic authorities.

In all dealings with the public the Contractor shall bear in mind the public's right to enjoy the use of the road, and the Employer's desire to interfere as little as possible with this right. At all points of contact with the public, the Contractor shall deal with deliberate courtesy and understanding in any discussions or disputes.

(k) Failure to comply with provisions

The failure or refusal of the Contractor to provide barricades or traffic signs at the proper time, or to take the necessary precautions for the safety and convenience of public traffic as specified or instructed by the Engineer, shall be sufficient cause for the suspension of all work under this Contract without any additional compensation to the Contractor until the required accommodation of traffic has been completed to the satisfaction of the Engineer. The above shall be sufficient cause for the Engineer to deduct penalties as follows:

A fixed penalty of R5 000,00 per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of Section 1500 of the standard specifications and section B1500 of the Project Specifications.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

In addition, a time-related penalty of R500,00 per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after an instruction to this effect has been given by the Engineer. The Engineer's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

The penalties shall be deducted from the payment certificate for the month in which the non-compliance occurs.

Payment will also be deducted in accordance with Payment Item B15.01 of these Project Specifications.

**(l) Access to work area**

Construction traffic will only be permitted to enter or leave the work area at points approved by the Engineer and as clearly indicated on the traffic management plans. When any access point is in use, flagmen shall be provided for each such point. At least two flagmen shall be stationed at the access point to control the movement of construction traffic, and to warn public traffic on both lanes of the existing road. It is not the purpose of these flagmen to stop public traffic flow.

**(m) Extension of time for completion**

Accommodation of public traffic on the works or any delays caused thereby, as well as any suspensions due to failure by the Contractor to comply with the provisions for the accommodation of traffic, will not be regarded as special circumstances for an extension of time.

**(n) Handing over site (additional sub clause):**

The entire road reserve within the construction limits will be handed over to the contractor on commencement of the contract. The contractor will then be responsible for the accommodation of traffic on, and maintenance and repair work to be done on the existing roadways, from the date of handing over up to the issue of the Certificate of Completion.

The contractor's programme for the accommodation of traffic and any proposed deviation therefrom must be approved by the engineer on the site.

The Road Safety Officer to be appointed by the contractor shall be on full-time duty and shall be responsible for traffic control and safety on site, and for ensuring that all the requirements for accommodation are met.

**B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES**

Replace the first sentence of the first paragraph of Clause 1503 with the following:

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The Contractor shall provide, erect and maintain the necessary traffic-control devices, road signs, channelisation devices, barricades, warning devices and road markings (hereinafter referred to as traffic-control devices) in accordance with these special provisions and as shown on the drawings and in the South African Road Traffic Signs Manual in conjunction with the latest edition of Road Signs Note No.13 Roadworks and remove them when no longer required. It shall be incumbent upon the Contractor to see to it that the abovementioned traffic-control devices are present where required at all times and are functioning properly, and he shall replace any that have been damaged, lost, stolen or obliterated at his own cost.

Replace the third paragraph of Clause 1503 with the following:

The type of construction, spacing and placement of traffic-control devices shall be in accordance with the latest edition of Road Signs Note No.13, Roadworks, these special provisions, the drawings and the South African Road Signs Manual. The recommended arrangements of the traffic control devices illustrated in Appendices 1 to 6 of Road Signs Note No.13 and/or drawings shall not be departed from without prior approval of the Engineer. Typical arrangements expected to be used in the Contract are given on the tender drawings.

However, this shall not absolve the Contractor of his obligations in preparing traffic management plans as per this Project Specification.

The details shown for spacing and placement of traffic-control facilities may however, be revised at the discretion of the Engineer where deemed necessary to accommodate local site geometry and traffic conditions

(b) Road signs and barricades

*Add to Sub-clause 1503(b) the following:*

The Contractor shall be responsible for the protection and maintenance of all signs, and shall at his own cost replace any that have been damaged, or lost, or stolen.

All temporary road signs shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included for in the tendered rates for the various types of temporary road signs.

The traffic-control devices, temporary signs and devices required in the Contract are those designated in Road Signs Note No.13.

The covering of permanent road signs, if applicable, shall be by utilising a hessian bag, which shall be pulled over the sign in the form of a hood and fastened to the sign posts. Plastic bags or other materials and fastening by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs shall be deemed to be covered by the tendered rates of items B15.01 and 15.10.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regards to signposting are met and written approval of the Engineer is obtained.

The Contractor shall keep sufficient surplus signs, delineators and barricades on the site to allow for the immediate replacement of damaged or missing items, in any case, within three hours of instructions having been given by the Engineer. Delineators shall be of the flexible plastic reversible variety and not of the rigid metal variety.

Should the Contractor fail to respond to an instruction to re-erect a road sign within the designated time or fail to comply to the requirements, the work on that section will be suspended without any compensation to the Contractor.

(c) Channelisation devices and barricades

*Add to Sub-clause 1503(c) the following:*

Delineators shall be of plastic and shall be capable of withstanding winds caused by passing traffic in typical working conditions without falling over. To achieve this, the base shall be ballasted using sand bags.

Traffic cones manufactured in a fluorescent red-orange or red plastic material shall be used only at short term lane deviations during daylight. Cones used on all deviations shall be 750 mm high. Lane closures which continue into the night time shall be demarcated by delineators only.

The use of steel drums as channelization devices will not be allowed on this Contract unless instructed by the Engineer. Channelization shall be effected by the use of delineators or cones as detailed in Road Signs Note No. 13 - Roadworks.

(e) Warning devices

*Add to Sub-clause 1503(e) the following:*

All construction vehicles and plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. All vehicles and plant shall obtain a clearance permit from the Engineer before being allowed onto the site.

Rotating lights shall have an amber lens of minimum height of 200 mm and shall be mounted to ensure clear visibility from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted sections of a public road but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, and as the vehicles accelerate to the general speed when entering the road from a construction area. Lights on plant shall operate continuously while the plant is working alongside sections of road open to public traffic.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

All LDV's and cars operating on site shall also be equipped with rotating amber flashing lights which shall be placed so as to be clearly visible and operated continuously while the vehicles are maneuvering in or out of traffic or are travelling or parked alongside roads open to public traffic.

Rotating lights and the "Construction Vehicle" signs on the Contractor's vehicles and plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles.

The Contractor shall apply and maintain lights together with temporary mounting brackets, to the approval of the Engineer. Vehicles and plant that do not comply with these requirements shall be removed from the site.

The Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way. Any person found not wearing a reflective jacket under these circumstances shall be removed from the site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Engineer, ineffective shall be immediately replaced by the Contractor.

*Add the following New Sub-clauses to Clause 1503:*

**(g) Other signs and facilities**

The Engineer may instruct the Contractor to provide any other road sign, reflective tape, etc not measured in standard pay items. The road signs shall conform with the requirements of the South African Traffic Signs Manual, Road Note 13 or specification provided by the Engineer.

The Contractor shall inform the general public of the intended road works, construction period and accommodation of traffic proposal through press releases in local and provincial newspapers."

Cones shall be manufactured and positioned in accordance with the details specified on the drawings.

All traffic cones and road signs shall be kept clean and visible at all times. All bituminous or other foreign material shall be removed by the Contractor, or the dirty traffic cones and road signs shall be replaced with new ones at the cost of the Contractor, as directed by and to the satisfaction of the Engineer.

**(h) Safety jackets**

The Contractor will be responsible to ensure that all construction workers, staff of the Engineer and visitors shall wear safety jackets when moving around on site. The jackets shall be of an approved type, orange in colour and shall be to the approval of the Engineer. The Contractor shall provide the Engineer with six jackets. No separate payment will be made for the jackets.

**B1511      MAINTENANCE OF GRAVEL TEMPORARY DEVIATIONS AND EXISTING GRAVEL ROADS  
USED AS TEMPORARY DEVIATIONS**

*Add to Clause 1511 the following:*

Where applicable, all references to gravel roads and/or diversions shall also include gravel shoulders used as diversions.

**B1513      ACCOMMODATION OF TRAFFIC WHERE THE ROAD IS CONSTRUCTED IN HALF  
WIDTHS**

All work adjoining the carriageway shall be undertaken only when the shoulder is barricaded and the required road signs, barricades and cones have been installed as shown on the drawings or as instructed by the engineer.

During construction, when work is in progress on one portion of the carriageway and shoulder of the road, the other portion of the road shall remain open at all times to allow for safe one-way traffic flow.

The speed of vehicles alongside actual construction areas must be limited to a maximum of 40 km/h. STOP/GO signs and flagmen shall be employed at the points where construction traffic enter the working area thus creating a potential danger situation for public traffic.

In the case of intersections, provision shall be made, where necessary, for STOP/GO signs. Intersections shall also, at all times, be able to safely carry traffic.

As soon as a section of road has been repaired or treated, the centreline shall immediately be indicated by means of pre-marking. The centreline shall be repainted immediately after a maximum of 6 km of a carriageway has been repaired. Temporary no-overtaking signs (R8) shall be placed at those sections of road where barrier lines are obliterated or covered. The centreline shall be repainted when repainting the final road centreline.

*Amend Clause 1513 as follows:*

In the third line of the third paragraph, delete "4 km" and replace with "3 km".

In the second line of the fourth paragraph, delete the word "four" and replace with "three". Also, delete "2 km" and replace with "3 km".

**B1517: MEASUREMENT AND PAYMENT**

**B15.03      Temporary traffic-control facilities**

**Add the following sub-items:**

<u>Item</u>	<u>Unit</u>
-------------	-------------

B15.03 Temporary traffic control facilities	
---	--

*Replace the payment description according to the following:*

“(a) Flagmen.....man-day

The unit of measurement shall be a full day and night worked by flagmen. A man-day shall be deemed to comprise of three eight hour shifts in a twenty four hour period. Three shifts of eight hours per flagman equates to one man-day. Shorter single portion shifts (6 to 10 hours) shall be measured as a half man-day.”

<u>Item</u>	<u>Unit</u>
-------------	-------------

“B15.03 (n) Amber rotating flashing lights with magnet base as specified for the engineer’s use	Number (No)
--	-------------

The unit of measurement is the number of amber rotating flashing lights with magnet bases supplied to the engineer as specified. The tendered rate shall include full compensation for supplying the amber rotating flashing lights to the engineer on site as well as maintenance and, if necessary replacement, thereof to keep it in a good working condition at all times for the duration of the contract.

<u>Item</u>	<u>Unit</u>
-------------	-------------

B15.03 (o) Provision of a robot system	Number (No)
--	-------------

The unit of measurement shall include full compensation for the procurement, erecting, operating and maintaining a set of traffic lights, consisting of two units erected on both ends of a deviation.

Payment for the traffic lights shall include a set of radio’s or any other equipment that will enable the operators to effectively communicate and operate the robots over the distance that the robots are apart, when the system is not operated automatically.

The robot system shall be an automatic system of which the cycle time are adjustable in order to optimize the green time for traffic with variation in the length of road under construction. The robot system shall be reliable to operate 24 hours per day continually.



- **Amend the following notes under the subheading “(b), (d), (e), (f) and (h)” in the measurement paragraphs as follows:**

The tendered rate for sub item (h) shall also include full compensation for the sign stand, for the provision of two sandbags per delineator to hold it in position and for their replacement when necessary due to whatever reason. Only the standard plastic type road sign TW 401/402 (Old DTG 50 J) will be allowed on this contract.

***Amend payment paragraph (j) to read as follows:***

“The unit of measurement shall be the number of cones provided over and above those indicated on the drawings as required by the engineer. Payment for these cones shall include supply, re-use or removal of the traffic cones as necessary.”

***Under the subheading “General” add the following to the last paragraph:***

“Only items additional to those shown on the drawings are scheduled for payment.”

**B15.04 Relocation of traffic-control facilities**

- ***Divide item B15.04 in the following sub items:***

<u>Item</u>	<u>Unit</u>
(a) Relocation of traffic-control facilities, excluding robot systems	Lump sum
(b) Relocation of robot systems in excess of 100 m	.....number (No)

Sub-item (a) is only applicable to those items ordered by the engineer and for which the cost of relocation is not already included in Item 15.03 (or B15.03)

Sub-item (b) for the relocation of the robot systems shall only be applicable upon removal of the system to an entirely new position approved by the engineer. No payment shall be made for their removal to a new position if the distance moved is less than 100 meters.

The tendered rate for sub-item (b) shall include full compensation for the number of robot sets relocated in excess of 100 m. Payment under this item shall be full compensation for all labour, plant, equipment, tools, transport or any other cost to remove and re-erect the robot system to its new position.

**B15.15 Provision of traffic safety equipment for visitors**

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

ItemUnit

(a) Safety jackets.....number (No)

The unit of measurement shall be the number of each item provided as specified and approved by the engineer.

The tendered rates for the various safety items shall include full compensation for provision thereof and maintenance in good working order.

**B15.16 Provision of traffic safety**ItemUnit

(c) Traffic safety officer.....month

The unit of measurement shall be the month (or part thereof) that the specified duties of the traffic safety officer are performed, irrespective of the number of traffic safety officers employed in any 24-hour day.

The tendered rate shall include full compensation for the cost of the traffic safety officer(s) to conduct the duties as specified in sub-clause B1502(i) and includes the provision of his own vehicle, fuel, vehicle maintenance and insurance and the cost of the cellular telephone and all other incidentals related to the performance of his duties.

(d) Traffic safety vehicle(s).....month

The unit of measurement shall be the month (or part thereof) that the safety vehicle is on site and in continuous use in the performance of traffic safety.

The rate tendered shall include the provision of the traffic safety vehicle, fuel, vehicle maintenance and insurance costs, drivers, labourers and all other incidentals related to the performance of the traffic safety duties.

**SECTION 1600: OVERHAUL**

**B1602: Definitions**

(b) Overhaul

Delete the first, second and last paragraph of this subclause.

(d) Free-haul distance

Replace this subclause with the following:

“Materials obtained on site or from temporary stockpiles

“The free-haul distance shall be the distance up to which overhaul material may be hauled before overhaul becomes payable. This distance shall be 2.0km in the case of all materials used on site on site or placed in temporary stockpile.

“In the case of materials spoiled at an approved dumping site off the site by the Contractor, the free-haul distance is restricted.

“Materials obtained on site or from commercial sources

“The free-haul distance applicable to materials obtained from commercial sources is unrestricted.

(e) Overhaul distance

Add the following to this subclause:

“No overhaul shall be measured in respect of materials spoiled at an approved dumping site off the site by the Contractor. The Contractor shall in his tendered rates for hauling the materials over the required distance.”

“No overhaul shall be measured in respect of materials obtained from commercial sources. The Contractor shall allow in his tendered rates for hauling the materials over the required distance.”

**B1603: Measurement and Payment**

Note: Delete the first paragraph of the “Note” which follows immediately after Item 16.02.

Add the following to the “Note” which follows immediately after Item 16.02.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

“Overhaul shall not be measured for payment in the case of materials having unrestricted free-haul. Refer to subclause B1602 (d).”

## **SECTION 1700: CLEARING AND GRUBBING**

### **B1701 SCOPE**

*Add the following after "grubbing" in the first paragraph:*

"including the demolishing and disposal of structures, shelters, dwellings and outbuildings within the new road reserve at a site provided by the Contractor and approved by the Employer's Agent."

### **B1702 DESCRIPTION OF WORK**

#### **Conservation of topsoil**

*Replace the second paragraph of this clause with the following:*

"After clearing and grubbing, all topsoil shall be removed to either windrows alongside the construction area or to stockpile. Where ordered by the Employer's Agent, any topsoil that shall be required for the top soiling of new banks and cuts, but which cannot be accommodated within the construction site, shall be loaded and hauled to the designated stockpile area where it shall be placed in temporary stockpiles for later use in the rehabilitation of the site affected by construction activities. Where new borrow pits are to be opened up, the topsoil shall first be removed (independently of the overburden) and placed in temporary stockpiles at the edge of the borrow pit. The moving of topsoil from windrow or the loading of topsoil from temporary stockpiles and the placing and spreading thereof on cut or fill slopes or on borrow pit spoil sites, is covered in Section 5800."

*Add the following subclauses:*

#### **"(e) Clearing household refuse from the construction area**

Where household refuse has been deposited within the construction area, it shall be removed to approved dumping sites provided by the Contractor."

### **B1703 EXECUTION OF WORK**

#### **Areas to be cleared and grubbed**

*Replace the first sentence of the first paragraph with the following:*

"The portions of the road reserve falling within the limits of the road prism along temporary deviations/roads and certain borrow areas, shall be cleared and grubbed using conventional (non-labour-intensive) methods."

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

*Delete "normally" in the second line of the second paragraph.*

*Replace the second sentence of the fourth paragraph with the following:*

"A penalty of R5 000,00 shall be imposed for every tree which is unnecessarily removed or damaged."

**B1704 MEASUREMENT AND PAYMENT**

Item

B17.01 Clearing and grubbing

*Add to Payment Item 17.01 the following:*

Clearing and grubbing for the construction of camp sites shall not be measured separately. Payment shall be regarded as included in the rates tendered for the applicable items for the above-mentioned work.

Within the road reserves clearing and grubbing will only be measured and paid for where required for road works. All topsoil removed in this process must be stockpiled in heaps not exceeding 1 m height for later use during construction and landscaping.

**B1704: Measurement and Payment**ItemUnit

B17.01 Clearing and grubbing

ha

Add the following paragraphs after the second paragraph:

"The tendered rates shall also include all costs in connection with transporting material to and dumping it at an approved dumping site."

Demolition, removal and disposal of reinforced and unreinforced concrete at existing kerbs and channels shall be measured and paid separately under the applicable items in section 2200."

*Add the following payment item:***Item Unit**

B17.08 Demolition, removal and disposal off site of miscellaneous structures consisting of:

(a) Unreinforced concrete.....m<sup>3</sup>(b) Masonry and stone pitching..... m<sup>3</sup>(c) Reinforced concrete ..... m<sup>3</sup>

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The unit of measurement shall be the cubic metre of undesired concrete, masonry or stone pitching to be demolished, which includes all materials both above and below the ground level.

The tendered rate shall also include full compensation for all work necessary for the removing of all undesired concrete as directed by the Employer's Representative including the haulage and spoiling of all material from demolition activities to an approved landfill site. The contractor may sell demolition materials to offset haulage costs."



## **SECTION B2100: DRAINS**

### **B2104 SUBSOIL DRAINAGE**

#### **Materials**

Pipes

*Amend this subclause by adding the following to the end of the third paragraph:*

"(category - heavy duty) or SANS 1601 (stiffness Class 400)

The pipes to be used shall be either slotted uPVC pipes or perforated HDP pressure pipes, 100 mm ID.

Pipes must be stored in a shaded area without exposure to direct sunlight."

Natural permeable material

*Add the following to the third paragraph:*

"The crushed stone shall be fine (14 mm nominal) and shall be washed clean of all fines."

#### **Materials**

Synthetic-fibre filter fabric

*Replace this subclause with the following:*

"(iii) Synthetic-fibre filter fabric or geotextile

Composition and manufacturing

The geotextile shall be a synthetic polymer material manufactured in a continuous permeable homogeneous sheet (in rolls) by one of the following methods:

Woven

non-woven, mechanically bonded (continuous fibre spunbonded, needle-punched)

non-woven, chemically bonded

combination of woven and non-woven.

The synthetic polymer shall be one or more of the following:

polyester  
polypropylene  
polyethylene.

On account of the temperature and moisture susceptibility of polyamide, this synthetic product is not considered acceptable.

#### Classification

Geotextiles shall be classified into the following main grades according to typical usage.

- Grade 1: Very good installation conditions, e.g. subsurface drains with relatively smooth trench walls, small to medium size filter stone (10 mm to 20 mm) dumped from the edge of a shallow drain, and where careful handling of the geotextile is expected.
- Grade 2: Normal installation conditions, not as good as Grade 1, e.g. larger subsurface drains with rough trench walls, large size filter stone (37,5 mm) dumped from a height onto the geotextile-lined drain, and where normal handling of geotextile is expected.
- Grade 3: Adverse conditions, e.g. foundation drainage, gabions and gabion mattresses, light rock protection, rock fills and light separation of materials, separation and reinforcement of fill layers, light river protection works, and where rough handling of the geotextile is expected.
- Grade 4: Adverse conditions where strength is more important than permeability, e.g. foundation drainage, gabions and gabion mattresses, rock protection, earth encapsulation, separation and reinforcement of fill and rockfill layers, heavier river protection works, and where rough handling of the geotextile is expected.
- Grade 5: As for Grade 4 but where additional strength is required, e.g. in heavy separation, earth and rock encapsulation, river protection works and shore revetment works.
- Grade 6: As for Grade 5 but where maximum strength is required and where permeability will be relatively unimportant.

The minimum requirements for each grade are listed below in Table B2104/2. Under normal circumstances Grades 1, 2, 3, 4 and 5 will be specified while Grade 6 will be specified in special cases where maximum strength is required by special design considerations.

The various grades and the corresponding typical usage above shall be regarded as a guideline only. The actual grade of geotextile to be used on the work will be as stated in the Pricing Schedules as required by the Employer's Agent.

### Durability

A geotextile is required to comply with the following specification:

#### Resistance to chemical attack:

The geotextile shall withstand the level of aggressiveness of the soil and ground water given below without significant loss of its strength and hydraulic properties during its design life of twenty-five (25) years:

Soil and ground water with a pH in the range of 4 to 12 (pH to be determined by Method A20, TMH1, 1986).  
Soil (as paste) and ground water containing salts with a conductance of up to 1,0 S/m (conductivity to be determined by Method A21T, TMH1, 1986).

#### Resistance to ultra-violet light:

The geotextile shall maintain at least 80% of its original strength after direct exposure to sunlight of 1 500 hours.

#### Resistance to rot:

The geotextile shall be entirely rot-proof and shall not support the growth of algae.

#### Selection

The geotextile required shall satisfy the criteria for the grade of geotextile as specified in the Pricing Schedules or project specifications.

The Contractor shall, at least forty-five (45) days before the installation of the geotextile, submit to the Employer's Agent samples of the geotextile he proposes to use, so that the Employer's Agent may carry out the appropriate tests specified in subclause B2104(a)(iii)(6) and in clause 8114, and confirm the use thereof if he is satisfied that the geotextile meets the specified requirements.

No extra payment shall be made for providing the samples for testing.

#### Properties

The various grades of geotextile as classified above shall comply with the general requirements as listed below in Table B2104/2.

TABLE B2104/2: GRADES OF GEOTEXTILES

PROPERTIES	LIMITING VALUES*					
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Thickness	As specified by the manufacturer					
Mass per unit area g/m <sup>2</sup>	100	140	200	240	300	350
Tensile strength kN/m	6	10	13	18	25	30
Penetration load kN	1	1.5	2.5	3	4	5
Penetration resistance* (max.) mm	35	30	25	18	16	10
Permeability litre/s/m <sup>2</sup>	25	20	15	15	10	5

**Notes:**

- The minimum values of properties are listed, except for penetration resistance where the maximum values are given.

Thickness shall be as specified by the manufacturer for the specific product offered.

The values given in the table shall apply to all geotextiles, irrespective of the type of material used.

Where these values differ

from the values in Table 1 of the Code of Practice SANS 10221: The testing of geotextiles, the values of Table B2104/2 shall apply.

**Testing**

The tests to be carried out on geotextiles relate to the material and the method of manufacture and are used mainly to ascertain that the correct grade of geotextile is supplied, and that the material is equivalent in quality to that selected and specified for use on the Works. The Contractor will be required, at the request of the Employer's Agent, to submit a certificate by an approved laboratory to prove compliance with the specified qualities without additional cost to the Employer.

**Thickness (mm):** The thickness of the material shall be specified by the Contractor (or supplier). Thickness and compressibility tests shall be carried out in accordance with SANS 10221 to check that the material supplied conforms to the thickness specified by the Contractor.

**Mass per unit area (g/m<sup>2</sup>):** Testing shall be carried out in accordance with SANS 10221.

**Tensile strength (kN/m):** Testing shall be carried out in accordance with SANS 10221.

**Penetration load (kN):** Testing shall be carried out in accordance with SANS 10221.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

Puncture resistance (mm):	Testing shall be done in accordance with test procedures laid down by the CSIR, Pretoria, and repeated in clause B8114.
Permeability (litre/s/m <sup>2</sup> ):	Testing shall be carried out in accordance with SANS 10221."

Galvanized woven wire mesh

*Replace the contents of this subclause with the following:*

"Galvanized woven wire mesh manufactured from 3,5 mm diameter wire, 250 mm x 250 mm in area with 12 mm x 12 mm maximum mesh size and fitted with a frame made from 25 mm x 5 mm galvanized flat steel, shall be secured at the outlets of subsoil drainage systems with 4 x M6 galvanized bolts, in accordance with the details on the drawings. The mesh shall be welded to the frame before the whole unit is galvanized."

**Construction of subsoil drainage system**

*Add the following subclause:*

"(v) Proving of pipes in subsoil drainage systems

On completion of the pipe laying and prior to backfilling, all pipe joints shall be surveyed as proof of their installation to line and level.

On completion of the pipe laying and backfilling, the pipes shall be proved by pulling through a cylindrical cleaning brush followed by a wooden mandrel  $\pm$  400 mm long and having a diameter 5,0 mm less than the bore of the pipe. Proving of pipes shall not be paid for separately and the cost thereof shall be deemed to be included in the rate tendered for laying the pipe."

**B2107 MEASUREMENT AND PAYMENT**

**Item**

**B21.01 Excavation for open drains**

*Add the following to the third paragraph:*

"The tendered rate shall also include full compensation for trimming the open drains."

## **SECTION 2200: PREFABRICATED CULVERTS**

### **B2201 SCOPE**

*Add to Clause 2201 the following:*

This section also covers work associated with the removal of existing pipes and their inlet and outlet structures. Due to the nature of the project, the Contractor can expect that works associated with the installation of pipe culverts will have to be carried out under traffic.

### **B2204 CONSTRUCTION METHODS**

*Add to Clause 2204 the following:*

Generally, prefabricated stormwater drainage pipes and rectangular culverts will be installed using the 'trench method'. Installation in half widths can be anticipated.

### **B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS**

(f) General

*Add to Sub-clause 2210(f) the following:*

Pipe culverts have been designed to the positions, lengths and elevations shown on the drawings. However, site conditions may dictate that changes are necessary. Any such changes will be agreed with the Engineer and recorded in writing.

### **B2211 BACKFILLING OF PREFABRICATED CULVERTS**

Add to the fourth paragraph of Clause 2211 the following:

Where backfilling is done in the upper layers of the road formation, the quality and strength of the backfill material shall at least match that of the surrounding layers.

### **B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES**

*Add to Clause 2212 the following new sub-clause (j):*

(j) Subsurface drain outlet into catchpits and manholes

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

Where required, sub-surface drain pipes shall be led into standard stormwater catchpits or manholes, as shown on the drawings or as directed by the Engineer. This shall be done either by making provision during the construction of the chamber, or by breaking out and making good after completion of the chamber.

**B2218 MEASUREMENT AND PAYMENT**

*Amend Payment Item 22.12 to read as follows:*

<u>Item</u>	<u>Unit</u>
B22.12 Removing existing concrete, brickwork and stonework	
(a) Plain concrete	Cubic metre (m <sup>3</sup> )
(b) Reinforced concrete	Cubic metre (m <sup>3</sup> )
(c) Brickwork	Cubic metre (m <sup>3</sup> )

**SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELING, CHUTES AND DOWNPIPES, AND CONCRETE LINING FOR OPEN DRAINS**

**B2302 MATERIALS**

**Kerbing and channeling**

*Add the following after the first sentence:*

"Irrespective of the minimum transverse strength specified in SANS 927, all concrete shall be of class 30/19."

**Joint sealant**

*Delete the third paragraph and substitute with the following:*

"(iii) Silicone-based joint sealants shall comply with the requirements of subclauses 7102(e)(iii) and 7102(e)(iv)."

**B2304 CONSTRUCTION**

**Excavation and preparation of bedding**

*Replace the heading of subclause B2304(a)(i) with the following:*



"(i) Kerbs, channels and edge beams"

### **Prefabricated concrete kerbing and channeling**

*Add the following:*

"A 10 mm wide joint formed in inert filler shall be provided every 20 m through the kerbing and channelling. The colour of the filler shall match the colour of the kerbing.

Curved kerbing of radius less than 1,0 m shall be cast in situ. Units for curved kerbing of radius greater than 1,0 m up to 4,0 m shall be of nominal length 0,3 m. Units for curved kerbing of radius greater than 4,0 m up to 20 m shall be of nominal length 0,5 m. Units for radius exceeding 20 m shall be of nominal length 1,0 m. Any associated channelling shall also comply with the above requirements."

### **Cast in situ kerbs and channels**

*Add the following:*

"Cast in situ kerbs, channels and edge beams shall be provided with a contraction joint every 2,0 m and an expansion joint every 20 m. The contact area of the contraction joint shall be painted with two (2) coats of bitumen. Alternatively, joints may be cut and finished to a depth of 50 mm. The expansion joint shall consist of 12 mm thick Flexcell or an approved equivalent placed between adjoining concrete sections. The top part of the joint shall be sealed with a 12 mm x 12 mm silicone sealant. All joints shall be provided for the full depth of the concrete."

### **Concrete-lined open drains**

*Add the following:*

"When instructed by the Employer's Agent, the surfaces on which concrete lining is to be cast shall be sprayed with invert bituminous emulsion as soon as possible after the excavations have been trimmed. The sprayed surfaces shall be maintained until the concrete lining is cast. The nominal rate of application of the emulsion shall be 0,5 litre/m<sup>2</sup> unless otherwise instructed by the Employer's Agent. The tolerance in the rate of application shall be  $\pm 5\%$  of the specified rate."

### **Construction sequence**

*Add the following:*

"(iv) Where concrete edge beams are constructed at intersection areas and access points.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The specifications for subclauses B2304(a)(i), B2304(a)(ii) and B2304(a)(iii) shall apply mutatis mutandis to edge beams."

**Cutting existing bituminous surfacing and pavement layers**

*Replace the paragraph with the following:*

"Where the Employer's Agent instructs kerbing, edge beams, channelling or concrete-lined drains to be constructed against existing bituminous surfacing and pavement layers, the full depth of the bituminous surfacing and pavement layers shall be accurately cut with a mechanical saw to the required line and level before the kerbing, edge beams, channelling or concrete-lined drain is constructed. The cut edge shall be vertical for kerbing, edge beams, concrete-lined drains and channelling. The concrete shall be placed directly against the cut edge without formwork. All material outside the cut edge shall be removed to the required depth before the concrete is placed, and the debris shall be disposed of at approved dumping sites provided by the Contractor. The bituminous surfacing shall be protected and kept clean to the Employer's Agent's satisfaction."

**RDP1(E)** *Add the following subclauses:*

**"(I) Demolition of existing concrete-lined drains, kerbs and channels**

Where shown on the drawings and/or indicated by the Employer's Agent, the existing kerb and channel and concrete-lined drains shall be demolished to a specified maximum size, removed and transported to an approved site as provided by the Contractor."

**B2307 MEASUREMENT AND PAYMENT**

*Replace the description of payment item 23.01 with the following:*

<b>"Item</b>	<b>Unit</b>
<b>B23.01</b> <b>Concrete kerbing, including joints</b> ( <i>class of concrete indicated for in situ concrete</i> ) .....	metre (m)"

*Add the following to the payment paragraph:*

"The tendered rates shall also include full compensation for the construction of expansion and contraction joints as specified."

**SECTION 3100: BORROW MATERIALS**

**B3103 OBTAINING BORROW MATERIALS**

*Add the following new paragraph:*

"The Contractor shall adhere to the requirements within the environmental management plan for the preparation of the area to be utilised as a borrow pit. This shall include the removal and storage of the topsoil within the affected area, maintenance of the area during use and the rehabilitation of the area to its natural state on completion. A photographic record shall be kept of all borrow pit areas. Any construction material spoiled within these sites shall be buried to a depth of no less than 300 mm below the surface soil. No construction material of any nature shall be left visible after topsoiling. The Employer's Agent shall confirm this before grassing commences."

**B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS**

*Add the following:*

"After initial shaping has been undertaken, all excess overburden removed at borrow pits shall be replaced in an even layer over the entire area of the borrow pit. Payment for this requirement shall be deemed to be included in payment item B31.01."

**Removing topsoil**

*Add the following:*

"The topsoil shall not be stockpiled for longer than five (5) months, nor shall the stockpile be higher than 1,0 m."

**Excess overburden**

*Add the following:*

"In the case of quarries and borrow pits, suitable overburden shall be used as fill. The Contractor must plan his operations accordingly as no payment will be made for stockpiling."

**Excavating borrow material**

*Add the following:*

"The Contractor shall at all times ensure that the removal of the material is carried out in such a manner that the stability of the exposed faces is not prejudiced, and safe working conditions are maintained."

### **B3105 FINISHING-OFF BORROW AREAS AND HAUL ROADS**

#### **Borrow areas**

*Add the following after the fourth paragraph:*

"The finishing-off of the borrow areas shall also be in accordance with the approved environmental Management Plan."

### **B3108 MEASUREMENT AND PAYMENT**

#### **Notes:**

Borrow material

*Add the following after the second paragraph of this subclause:*

"The tendered rate shall include full compensation for all monies payable and all expenses incurred by the Contractor for the acquisition of material for the proper completion of the Works, irrespective of whether the material is obtained from borrow pits identified by the Employer, from commercial sources or provided by the Contractor himself."

**SECTION 3300: MASS EARTHWORKS**

**B3301**

*Add to Clause 3301 the following:*

The Contractor shall note the restricted nature of the earthworks in general, and where the widening of existing cuts and fills are required in particular. No extra over rates for widening of cuts, widening of fills or for working in restricted areas shall be applicable to this Contract.

**B3303 CLASSIFICATION OF CUT AND BORROW**

All material excavated from the existing road prism shall be classified as soft material. No additional payment will be made for other classes of material excavated from the road prism.

- (a) Classes of excavation

*Add to Sub-clause 3303(a) the following:*

Cut material for fills will, apart from natural in-situ material, also consist of existing fill and pavement layers from the existing road. Excavation from existing fill and pavement layers varies in depth, but no distinction is made between this excavation and excavation in other materials, except for classification as soft, intermediate and hard materials.

Payment items 33.14 and 33.15 will not apply on this Contract.

**B3306 CUT AND BORROW**

- (a) Dimensions of Cuts

Delete the third paragraph from Clause 3306(a), apart from the first sentence thereof.

*Add the following:*

Cut and borrow to fill will be measured under Item 33.01. The Contractor shall take note of the nature of the earthworks alongside the existing road. No extra over payments will be made in respect of the nature of the site or due to the dimensions of a particular cutting.

**B3307 FILLS**

**a) General**

*Add the following:*

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

"Where existing embankments are to be widened, or where new embankments are to be constructed adjacent to existing embankments, the existing side slopes shall be benched as specified in subclause 3307(d) and in accordance with the details on the drawings.

In addition, the material in the fill widening shall, unless otherwise instructed by the engineer, be compacted as follows:

(i) where the thickness exceeds 1,5 m, it shall be compacted to a minimum of 93% modified AASHTO density to a depth of at least 1,5 m below the final road level; or

(ii) where the thickness is less than 1,5 m, the in-situ roadbed and fill material shall be compacted to 93% modified AASHTO density."

**d) Benching**

*Replace the first sentence of the second paragraph with the following:*

"The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be as indicated on the drawings or indicated by the engineer."

*Add the following after the second paragraph:*

"In order to obtain sufficient working width for road-building equipment when the existing road fill is widened, it may be necessary to form benches that extend beyond the normal road prism or to cut back into the existing road fill or both. The contractor shall submit his proposals in this regard to the engineer for approval before proceeding with such work. The contractor will be paid in accordance with the relevant payment items for work required to obtain a working width of up to 4 m. Additional work required to provide a working width in excess of 4 m shall be at the contractor's expense."

(i) Widening of fills

In the eight paragraph of Sub-clause 3307(i), delete the sentence "An extra over payment for the widening of existing fills will apply under Item 13.16."

*Add the following:*

No extra over payments will be made in respect of the nature of the site or due to the dimensions of the fills being widened or constructed.

**B3312 MEASUREMENT AND PAYMENT**

General directions

Delete Note (3) Work in Restricted Areas and replace with the following:

On this Contract, no extra over payment will be made due to the nature of the site or the size of the work area available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the Schedule of Quantities.

Amend the payment items under Clause 3312 as follows:

B33.01 In the description of Item 33.01, delete "free-haul up to 0.5 km" and replace with "free-haul up to 1.5 km."

In the fifth paragraph, referring to the tendered rates, delete the words "free-haul distance of 0.5 km" and replace with "free-haul distance of 1.5 km."

Also in the fifth paragraph, after the words "the cutting of benches" insert the words "including benches in existing fill slopes to be widened."

B33.02 In the description of Item 33.02, delete "free-haul up to 0.5 km" and replace with "free-haul up to 2.0 km."

In the final paragraph delete "0.5 km free-haul" and replace with "2.0 km free-haul."

B33.04 In the description of Item 33.04, delete "free-haul up to 0.5 km" and replace with "free-haul up to 1.5 km."

In the fourth paragraph delete "free-haul distance of 0.5 km" and replace with "free-haul distance of 2.0 km."

**B33.20 FILL CONSTRUCTED WITH MATERIAL OBTAINED FROM COMMERCIAL SOURCES OR SOURCES PROVIDED BY THE CONTRACTOR, INCLUDING ALL HAUL**

(a) Gravel material in compacted layer thicknesses of 200 mm and less:

(i) Compacted to 93% of modified AASHTO density cubic metre (m<sup>3</sup>)

The unit of measurement is the cubic metre of material measured in the compacted fill. The quantity measured shall be calculated by the method of average end areas from levelled cross-sections prepared from the ground line after clearing and grubbing and the removal of topsoil and the completion of any preparatory roadbed treatment which may have been ordered by the engineer, but prior to the construction of the fill, and the final specified or authorised fill cross-section superimposed at 20 m intervals along the centre line of the road. All measurement shall be neat and no payment will be made for that part of the fill placed in excess of the authorised cross-section shown on the drawings or instructed by the engineer, irrespective of the tolerances in workmanship allowed under the contract. Where the roadbed has subsided under the fills, the

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

quantities shall be adjusted to make allowance for such subsidence, as set out in the note at the beginning of clause 3312. Measurement of fill shall distinguish between the alternative methods of processing and compacting.

Where measurement by cross-sections is considered by the engineer to be impractical, the compacted volume of the material may be taken as equal to 70% of the loose volume of material in the hauling vehicles as an alternative method of measurement.

The tendered rates shall include full compensation for the costs of negotiations and payment of royalties, for procuring, furnishing and transporting the materials over an unlimited free-haul distance from the sources to the site, for placing, preparing, processing, shaping, watering, mixing and compacting the materials to the densities or in the manner specified, and for removing and disposing of all oversize material from the road after processing, including transport for the haul distance to approved dumping sites provided by the contractor.

Payment shall distinguish between the various methods of processing and compacting specified, as itemised above.



**SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL****B3402 MATERIALS****a) General**

*Add the following at the end of the second paragraph:*

"For chemically stabilised layers the material shall conform to the requirements in table B3402/5."

For cold in situ recycled layers the target grading shall be as indicated in table B3402/7"

*Add the following after the second paragraph:*

"Distinction shall be made between crushed and natural G4, G5 and G6 materials. Where the crushing and/or screening of these materials has been specified, the combined grading shall conform to the grading limits specified for G4 class material in Table B3402/1.

The same shall apply for all materials obtained from commercial sources."

*Replace the grading section in Table 3402/1 with:*

Grading	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			The percentage by mass passing the 2,00mm sieve shall not be less than 20% not more than 70%
		Crushed material		Uncrushed material	
		Nominal max size			
		37,5 mm	26,5 mm		
	53			100	
	50			95 – 100	
	37.5	100		85 – 100	
	28	86 - 95			
	20	73 - 86	87 - 96	61 – 91	
	14	61 - 76	73 – 86		
	5	37 - 54	43 - 61	31 – 66	
	2	23 - 40	27 – 45	20 – 50	
	0.425	11 - 24	13 – 27	10 – 30	
	0.075	4 - 12	5 - 12	5 – 15	

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 3402/5 with:

**"TABLE B3402/5: REQUIREMENTS FOR CHEMICALLY STABILISED LAYERS**

Classification	C1	C2	C3	C4
Material before treatment	At least G2 quality	At least G4 quality	At least G5 quality	At least G6 quality
PI after treatment	Non-plastic	Non-plastic	6 max. *(1)	6 max. *(1)
UCS (MPa) *(2)	6 min.	4 min.	1,5 min	0,75 min.
ITS (kPa) *(3)	-	-	250 min.	200 min.
WDD (% loss)	5 max.	10 max.	20 max.	30 max.

### **Compaction requirements**

*Change the compaction requirements for stabilized subbases to read as follows:*

"96% and 97% as required for lower subbase and upper subbase respectively, for chemically stabilized material."

*Add the following subclause:*

#### **"(d) Material requirements**

When the values listed in Tables 3402/1, 3402/2, 3402/3 and 3402/4 cannot be attained with the type and quantity of stabilizing agent specified in Section 3500 in the project specifications and on the borrow-pit plans, the Employer's Agent will authorise the Contractor to vary and/or amend the quantity and possibly also the type of stabilizing agent in order to obtain the required values."

### **B3406 QUALITY OF MATERIALS AND WORKMANSHIP**

*Replace the second paragraph with the following:*

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

### **B3407 MEASUREMENT AND PAYMENT**

*Add the following to the first paragraph:*

No additional or extra over payment will be made where the formation is widened and work is executed in restricted areas in the construction of the sub grade, selected layers, sub base, base and shoulders.

#### **B34.06 Extra over item 34.04 for adding extra material as specified in subclause 3207(b)(iii)**

*Replace the second paragraph with the following*

The tendered rate shall include full compensation for procuring and adding the material to the in-situ broken down pavement layer including temporary blading to windrow, stockpiling, excavating material in existing pavement layers (including in restricted areas), placing and compacting of gravel. The tendered rate shall include full compensation for all costs for placing and compacting the material in restricted areas.

## **SECTION B3500: STABILIZATION**

### **B3501 SCOPE**

*Add the following paragraph:*

"The Contractor shall take and submit samples of materials and/or mixtures to the Employer's Agent who must approve the stabilization mix designs before construction work can commence."

### **B3502 MATERIALS**

#### **a) Chemical stabilizing agents**

*Delete sub-clauses (ii) Ordinary Portland cement and (iii) Portland blast-furnace cement and replace with the following:*

"Cement shall comply with the relevant requirements of SANS 50197-1:2000. The use of strength classes greater than 32,5 shall not be permitted.

On this contract CEM II (B-L) 32.5 shall be used for stabilization purposes."

The nominal rate of application for tender purposes as a percentage of the mass of the material to be stabilized and compacted to the required modified AASHTO density shall be as follows:

Upper subbase: 2,5%

Lower subbase: 2,5%

The Employer's Agent may instruct the Contractor to amend the percentage and possibly the type of stabilizing agent if necessary, after tests on the Site during construction.

#### **(e) Water**

*Insert the following in the first sentence after the word "emulsions":*

"... and/or production of foam bitumen..."

### **B3503 CHEMICAL STABILIZATION**

#### **a) Preparing the layer**

*Insert the following before the first paragraph:*

"Moisture content tests shall not be undertaken more than one day in advance of in situ stabilization operations. Care shall be taken to ensure that samples are representative of the in-situ material. Checks shall be conducted when wet weather occurs between initial testing and work commencing on any section."

*Add the following:*

"The material to be stabilized shall be spread and pre-shaped, so that a true cross fall is obtained. The upper level of the spread material shall be such that any indentations and depressions caused by construction equipment shall be above or at final cutting level. Enough extra material must be allowed for, so that no filling whatsoever is carried out. The final operation on the base prior to final compaction will be cutting and never making up of levels."

#### **b) Applying the stabilizing agent**

*Add the following to the first paragraph:*

"The Contractor's spreading method must be submitted to and approved by the Employer's Agent before any spreading can take place."

*Replace the second sentence of the second paragraph with the following:*

"Spreading shall only commence when the engineer is satisfied that the correct quantity of stabilizing agent has been placed on the layer and has given permission that the stabilizing agent may be spread uniformly over the entire surface to be treated."

#### **h) Curing the stabilized work**

*Add the following to method (ii):*

"The covering material shall be placed by end-tipping, spread, and not compacted until the underlying layer has cured for at least 7 days."

*Add the following to paragraph:*

"Method (iii) and (iv) shall not be applicable."

#### **i) Construction limitations**

*Replace the fourth paragraph starting with "No stabilization ..." with the following:*

"No stabilization shall be done during windy conditions, wet weather or with falling air temperatures (7°C and dropping), or during rising air temperatures (when the air temperature is below 3°C).

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The contractor shall be responsible for taking the necessary precautions to prevent the layer from freezing.

All stabilized layers damaged by rain, frost or by the formation of ice in the layer shall be removed and replaced by the contractor at his own expense.

The contractor shall make allowance for these requirements in his construction programme."

*In Table 3503/1, delete "8 hours" for Ordinary Portland cements and cement blends and replace with "4 hours".*

*Add the following subclauses:*

#### **"(j) General**

The Contractor shall at all times supply all workers exposed to chemical stabilizing or modifying agents with approved protective apparel, eyewear and masks. No person without such apparel, eyewear and masks may be permitted to work with or be exposed to the chemical agents. Precautionary measures shall also be taken to ensure that any livestock and the public will not be exposed to the chemical agents, for instance when they are carried by the wind.

Any biscuit layers or bowls, identified by the hollow sound caused when a chain is dragged over the stabilized layer, shall be removed and repaired prior to surfacing. The repairs shall be for the account of the Contractor. Before surfacing is allowed, ball penetration tests shall be carried out.

#### **Stabilization agent application rate**

At least three (3) weeks before start of stabilization the Contractor shall submit samples of proposed subbase material and stabilization agent for the Employer's Agent's approval and strength design testing. Testing will be undertaken at the Contractor's expense in order to determine the optimal application rate to achieve the specified strength.

## **Rejection**

A stabilized layer that has failed or has been rejected shall be removed and reconstructed with fresh material."

### **B3509 QUALITY OF MATERIALS AND WORKMANSHIP**

*Add the following after the second paragraph:*

"The test results and measurements will be judged in accordance with the provisions of Section 8200.

*Add the following paragraphs:*

"The engineer shall be notified in good time to enable him to conduct tests himself.

Sample preparation and testing for cement stabilization testing shall be done by means of the Rapid Cure Method as described in clause B8110.

The stabilized material sampled from the layer for the compaction of modified AASHTO briquettes, shall be prepared according to SANS 3001; GR54; i.e. discard material coarser than a 37,5 mm test sieve, and compacted according to SANS 3001; GR31.

Any delamination of the completed layer (biscuiting), identified by the hollow sound caused when a chain is dragged over the stabilized layer, shall be removed and repaired prior to the construction of subsequent layers. The repair method shall be approved by the engineer. No payment will be made for repairs.

### **B3510 MEASUREMENT AND PAYMENT**

*Replace the first paragraph with the following:*

"No additional or extra over payment shall be made for stabilization work in restricted or confined areas."

#### **Item**

#### **Unit**

#### **B35.02 Chemical stabilizing agent**

*Replace the full stop at the end of the third paragraph with the following:*

" and layer dimensions."

*Replace the third paragraph with the following:*

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

"Subject to the provisions of clause 1220, the quantity of stabilizer will be determined in accordance with the authorised rate of application and layer dimensions. Extra stabilizer added for wastage and higher pre-shaping levels will not be included in the quantity."

**SECTION 3600: CRUSHED STONE BASE OR SUBBASE****B3602: Materials****(a) Requirements for crushed aggregates**

In Table 3602/1, for G1 type of material, amend the compaction requirement at the bottom of the table to read:

**"Minimum of 86% of apparent relative density"**

B3607: Quality of Material and Workmanship

"Test results and measurements shall be assessed in terms of Section 8300 of the COLTO Standard Specifications."

**B3608: Measurement and Payment**

Amend the description of the following item to read as follows:

<u>Item</u>	<u>Unit</u>
B36.01	Crushed-stone base:
(a) Constructed from type G1 material obtained from commercial sources and compacted to 86% apparent relative density (layer thickness indicated)	cubic meter (m <sup>3</sup> )

<u>Item</u>	<u>Unit</u>
B36.02	Additional Compaction
Extra over subitems 36.01(a) and (b) for compaction to 88% of apparent relative density	cubic meter (m <sup>3</sup> )

## **SECTION 4100: PRIME COAT**

### **B4102 MATERIALS**

#### **Priming material**

*Add the following:*

"The Contractor shall note that no tar-based products shall be permitted on this Contract.  
The prime coat shall be MC-30 cut-back bitumen."

#### **Aggregate for blinding**

*Add the following:*

"Blinding of the primed surface with aggregate shall only be permitted to facilitate vehicular access to adjoining properties."

### **B4103 EQUIPMENT**

*Add the following before the first paragraph:*

"Before any storage, dilution or spraying operations commence, the Contractor has to provide a safety and security and environmental protection method statement for approval of the Employer's Agent. All personnel involved, including brooming, prime distributor, storage and production yard operators and labour, shall wear the necessary protective clothing. Appropriate fire extinguishers and medical aid devices must be in working order. The Employer's Agent reserves the right to stop the Contractor's operation or order any person from the Site who does not adhere to the above."

### **B4104 WEATHER AND OTHER LIMITATIONS**

*Replace subclause B4104(g) with the following:*

"(g) when any position within the layer the moisture content of a crushed-stone base determined according to TMH1 Method A7 is more than 50% of the optimum moisture content. In the event of rain after priming, the base shall be allowed to dry out to meet the above moisture content requirement prior to surfacing."



**B4106 APPLICATION OF THE PRIME COAT**

*Add the following to subclause B4106(b):*

"The temperature for storage and spraying of prime coat shall be in accordance with the supplier's specification."

*Add the following to subclause B4106(c):*

"The nominal application rate of the prime shall be 0,7 litre/m<sup>2</sup>. Unless directed otherwise by the Employer's Agent or indicated on the drawings, the width of the primed surface shall be 150 mm wider than the edges of the surfacing on each side."

#### **B4108 TOLERANCES**

*Add the following to this clause:*

"Any unauthorised increase outside these limits shall not be paid for. However, the Employer's Agent shall have the right to instruct the Contractor to make up any deficiency or blind any over-application of prime without additional payment. If under-spraying occurs and it is accepted by the Employer's Agent, only the actual quantities applied shall be paid for."

#### **B4109 TESTING**

*Add the following:*

"No payment shall be made if this condition is not adhered to. The Contractor shall provide, at his own cost, representative samples of every batch of prime delivered onto site."

**SECTION 5200: GABIONS****B5202 MATERIALS***Add the following new sub-clause:*

B5202 (g) Concrete

Concrete work shall be carried out in accordance with the provisions of Sections 6200, 6300 and 6400.

**B5204 CONSTRUCTING GABIONS****(a) Assembly***Add to Sub-clause 5204(c) the following:*

Gabion mattresses may be cut and re-joined to form a curved shape, or any other appropriate shape. An extra over rate shall apply when mattresses have to be cut and joined on instruction from the Engineer.

*Add the following new sub-clause:***B5204 (e) Blinding Layer**

Where indicated on the drawings, a blinding layer of 15MPa concrete 75mm thick shall be laid as a surface on which to place the gabions. The surface of the concrete shall be properly compacted and screeded to form a Class U1 surface finish as specified in Clause 6209 of the standard specification.

**B5205 MEASUREMENT AND PAYMENT***Add the following new pay item:*

Item	Unit
<b>B52.05 Concrete Class 15/19 in Blinding Layer</b>	<b>cubic metre (m3)</b>

The unit of measurement shall be the cubic metre of concrete in the blinding layer, constructed to the line and level indicated on the drawing or as instructed by the Engineer.

The tendered rate shall include full compensation for furnishing all material and labour, including formwork as necessary, mixing, placing and compacting the concrete, and screeding to a Class U1 surface finish.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

**B52.06      Extra over Item 52.03(c) for cutting mattresses to suit      cubic metre (m3)**

The tendered rate shall include full compensation for all costs associated with cutting gabion mattresses to the required shape and the rejoined pieces to form sound cages.

## **SECTION 5400: GUARDRAILS**

### **B5402 MATERIALS**

#### **(a) Guard-rails**

*Add to Sub-clause 5402(a) the following:*

All holes in guardrail sections shall be drilled prior to galvanising. The Contractor shall submit SABS test certificates certifying the galvanising complies with the specification.

End treatment will involve the dipping of the last 3 sections of guardrails into the ground as detailed on the drawings.

#### **(b) Guard-rail posts**

*Add to Sub-clause 5402(b) the following:*

##### **‘(i) Timber posts**

New posts shall be supplied with the tops banded to prevent splitting.’

### **B5403 CONSTRUCTION**

#### **(a) Erection**

Add after the fifth paragraph of Sub-clause 5403(a) the following:

The use of soilcrete or concrete to fill the holes will not be permitted.

#### **(b) Painting**

Add the following paragraph to Sub-clause 5403(b):

Where holes have to be drilled in existing guard-rails, on site, to allow for additional posts, the damaged galvanising shall be treated with an approved zinc rich primer and two coats of an approved zinc rich paint.

### **B5404 REQUIREMENTS**

After the first paragraph at the start of Clause 5404, add the following:

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The vertical tolerance to which the completed guardrail shall comply shall be 3 mm. On straights and on curves the completed guard-rail shall not be out of line by more than 10 mm and 15 mm respectively.

## **SECTION 5500: FENCING**

### **B5502 MATERIALS**

#### **(c) Wire**

##### **(i) Barbed wire**

*Delete the contents of Sub-clause 5502(c)(i) and replace with the following:*

Barbed wire shall comply with the requirements of SABS 675 and shall be mild-steel-grade zinc-coated (heavy duty - fully galvanised) double-strand uni-directional-twist wire, each strand 2,5 mm in diameter, for use at any height above ground.

Barbs shall be manufactured from 2,0 mm zinc-coated mild steel wire and shall be spaced at not more than 150 mm.

Barbed wire shall be coloured yellow by a factory painting process integral with the galvanizing process.

##### **(ii) Smooth wire**

*Delete the contents of Sub-clause 5502(c)(ii) and replace with the following:*

Smooth wire shall comply with the requirements of SABS 675 and shall be of the types specified below:

Straining wire shall be 4,0 mm diameter zinc-coated (fully galvanised) high-tensile-grade steel wire.

Fencing wire shall be high-tensile-grade steel 2,24 mm diameter zinc-coated (fully galvanised) wire.

Fencing wire shall be coloured yellow by a factory painting process integral with the galvanizing process.

Tying wire shall be 2,5 mm diameter mild-steel-zinc-coated (heavy duty - fully galvanised) wire for tying fencing wire to standards and droppers and 1,6 mm mild-steel-zinc-coated wire for tying netting and mesh wire to the fencing wire.

**B5511 ERECTING GATES***Add to Clause 5511 the following:*

Where instructed by the Engineer, motor grid gates as per the details shown on the drawings shall be constructed. A rate per motor grid gate shall be tendered as per Payment Item B55.10 below.

**B5514 MEASUREMENT AND PAYMENT****B55.02 Supply and Erect New Fencing Material***Add to this Payment Item the following:*

The tendered rates for all fencing materials shall also include for all costs associated with the factory painting process to produce the required yellow colour.

**SECTION 5600:****ROAD SIGNS****B5602 MATERIALS***Add to Clause 5602 the following:***Concrete**

Concrete for the footings shall comply with the requirements of Section 6400 of the specification.

**B5609 MEASUREMENT AND PAYMENT**

Add the following new pay item.

Item	Unit
B56.10 Danger Plates	
(a) Danger plates at culverts – W401	No
(b) Chevron plates at bridges and other locations – W401	No
Danger/chevron plates will be paid for as specified for item 56.04 (kilometre posts).	
<b>B56.11/64.01</b>	<b>Cast in-situ concrete in footings to signs, Class 15/19</b>
	<b>m<sup>3</sup></b>



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The volume shall be measured according to the dimensions shown on the drawings. The rate shall cover all the costs associated with supplying, mixing and placing the concrete as specified.

## **SECTION 5700: ROAD MARKINGS**

### **B5701 SCOPE**

*Replace "South African Road Traffic Signs Manual" in the second paragraph with:*

"SADC Road Traffic Signs Manual"

*Replace the words "ordinary road-marking paint" with "solvent borne road-marking paint".*

*Replace "BS 3262" with "EN 1436".*

*Replace "Hot melt plastic road marking" with "thermoplastic road marking".*

*After the last paragraph, add the following:*

"Provision is made in the Pricing Schedules for different road-marking materials. The Contractor shall take note that the Employer reserves the right to utilise any, or all, or a combination of any of these road-marking materials at any stage during the construction period. The utilisation of the road-marking materials as indicated cannot be regarded as grounds for any claim by the Contractor."

### **B5702 MATERIALS**

*Insert the following before subclause B5702(a):*

"The selection of appropriate road-marking paint and materials for permanent road markings to ensure conformance with the requirements of this specification rests with the Contractor. Road-marking materials for temporary road markings as clarified in SANS 731-1 shall be equal to or more durable than the road-marking paint specified in subclauses B5702(a)(i) and B5702(a)(ii), provided it meets the specified initial performance criteria. Road-marking materials for permanent road markings as clarified in SANS 731-1 shall be hot-melt thermoplastic or cold plastic equal to or more durable than the plastic road-marking material specified in subclause B5702(a)(iii), provided it meets the specified initial performance criteria. Should the Contractor propose alternative materials for permanent road markings, the onus is on the Contractor to provide the

Employer's Agent with sufficient supporting evidence to assess the extent to which the alternative product(s) meet the requirements of subclause B5702(a)(iii)."

#### **Paint**

Road-marking paint

*Replace subclause B5702(a)(i) with the following:*

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

"Road-marking paint shall be Type 1 as specified in SANS 731-1. Only paint, manufactured in a SANS approved and accredited facility shall be accepted. The no-pick-up time of road-marking paint shall comply with the Type 1 requirement in accordance with SANS 731-1.

The paint shall be delivered at the Site in sealed containers marked in accordance with SANS 731-1.

The viscosity of the paint shall be such that it can be applied without being thinned down."

*Add the following:*

"When measured in accordance with SANS 6261 within a period of two (2) weeks ( $\pm$  one (1) week) after application, the coefficient of retro-reflected luminance, RL, of temporary road markings shall be at least 150 mcd/m<sup>2</sup>.lx for white markings and 100 mcd/m<sup>2</sup>.lx for yellow markings."

**Roadstuds**

*Replace the second sentence with the following:*

"All square roadstuds shall have a footprint of 100 mm x 100 mm and a height of at least 20 mm. Round roadstuds shall be 100 mm in diameter and not less than 20 mm in height.

Only non-metallic products with glass as reflective material shall be used. Shank roadstuds shall be used on the outside slow lane shoulders and only where the pavement layers are appropriate."

*Add the following subclauses:*

**"(c) Retro-reflective beads**

Retro-reflective glass beads shall be applied to the wet paint, thermoplastic and cold plastic.

The beads shall comply with Class A beads in accordance with SANS 51424 (EN 1424), with the following requirements or as approved by the Employer's Agent:

colour: crystal clear  
roundness: > 80%  
size range of: 14 - 200 US Mesh (75 – 1 400 Microns)  
refractive index: > 1,5  
specific gravity:  $\pm$  2,5  
granulometry:

The beads shall be delivered to the Site in sealed bags, marked with the name of the manufacturer, the batch number and an inspection seal of SABS, confirming that the beads form part of a lot tested by SABS and comply with the requirements of SANS 51424 (EN 1424). Alternatively, the Contractor shall at all times

have a SABS certificate on the Site, identifying the batches to which the inspection seals apply and certifying that they have been tested by SANS, and comply with the requirement of SANS 51424 (EN 1424)."

#### **B5704 MECHANICAL EQUIPMENT FOR PAINTING**

*Add the following sentence at the end of the first paragraph:*

"The road-marking machine shall be fitted with a device to guide the operator to the centre of the line to be painted. This device shall be used at all times of operation."

*Add the following:*

"The machine shall always operate in the direction of the traffic when applying lane markings."

#### **B5705 SURFACE PREPARATION**

*Add the following at the end of the second paragraph*

"The onus is on the Contractor to ensure that the surface on which the road markings are to be applied is sufficiently clean and dry to ensure that the quality of the road markings will not be adversely affected. The Contractor is also responsible for protecting roadstuds from being painted over, and the subsequent cleaning thereof if such over-painting did occur. (The cleaning of the roadstuds shall be done in such a manner that the functionality of the roadstuds will not be detrimentally affected by the cleaning agent.)"

*Add the following after the first sentence of the third paragraph:*

"The Employer's Agent may also instruct the Contractor to remove existing road markings by means of sandblasting."

#### **B5706 SETTING OUT THE ROAD MARKINGS**

*Add the following:*

"Where road markings are to be replaced after construction activity, it is essential that all existing road markings be accurately surveyed and referenced before commencement of such construction activities will obliterate the existing road markings. The position of the new road markings shall be reassessed on site by the Employer's Agent before the Contractor commences with the road marking.

For safety purposes, pre-marking of the final road markings shall be done on a daily basis at the end of each working shift for the construction of the final overlays."

## **B5707 APPLYING THE PAINT**

*Insert the following before the first paragraph:*

"The Contractor's establishment on site and general obligation shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be on site or is required to move within the Site."

## **B5708 APPLYING THE RETRO-REFLECTIVE BEADS**

*In the first paragraph, replace the nominal application rate of 0,8 kg/litre with "400 gm/m<sup>2</sup>".*

*Replace the second sentence of first paragraph with the following:*

"The rate of application of the beads shall be such that the coefficient of retro-reflected luminance, RL, specified in subclause B5702(a)(ii), is achieved."

*Delete the second paragraph.*

*Add the following:*

"Beads shall be applied in accordance with SANS 51424."

## **B5709 ROADSTUDS**

*Add the words: "or as instructed by the Employer's Agent" in the first sentence after the words "as shown on the drawings".*

*Add the following:*

"Where applicable, the Contractor shall remove existing roadstuds from the road surface as instructed by the Employer's Agent. Wedges shall be driven in from four sides between the road surface and the roadstud that has to be removed. Where the roadstuds to be removed have been cored into the existing surface the Contractor shall propose an acceptable method of removing the existing studs or rendering them ineffective prior to the replacement thereof. The Contractor shall take the necessary measures to protect the road surface, the Works and the safety of persons when roadstuds are removed."

*Add the following after the second paragraph:*

"The final roadstuds shall be installed immediately after the full length of a particular construction zone has received an overlay. The Contractor will not be permitted to occupy a new construction zone before the final roadstuds for the current construction zone have not been installed."

## **B5710 TOLERANCES**

### **Alignment of markings**

*Add the following paragraphs:*

"When an unbroken line and a broken line are painted alongside each other, the beginning and the end of the unbroken line shall coincide with the beginning of one (1) broken line and the end of another broken line.

When existing lines are repainted, the new markings shall not deviate more than 100 mm in the longitudinal direction or 10 mm in the transverse direction from the existing marking.

The alignment of the roadstuds shall not deviate from the true alignment by more than 10 mm and shall be positioned so that the reflective faces are within 5 degrees of a right angle of the centre line of the road."

## **B5711 GENERAL**

*Insert the following into the last sentence of the last paragraph between "black paint" and "or chemical paint remover":*

", bituminous emulsion, slurry"

*Add the following to the last paragraph:*

"Where black paint is used, it shall be matt."

## **B5712 FAULTY WORKMANSHIP OR MATERIALS**

*Add the following paragraphs:*

"Should less than 95% of the road markings comply with the specified coefficient of retro-reflected luminance when measured in accordance with SANS 6261 at a 5% sample level, the Contractor shall repaint the works at his own cost.

The Contractor shall rectify in an acceptable manner and at his own costs; all markings that do not comply with the specified requirements.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

While work is in progress, tests shall be carried out on materials and/or the quality of work to ensure compliance with the specified requirements. The sampling methods are specified in SANS 731-1. The sampling methods described in TMH5 shall be followed where applicable."

**B5713 PROTECTION**

*Add the following paragraph:*

"Traffic cones shall not be smaller than 750 mm in height and shall be placed on the road not further than 48 m apart. Cones shall not be removed before the paint on the road has hardened to such an extent that it will not be damaged by traffic and the adhesive of the roadstuds has hardened to such an extent that the studs will not turn or become loose. All marks on the road caused by traffic driving over wet paint shall be removed by the Contractor at his own cost."

**B5714 MEASUREMENT AND PAYMENT**

*Add the following note immediately after the heading of clause B5714 Measurement and Payment:*

"Note:

The Contractor shall note that, notwithstanding the fact various payment items indicate that haul, overhaul and all associated items will be paid for separately, this shall not apply to this section."

**SECTION B5900: FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS**

**B5901 SCOPE**

*Add the following:*

"Where reference is made in this section to 'the road and road reserve', this shall also be deemed a reference to 'the Site of the Works.'"

**B5902 FINISHING THE ROAD AND ROAD RESERVE**

**"(a) New construction**

*Replace the sixth paragraph with the following:*

"All materials resulting from the finishing operations shall be disposed of at approved spoil sites provided by the Contractor in accordance with the Environmental Management Plan."

**B5904 MEASUREMENT AND PAYMENT**

*Add the following note directly after the clause heading:*

"Note:

The Contractor shall note that, notwithstanding the fact that various payment items indicate that haul, overhaul and all associated items will be paid for separately, this shall not apply to this section."



## **SECTION B7300: CONCRETE BLOCK PAVING FOR ROADS**

### **B7304 MEASUREMENT AND PAYMENT**

*Add the following before the items:*

"No additional or extra over payment will be made for work in restricted or confined areas."

**"Item Unit**

#### **B73.03 Provision of approved herbicide/fungicide and ant poison:**

*Remove and replace "... ant poison and herbicide and ..." with "... ant poison, herbicide and fungicide and ...".*

*Add the following payment items:*

**"Item Unit**

#### **B73.04 Concrete bollards:**

(a) Standard 250 mm diameter bollard .....number (no)

(b) Standard 150 mm diameter bollard .....number (no)

The unit of measurement shall be the number of concrete bollards installed.

The tendered rate shall include full compensation for the furnishing of all materials and equipment, work in restricted areas and all transport and finishing necessary to install the concrete bollards as indicated on the drawings to the satisfaction of the Employer's Agent.

**"Item Unit**

#### **B73.05**

**Removing and stacking existing all types and sizes of paving  
on restricted areas where NMT facilities are to be  
constructed, including transport where necessary .....m<sup>2</sup>**

The unit of measurement shall be the square metre of paving removed on restricted areas where instructed by the Employer's Representative or where specified on the drawings.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

---

The tendered rate shall include full compensation for all work necessary for removing undesired paving, including transportation, disposing or storage.

## **SECTION 8100: TESTING MATERIALS AND WORKMANSHIP**

*Add the following clause:*

### **“B8118 PROPRIETARY RESINS, GROUTS AND MORTAR**

All proprietary cementitious and epoxy resin, grouts and mortars shall comply with the manufacturer's specifications. The manufacturers or suppliers shall provide recent test reports from an approved laboratory to prove such compliance and shall also provide test certificates of recent tests on the materials.

Cementitious grouts and mortars shall not contain expansive cements or metallic powders such as aluminium or iron filings. The plastic volume change shall fall in the range between zero shrinkage and 4% expansion from the time of placement until final set when tested according to ASTM C 827. Further, the grout shall show no shrinkage and a maximum of 0,2% expansion in the hardened state when tested according to ASTM C 1090.

Epoxy resin grouts and mortars shall show no shrinkage and a maximum 2,0% expansion from the time of placement when tested according to ASTM C 827 (modified). The coefficient of thermal expansion shall not exceed 0,000055/°C when tested according to ASTM C 531.

The manufacturer shall submit to the Engineer samples of the proposed materials together with complete technical details including mixing ratios and times, pot life, setting and curing times, strength, volume change, thermal expansion, creep characteristics etc.

As part of the Contractor's process control in terms of sub-clause 8103(a), testing shall be undertaken on the materials delivered to site to monitor compliance with the manufacturer's specifications. All new batches of materials shall be tested by the Contractor and approved by the Engineer prior to incorporation into the works.

Strength testing shall be undertaken, using 75mm or 100mm cubes, on samples taken from the mixed material actually being used in the work at the time of its use.”

### **C3.3 PARTICULAR SPECIFICATIONS**

In addition to the Standardised and Project Specifications the following Particular Specifications shall apply to this contract and are bound in hereafter.

#### **PART C ENVIRONMENTAL MANAGEMENT SPECIFICATION & PLAN**

#### **PART D DAYWORKS**

#### **PART E OHSA 1993 SAFETY SPECIFICATION**

## **PART C : ENVIRONNEMENTAL MANAGEMENT SPECIFICATION**

# **ENVIRONMENTAL SPECIFICATION FOR CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING**

.

### **1. Method Statements**

The Contractor shall not commence the activity until the Method Statement has been approved and shall, except in the case of emergency activities, allow a period of two weeks for approval of the Method Statement by the Engineer/ECO. Such approval shall not unreasonably be withheld.

The Engineer/ECO may require changes to a Method Statement if the proposal does not comply with the specification or if, in the reasonable opinion of the Engineer/ECO, the proposal may result in, or carries a greater than reasonable risk of, damage to the environment in excess of that permitted by the Specifications.

Approved Method Statements shall be readily available on the site and shall be communicated to all relevant personnel. The Contractor shall carry out the Works in accordance with the approved Method Statement. Approval of the Method Statement shall not absolve the Contractor from any of his obligations or responsibilities in terms of the Contract.

### **2. Environmental Awareness Training**

It is a requirement of this contract that environmental awareness training courses are run for all personnel on site. All employees who spend more than 1 day a week or four days in a month on Site must attend the training. Two types of course shall be run: one for the Contractors and Subcontractors management and the other one for all site staff and labourers. Courses shall be run during normal working hours at a suitable venue provided by the Contractor.

All attendees shall remain for the duration of the course and sign an attendance register that early indicates participant's names on completion, a copy of which shall be handed to the Engineer/ECO. The size of each session shall be limited to the numbers shown in the Project Specification and the Contractor shall allow for sufficient sessions to train all personnel. Subsequent sessions shall be run for any new personnel coming onto site. A Method Statement with respect to the organisation of these courses shall be submitted. Conduct revised training as and when required.

Notwithstanding the specific provisions of this clause it is incumbent upon the Contractor to convey the

sentiments of the EMP to all personnel involved with the works.

**2.1. Training course for management and foremen**

The environmental awareness training course for management shall include all management and foremen. The course, which shall be presented by the Engineer/ECO/EO or his designated representative, is of approximately one-hour duration. The initial course shall be undertaken not more than 7 days prior to commencement of work on site.

**2.2. Training course for site staff and labour**

The environmental awareness training course for site staff and labour shall be presented by the Contractor from material provided by the Engineer/ECO/EO unless otherwise indicated in the Project Specification.

The course is approximately one-hour long. The course shall be run not more than 7 days after commencement of work on site with sufficient sessions to accommodate all available personnel.

**3. Contractor's Environmental Representative**

The Contractor shall appoint an environmental representative (called an Environmental Site Officer) who shall be responsible for undertaking a daily site inspection to monitor compliance with this Specification and the relevant Project Specification. The Contractor shall forward the name of the environmental representative to the Engineer/ECO/EO for his approval seven days prior to the date of the environmental awareness training course. The Contractor's environmental representative shall complete daily Site Inspection Forms and these shall be submitted to the Engineer/ECO/EO once a week.

**4. Site division, demarcation and no go areas**

The Contractor shall restrict all his activities, materials, equipment and personnel to within the area specified. The area of the site shall be fenced where possible.

A Method Statement detailing the layout and method of establishment of the construction camp (including all buildings, hostels, offices, lay down yards, vehicle wash areas, fuel storage areas, batching areas and other infrastructure required for the running of the project) shall be provided.

As required by the Project Specification, the Contractor shall erect and maintain permanent and/ or temporary fences of the type and in the locations directed by the Engineer/ECO/EO. Such fences shall, if

so specified, be erected before undertaking designated activities.

If so required by the Project Specification, certain areas shall be "no go" areas. The Contractor shall ensure that, insofar as he has the authority, no person, machinery, equipment or material enters the "no go" areas at any time.

## **5. Access routes/ haul roads**

On the Site, and, if so required by the Project Specification, within such distance of the Site as may be stated, the Contractor shall control the movement of all vehicles and plant including that of his suppliers so that they remain on designated routes, are distributed so as not to cause an undue concentration of traffic and that all relevant laws are complied with. In addition such vehicles and plant shall be so routed and operated as to minimise disruption to regular users of the routes not on the Site. On gravel or earth roads on Site and within 500m of the Site, the vehicles of the Contractor and his suppliers shall not exceed a speed of 45 km/hr. as far as possible the Contractor shall use existing access and haul routes. Damage to the existing access roads as a result of construction activities shall be repaired to the satisfaction of the Engineer/ECO/EO, using material similar to that originally used. The cost of the repairs shall be borne by the Contractor.

## **6. Construction personnel information posters**

As required by the Project Specification, the Contractor shall erect and maintain information posters for the information of his employees depicting actions to be taken to ensure compliance with aspects of the Specifications. Such posters shall be erected at the eating areas and any other locations specified by the Engineer/ECO/EO.

## **7. Fire control**

No fires may be lit on site. Any fires, which occur, shall be reported to the Engineer/ECO/EO immediately. Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include the workshop and fuel storage areas and any areas where the vegetation or other material is such as to make liable the rapid spread of an initial flame. In terms of the National Environmental Management: Air Quality Act and Community Fire Safety Bylaw, burning is not permitted as a disposal method.

The Contractor shall appoint a Fire Officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed. The Contractor shall forward the name of the Fire Officer to the Engineer/ECO/EO for his approval.

The Contractor shall ensure that there is basic fire-fighting equipment available on Site at all times. This shall include at least rubber beaters when working in urban open spaces and fynbos areas, and at least one fire extinguisher of the appropriate type when welding or other

“hot” activities are undertaken.

1. The Contractor shall ensure that the basic fire-fighting equipment is to the satisfaction of the Local Fire Services.
2. The Contractor shall supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other areas identified by the Engineer/ECO/EO with tested and approved firefighting equipment.
3. Fire and “hot work” shall be restricted to a site approved by the Engineer/ECO/EO.
4. A braai facility may be considered at the discretion of the Engineer/ECO/EO.

## **8. Emergency procedures**

The Contractor shall submit Method Statements to the Engineer/ECO/EO covering the procedures for the following emergencies:

### **i) Fire**

The Contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. The Contractor shall ensure that his employees are aware of the procedure to be followed in the event of a fire.

### **ii) Accidental leaks and spillages**

The Contractor shall ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the Engineer/ECO/EO and telephoning relevant people (from a cellphone) and the relevant authorities. The Contractor shall ensure that the necessary materials and equipment for dealing with spills and leaks is available on Site at all times. Treatment and remediation of the spill areas shall be undertaken to the reasonable satisfaction of the Engineer/ECO/EO.

In the event of a hydrocarbon spill, the source of the spillage shall be isolated, and the spillage contained. The area shall be cordoned off and secured. The Contractor shall ensure that there is always a supply of absorbent material readily available to absorb/ breakdown and where possible is designed to encapsulate minor hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200 l of hydrocarbon liquid spill.

## **9. Safety**

Telephone numbers of emergency services, including the local firefighting service, shall be posted conspicuously in the Contractor's office near the telephone. In the event of an emergency, the Contractor shall contact the emergency call center available for that specific emergency available in the area.



No unauthorized firearms are permitted on Site.

#### **10. Community relations**

If so required by the Project Specification, the Contractor shall erect and maintain information boards in the position, quantity, design and dimensions specified. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the Engineer/ECO/EO

The Contractor shall keep a "Complaints Register" on Site. The Register shall contain all contact details of the person who made the complaint, and information regarding the complaint itself.

#### **11. Protection of natural features**

The Contractor shall not deface, paint, damage or mark of any natural features (e.g. rock formations) situated in or around the Site for survey or other purposes unless agreed beforehand with the Engineer/ECO/EO. Any features affected by the Contractor in contravention of this clause shall be restored/ rehabilitated to the satisfaction of the Engineer/ECO/EO.

The Contractor shall not permit his employees to make use of any natural water sources (e.g. springs, streams, open water bodies) for the purposes of swimming, personal washing and the washing of machinery or clothes.

#### **12. Protection of flora and fauna**

Except to the extent necessary for the carrying out of the Works, flora shall not be removed, damaged or disturbed nor shall any vegetation be planted.

Trapping, poisoning and/ or shooting of animals is strictly forbidden. No domestic pets or livestock are permitted on Site.

Where the use of herbicides, pesticides and other poisonous substances has been specified, the Contractor shall submit a Method Statement.

#### **13. Erosion and sedimentation control**

The Contractor shall take all reasonable measures to limit erosion and sedimentation due to the construction activities and shall, in addition, comply with such detailed measures as may be required by the Project Specification. Where erosion and/or sedimentation, whether on or off the

Site, occurs despite the Contractor complying with the foregoing, rectification shall be carried out in accordance with details specified by the Engineer/ECO/EO. Where erosion and/or sedimentation occur due to the fault of the Contractor, rectification shall be carried out to the reasonable requirements of the Engineer/ECO/EO.

Any runnels or erosion channels developed during the construction period or during the vegetation establishment period shall be backfilled and compacted, and the areas restored to a proper condition. Stabilisation of cleared areas to prevent and control erosion shall be actively managed. The method of stabilization shall be determined in consultation with the Engineer/ECO/EO.

#### **14. Aesthetics**

The Contractor shall take reasonable measures to ensure that construction activities do not have an unreasonable impact on the aesthetics of the area

#### **15. Recreation**

If so required by the Project Specification, the Contractor shall take measures to reduce disruption to recreational users of the area abutting the Site.

#### **16. Temporary site closure**

If the Site is closed for a period exceeding one week, the Contractor in consultation with the Engineer/ECO/EO shall carry out the checklist procedure required by the Project Specification. In the event of temporary site closure the Contractor's Safety Officers (as defined by the Occupational Health and Safety Act) shall check the site, ensure that the conditions contained in the Detailed Specification.

#### **17. TOLERANCES**

Environmental management is concerned not only with the final results of the Contractor's operations to carry out the Works but also with the control of how those operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standard of the day-to-day operations required to complete the Works.

It is thus required that the Contractor shall comply with the environmental requirements on an ongoing basis and any failure on his part to do so will entitle the Engineer/ECO/EO to certify the imposition of a fine

Subject to the details set out in the Project Specification.

## **CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING**

---

### **PART D: DAYWORKS**

This part of the Project Specifications deals with the provision for Dayworks in the Bill of Quantities. Rates for Dayworks shall be entered in Dayworks Schedule of the Bill of Quantities in accordance with the following specifications.

#### **D. 1 SCOPE**

According to clause 6.5 of the general conditions of contract for construction works (GCC) 2015 edition, certain work may be carried out using rates tendered in the daywork schedule. A schedule of personnel, plant and equipment which may be necessary to perform work on a daywork basis is included in the schedule of quantities. The quantities used in the schedule are for tender evaluation purposes only and the use or not of these items shall not constitute a variation in terms of Clause 6.4 of the General Conditions of Contract 2015 edition.

No work will be paid for as Dayworks without the written instruction or approval of the Engineer.

#### **D. 2 TYPE OF WORK**

The Engineer may order daywork in certain cases where it is necessary to vary or to extend the works due to new or unforeseen circumstances to such an extent that the tendered rates for specific items of work are no longer applicable, or where no suitable combination of tendered rates can be used to pay for such work.

As a general rule, applicable rates for additional work items will be agreed between the Contractor and the Engineer. Dayworks will only be used in exceptional circumstances.

#### **D. 3 MATERIALS**

Materials for use in works carried out under Daywork shall be purchased by the Contractor who shall also arrange for delivery to site, and shall be responsible for any other requirements associated with specific materials. A Provisional Sum has been allowed in Dayworks Schedule for Daywork materials. The Contractor shall enter a tendered percentage in the schedule to cover his handling costs and profit, as per other provisional and prime cost sums in this Contract.

Materials shall be paid for using the method described in the Pricing Data. No contract price adjustment will be applicable to materials.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Contractor shall submit proof of ownership for any materials used in Dayworks with his dayworks claim to the Engineer. Further, if specific materials are required for Dayworks, quotations will be called for as per Clause 6.5.2 of the General Conditions of Contract 2015 edition.

**D. 4 CONSTRUCTION PLANT HIRE**

Where daywork is ordered, the tendered rates for plant hire in Schedule D shall be used in calculating the payment due for any plant required to execute the daywork. If no rate is included in the schedule for a particular piece of equipment, and where no other rate or combination of rates would provide suitable compensation, then the daywork method of payment described in Clause 6.5.1.3 of the General Conditions of Contract 2015 edition will be used.

The tendered rates for each item of constructional plant shall include for all operating costs associated with the said item of plant. Such costs are deemed to include fuel, re-fuelling costs, lubrication and routine servicing / maintenance, breakdowns and spares, all overhead costs, site management costs and administration costs. The tendered rates shall also include the plant operator and the general supervision of the plant while it is engaged in the dayworks.

**D. 5 SALARIES AND WAGES OF WORKMEN**

The salaries and wages of workmen executing daywork shall be paid for using the tendered rates in Schedule D. The tendered rates shall include for all costs associated with the employment of personnel, including salaries, wages, allowances, workmen's compensation, medical aid and pension contributions, government levies and taxes, training costs and any costs associated with living on the site. The tendered rates shall also include for the transportation of the workmen to the site of the dayworks.

All overhead costs, administration costs, site management costs and the Contractor's profit are deemed to be covered by the Dayworks rates and no additions or mark ups will be made to the tendered rates.

The tendered rates shall also include any hand tools normally associated with the workmen's job description e.g. picks, shovels, hammers, saws, spirit levels, etc. The tendered rate for labourers shall also include for the casual supervision by a gang boss or foreman. Only when specifically called for by the Engineer, will payment be made for the use of a gang boss or foreman supervising on a continuous basis.

## **D. 6 MEASUREMENT AND PAYMENT**

The following principles shall also apply to the measurement and payment of Dayworks.

The unit of measurement for plant shall be the number of vibroclock hours worked and each item of plant shall be fitted with a vibroclock, the cost of which shall be included in the rates. Excessive non-productive time when the engine is idling will not be paid for. Where there is ambiguity between the flywheel horsepower and mass of the machine, the flywheel horsepower shall govern the measurement category. Where width and mass are specified, mass shall govern the measurement category.

The Contractor's attention is drawn to the requirements of Sub-clauses 6.5.3 and 6.5.4 of the General Condition of Contract 2015 with regard to the submission of Dayworks claims.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**C3.4.3 PROJECT SPECIFICATIONS: ADDITIONAL SPECIFICATIONS**

**CONTENTS**

C3.4.3.1 REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS

C3.4.3.2 ENVIRONMENTAL MANAGEMENT PLAN

C3.4.3.3 PROVISION OF STRUCTURED TRAINING

C3.4.3.4 REQUIREMENTS OF EXTENDED PUBLIC WORKS PROGRAMME

### **C3.4.3.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993: HEALTH AND SAFETY SPECIFICATION**

#### **CONTENTS**

C3.4.3.1.1	INTRODUCTION
C3.4.3.1.2	SCOPE
C3.4.3.1.3	GENERAL OCCUPATIONAL HEALTH AND SAFETY PROVISIONS
C3.4.3.1.4	OPERATIONAL CONTROL

ANNEXURE 1:	MEASURING INJURY EXPERIENCE
ANNEXURE 2:	EXECUTIVE SHE RISK MANAGEMENT REPORT
ANNEXURE 3:	LIST OF RISK ASSESSMENTS

#### **Introduction**

In terms of the Construction Regulation 4(1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, The Municipality, as the Client, is required to compile a Health & Safety Specification for any intended project and provide such specification to any prospective tenderer.

The Client's further duties are as in C3.5.1.3.1.1. below and in the Construction Regulations, 2003.

This specification has as objective to ensure that Principal Contractors entering into a Contract with the Municipality achieve an acceptable level of OH&S performance. This document forms an integral part of the Contract and Principal and other Contractors should make it part of any Contracts that they may have with Contractors and/or Suppliers.

Compliance with this document does not absolve the Principal Contractor from complying with minimum legal requirements and the Principal Contractor remains responsible for the health & safety of his employees and those of his Mandataries.

#### **Scope**

Development of a health & safety specification that addresses all aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that Principal Contractors and other Contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**General Occupational Health & Safety Provisions**

(a) Hazard Identification & Risk Assessment (Construction Regulation 7)

(i) Risk Assessments

Annexure 3 contains a list of Risk Assessment headings that have been identified by the Municipality as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is offered as an assistance to Contractors intending to tender.

(ii) Development of Risk Assessments

Every Principal Contractor performing Construction work shall, before the commencement of any Construction work or work associated with the aforesaid Construction work and during such work, cause a Risk Assessment to be performed by a competent person, appointed in writing, and the Risk Assessment shall form part of the OH&S Plan and be implemented and maintained as contemplated in Construction regulation 5(1).

The Risk Assessment shall include, at least:

- the identification of the risks and hazards to which persons may be exposed to
- the analysis and evaluation of the risks and hazards identified
- a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified
- a monitoring plan and
- a review plans

Based on the Risk Assessments, the Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the OH&S aspects of the construction.

The Risk Assessments, together with the site-specific OH&S rules must be submitted to the Municipality before mobilisation on site commences.

Despite the Risk Assessments listed in Annexure 7, the Principal Contractor is required to conduct a baseline Risk Assessment and the aforesaid listed Risk Assessments must be incorporated into the base-line Risk Assessment. The baseline Risk Assessment must further include the Standard Working procedures (SWP) and the applicable Method Statements based on the Risk Assessments

All out-of-scope work must be associated with a Risk Assessment.

(iii) Review of Risk Assessments

The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the Contract work develops and



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client, other Contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated in above.

**(b) Legal Requirements**

All Contractors entering into a Contract with the Municipality shall, as a minimum, comply with the

- Occupational Health & Safety Act and Regulations (Act 85 of 1993). A current, up-to-date copy of the OHS Act must be available on site at all times
- Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993). The principal Contractor will be required to submit a letter of Registration and “good-standing” from the Compensation Insurer before being awarded the Contract. A current, up-to-date copy of the COID Act must be available on site at all times.
- Where work is being carried out on mines’ premises the Contractor will have to comply with the Mine Health & Safety Act and Regulations (Act. 29 of 1996) and any other OH&S requirements that the mine may specify. A current, up-to-date copy of the OHS Act must be available on site at all times.

**(c) Structure and Responsibilities**

**(i) Overall Supervision and Responsibility for OH&S**

- \* It is a requirement that the Principal Contractor, when he appoints Contractors (Sub-contractors) in terms of Construction Regulations 5(3), (5), (9), (10) and (12) he includes an OHS Act Section 37(2) agreement: “Agreement with Mandatary” in his agreement with such Contractors.
- \* Any OH&S Act (85/1993), Section 16(2) appointee/s as detailed in his/her/their respective appointment forms

**(ii) Further (Specific) Supervision Responsibilities for OH&S**

The Contractor shall appoint designated competent employees and/or other competent persons as required by the Act and Regulations. Below is a list of identified appointments and may be used to select the appropriate appointments for the current contract:

**Ref. Section/Regulation in OHS Act**

Batch Plant Supervisor	(Construction Regulation 6(1))
Construction Vehicles/Mobile Plant/Machinery Supervisor	(Construction Regulation 21)
Demolition Supervisor	(Construction Regulation 12)
Drivers/Operators of Construction Vehicles/Plant	(Construction Regulation 21)

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Electrical Installation and Appliances Inspector	(Construction Regulation 22)
Emergency/Security/Fire Coordinator	(Construction Regulation 27)
Excavation Supervisor	(Construction Regulation 11)
Explosive Powered Tool Supervisor	(Construction Regulation 19)
Fall Protection Supervisor	(Construction Regulation 8)
First Aider	(General Safety Regulation 3)
Fire Equipment Inspector	(Construction Regulation 27)
Formwork & Support work Supervisor	(Construction Regulation 10)
Hazardous Chemical Substances Supervisor	(HCS Regulations)
Incident Investigator	(General Admin Regulation 29)
Ladder Inspector	(General Safety Regulation 13A)
Lifting Equipment Inspector	(Construction Regulation 20)
Materials Hoist Inspector	(Construction Regulation 17)
OH&S Committee	(OHS Act Section 19)
OH&S Officer	(Construction Regulation 6(6))
OH&S Representatives	(OHS Act Section 17)
Person Responsible for Machinery	(General Machinery Regulation 2)
Scaffolding Supervisor	(Construction Regulation 14)
Stacking & Storage Supervisor	(Construction Regulation 26)
Structures Supervisor	(Construction Regulation 9)
Suspended Platform Supervisor	(Construction Regulation 15)
Tunnelling Supervisor	(Construction Regulation 13)
Vessels under Pressure Supervisor	(Vessels under Pressure Regulations)
Working on/next to Water Supervisor	(Construction Regulation 24)
Welding Supervisor	(General Safety Regulation 9)

The appointments must be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information must be communicated and agreed with the appointees.

Copies of appointments must be submitted to the Municipality together with concise CV's of the appointees. All appointments must be officially approved by the Municipality. Any changes in appointees or appointments must be communicated to the Municipality forthwith.

The Principal Contractor must, furthermore, provide the Municipality with an organogram of all Contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

Where necessary, or when instructed by the Municipality or an Inspector of the Department of Labour, the Principal Contractor must appoint a competent OH&S Officer subject to the approval of the Municipality

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

In addition, the Municipality may require that a Traffic Safety Officer be appointed for any project.

**(iii) Designation of OH&S Representatives (Section 18 of the OHS Act)**

Where the Principal Contractor employs more than 20 persons (including the employees of other Contractors (sub-contractors) he has to appoint one OH&S Representatives for every 50 employees or part thereof. General Administrative Regulation 6 requires that the appointment OR election and subsequent designation of the OH&S Representatives are executed in consultation with Employee Representatives or Employees. (Section 17 of the Act and General Administrative Regulation 6. & 7.)

OH&S Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

**(iv) Duties and Functions of the OH&S Representatives (Section 19 of the OHS Act)**

The Principal Contractor must ensure that the designated OH&S Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor

OH&S representatives must be included in accident/incident investigations

OH&S representatives must attend all OH&S committee meetings.

**(v) Appointment of OH&S Committee (Section 20 of the OHS Act)**

The Principal Contractor must establish an OH&S Committee consisting of all the designated OH&S Representatives together with a number of management representatives that are not allowed to exceed the number of OH&S representatives on the committee and a representative of the Client who shall act as the chairman without a vote. The members of the OH&S committee must be appointed in writing.

The OH&S Committee must meet minimum monthly and consider, at least, the following Agenda:

1. Opening & Welcome
2. Present/Apologies/Absent
3. Minutes of previous Meeting
4. Matters Arising from the previous Minutes
5. OH&S Reps Reports
6. Incident Reports & Investigations
7. Incident/Injury Statistics
8. Other Matters
9. Endorsement of Registers and other statutory documents by a representative of the Principal Contractor

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

10. Close/Next Meeting

(d) Administrative Controls and the Occupational Health & Safety File

(i) The OH&S File (Construction Regulation 5 (7))

As required by Construction Regulation 5(7), the Principal Contractor and other Contractors will each keep an OH&S File on site containing the following documents as a minimum:

- \* Notification of Construction Work (Construction Regulation 3.)
- \* Copy of OH&S Act (updated) (General Administrative Regulation 4.)
- \* Proof of Registration and good standing with a COID Insurer (Construction Regulation 4 (g))
- \* OH&S Programme agreed with the Client including the underpinning Risk Assessment/s & Method Statements (Construction regulation 5 (1))
- \* Copies of OH&S Committee and other relevant Minutes
- \* Designs/drawings (Construction Regulation 5 (8))
- \* A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 9)
- \* Appointment/Designation forms as per (a)(i) & (ii) above.
- \* Registers as follows:
  - \* Accident/Incident Register (Annexure 1 of the General Administrative Regulations)
  - \* OH&S Representatives Inspection Register
  - \* Asbestos Demolition & Stripping Register
  - \* Batch Plant Inspections
  - \* Construction Vehicles & Mobile Plant Inspections by Controller
  - \* Daily Inspection of Vehicles. Plant and other Equipment by the Operator/ Driver/User
  - \* Demolition Inspection Register
  - \* Designer's Inspection of Structures Record
  - \* Electrical Installations, -Equipment & -Appliances (including Portable Electrical Tools)
  - \* Excavations Inspection
  - \* Explosive Powered Tool Inspection, Maintenance, Issue & Returns Register (incl. cartridges & nails)
  - \* Fall Protection Inspection Register
  - \* First Aid Box Contents
  - \* Fire Equipment Inspection & Maintenance
  - \* Formwork & Support work Inspections
  - \* Hazardous Chemical Substances Record
  - \* Ladder Inspections
  - \* Lifting Equipment Register
  - \* Materials Hoist Inspection Register

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- \* Machinery Safety Inspection Register (incl. machine guards, lock-outs etc.)
- \* Scaffolding Inspections
- \* Stacking & Storage Inspection
- \* Inspection of Structures
- \* Inspection of Suspended Platforms
- \* Inspection of Tunnelling Operations
- \* Inspection of Vessels under Pressure
- \* Welding Equipment Inspections
- \* Inspection of Work conducted on or Near Water
- \* All other applicable records

The Municipality will conduct an audit on the OH&S file of the Principal Contractor from time-to-time.

(f) OH&S Goals & Objectives & Arrangements for Monitoring & Review of OH&S Performance

The Principal Contractor is required to maintain a CIFR of at least 8 (See Annexure 1. to this document: "Measuring Injury Experience) and report on this to RAL on a monthly basis

(f) Notification of Construction Work (Construction Regulation 3.)

The Principal Contractor must, where the Contract meets the requirements laid down in Construction Regulation 3, within 5 working days, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure A in the Construction Regulations) for the purpose. A copy must be held on the OH&S File and a copy must be forwarded to the Municipality for record keeping purposes.

(g) Training, Awareness and Competence

The contents and syllabi of all training required by the Act and Regulations are to be included in the Principal Contractor's OH&S Plan.

(i) General Induction Training

All members of Contractor's Site management as well as all the persons appointed as responsible for OH&S in terms of the Construction and other Regulations will be required to attend a general induction session by the Client

All employees of the Principal and other Contractors to be in possession of proof of General Induction training.

(ii) Site Specific Induction Training

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Principal Contractor will be required to develop Contract work project specific induction training based on the Risk Assessments for the Contract work and train all employees and other Contractors and their employees in this.

All employees of the Principal and other Contractors to be in possession of proof of Site Specific OH&S Induction training at all times.

(iii) Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training as follows:

OH&S Training Requirements: (as required by the Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- \* General Induction (Section 8 of the Act)
- \* Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- \* Site/Project Manager
- \* Construction Supervisor
- \* OH&S Representatives (Section 18 (3) of the Act)
- \* Training of the Appointees indicated above
- \* Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 21)
- \* Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction regulation 27)
- \* Basic First Aid (General Safety Regulations 3)
- \* Storekeeping Methods & Safe Stacking (Construction Regulation 26)
- \* Emergency, Security and Fire Co-coordinator

(iv) Awareness & Promotion

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Principal Contractor is required to have a promotion and awareness scheme in place to create an OH&S culture in employees. The following are some of the methods that may be used:

- Toolbox Talks
- OH&S Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as OH&S Safety circles.

(v) Competence

The Principal Contractor shall ensure that his and other Contractors personnel appointed are competent and that all training required to do the work safely and without risk to health, has been completed before work commences.

The Principal Contractor shall ensure that follow-up and refresher training is conducted as the contract work progresses and the work situation changes.

Records of all training must be kept on the OH&S File for auditing purposes.

(h) Consultation, Communication and Liaison

OH&S Liaison between the Client, the principal Contractor, the other Contractors, the Designer and other concerned parties will be through the OH&S committee as contemplated in above.

In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.

The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/ situations etc.

The Principal Contractor will be required to do Site Safety Walks with the Municipality at least on a basis to be determined between the two parties.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Principal and other Contractors will be required to conduct Toolbox Talks with their employees on a weekly basis and records of these must be kept on the OH&S File. Employees must acknowledge the receipt of Toolbox Talks which record must, likewise be kept on the OH&S File.

The Principal Contractors most senior manager on site will be required to attend all the Municipality's OH&S meetings and a list of dates, times and venues will be provided to the Principal Contractor by the Municipality.

(i) Checking, Reporting and Corrective Actions

(i) Monthly Audit by Client (Construction Regulation 1(d))

The Municipality will be conducting a Monthly Audit to comply with Construction Regulation 4(1)(d) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

(ii) Other Audits and Inspections by the Municipality:

The Municipality reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include Site Safety Walks.

(iii) Conducting an Audit

A representative of the Principal Contractor must accompany the Municipality on all Audits and Inspections and may conduct his/her own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results.

(iv) Contractor's Audits and Inspections

The Principal Contractor is to conduct his own monthly internal audits to verify compliance with his own OH&S Management system as well as of with this specification.

(v) Inspections by OH&S Representative's and other Appointees

OH&S Representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

(vi) Recording and Review of Inspection Results

All the results of the abovementioned inspections to be in writing, reviewed at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

(vii) Reporting of Inspection Results

The Principal Contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 2: "SHE Risk Management Report"

(j) Incident Reporting and Investigation

Reporting of Accidents and Incidents (Section 24 and General Administrative Regulation 8 of the OHS Act)

The Principal Contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- \* dies
- \* becomes unconscious
- \* loses a limb or part of a limb
- \* is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

- \* a major incident occurred
- \* the health or safety of any person was endangered
- \* where a dangerous substance was spilled
- \* the uncontrolled release of any substance under pressure took place
- \* machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- \* machinery ran out of control

to the Municipality within two days and to the Provincial Director of the Department of Labour within seven days (Section 24 of the Act & General Administrative Regulation 8.) EXCEPT that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both the Municipality and the Provincial Director of the Department of Labour forthwith by telephone, telefax or E-mail.

The Principal Contractor is required to provide the Municipality with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Principal Contractor is required to provide the Municipality with copies of all internal and external accident/incident investigation reports including the reports contemplated below within 7 days of the incident occurring.

**Accident and Incident Investigation (General Administrative Regulation 9)**

The Principal Contractor is responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic

The results of the investigation to be entered into the Accident/Incident Register listed in above.

The Principal Contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Municipality reserves the right to hold its own investigation into an incident or call for an independent external investigation.

**Operational Control**

**(a) Emergency Preparedness, Contingency Planning and Response**

The Principal Contractor must appoint a competent person to act as Emergency Controller/Coordinator.

The Principal Contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Municipality may have in place.

The Principal Contractor and the other Contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

**(b) First Aid (General Safety Regulation 3)**

The Principal Contractor must provide First Aid equipment (including a stretcher) and have qualified First Aider/s as required by General Safety Regulation 3 of the OHS Act.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Contingency Plan of the Principal Contractor must include the arrangements for speedily and timeously transporting injured/ill person/s to a medical facility or of getting emergency medical aid to person/s that may require it.

The Principal Contractor must have firm arrangements with his other Contractors in place regarding the responsibility of the other Contractors injured/ill employees

(c) Security

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees will not be allowed on site unaccompanied.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period.

(d) Fall Protection (Working in Elevated Positions (Construction regulation 8.))

A pre-emptive Risk Assessment will be required for any work to be carried out above two metres from the ground or any floor level and will be classified as "Work in Elevated Positions".

As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he/she is working at ground level and whilst working in this position be wearing a single belt with lanyard that will be worn to prevent the person falling from the platform, ladder or other device utilised. This safety belt will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length that the person will not be able to move over the edge.

Alternatively, any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with guard rails at two different heights as prescribed in SABS 085: Code of Practice for the Design, Erection, Use and Inspection of Access Scaffolding.

Where the requirement in is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device OR the person must be attached to an approved, by AL, fall arrest system.

Where the requirements are not practicable, a suitable catch net must be erected.

Workers working in elevated positions must be trained to do this safely and without risk to health

Where work on roofs is carried out, the Risk Assessment must take into account the possibility of persons falling through fragile material. Skylights and openings in the roof.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

(e) Structures (Construction Regulation 9)

The Principal Contractor must ensure that:

- Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it
- No structure is overloaded to the extent where it becomes unsafe
- He/she has received from the designer the following information:
- Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work
- A geo-scientific report (where applicable)
- The loading the structure is designed to bear
- The methods and sequence of the construction process
- all drawings pertaining to the design are on site and available for inspection

(f) Formwork & Support Work (Construction Regulation 10.)

- Formwork & Support work (F&SW) must be carried out under the supervision of competent person designated in writing
- F&SW structures must be so designed, erected, supported, braced and maintained that it will be able to support any vertical or lateral loads that may be applied
- No load to be imposed onto the structure that the structure is not designed to carry
- F&SW must be erected in accordance with the structural design drawings for that F&WS and, if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the F&WS
- All drawings pertaining to the F&SW must be kept available on site
- All equipment used in the erection of F&WS must be checked by a competent person before use
- The foundation or base upon which F&SW is erected must be able to bear the weight and keep the structure stable
- Employees erecting F&SW must be trained in the safe work procedures for the erection, moving and dismantling of F&SW
- Safe access (and emergency escape) must be provided for workers
- A competent person must inspect F&SW structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the F&SW is stripped. The results of all inspections must be recorded in a register kept on site
- The F&SW must be left in place until the concrete has reached sufficient strength to bear its own weight plus any additional weight that may be imposed upon it and not until the designated competent person has authorised its stripping in writing
- Any damaged F&SW must be repaired/rectified immediately
- Deck panels must be secured against displacement

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- The slipping of persons on release agents on deck panels prevented
- Persons health must be protected against the use of solvents, oils or other similar substances

(g) Excavations (Construction Regulation 11.)

Where excavations will exceed 1,5 m in depth the Contractor will be required to submit a Method Statement to **the Municipality** for approval before commencing with the excavation and **the Municipality** will issue a permit to proceed once the Risk Assessment and Method Statement are approved.

- Excavation work must be carried out under the supervision of a competent person who has been appointed in writing
- Before excavation work begins the stability of the ground must be evaluated
- Whilst excavation work is being performed, the contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material
- No person may be required or permitted to work in an excavation that has not been adequately shored or braced or where:
  - the excavation is in stable material or where
  - the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane
- The shoring or bracing may not be left out unless written permission has been obtained from the appointed competent person and shoring and bracing must be designed and constructed to safely support the sides of the excavation
- Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavator
- No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the trench unless suitable shoring has been installed to be able to carry the additional load
- Any neighbouring building, structure or road that may be affected or endangered by the excavation must be protected from damage or collapse
- Every excavation must be provided with means of access that must be within 6 metres of any worker within the excavation
- The location and nature of any existing services such as water, electricity, gas etc. must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for workers in the excavation

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Every excavation including the shoring and bracing or any other method to prevent collapse must be inspected by the appointed competent person as follows:
  - Daily before work commences
  - After every blasting operation
  - After an unexpected collapse of the excavation
  - After substantial damage to any supports
  - After rain

The results of any inspections must be recorded in a register kept on site

- Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced to at least one metre high and as close to the excavation as practicable and
- Provided with warning lights or visible boundary indicators after dark or when visibility is poor
- Upon entering an excavation, the requirements of General Safety Regulation 5 must be observed:
  - any confined space may only be entered after the air quality has been tested to ensure that it is safe to breathe and does not contain any flammable mixture or
  - the confined space has been purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes and
  - the safe atmosphere must be maintained or
  - employees have to be using breathing apparatus and wearing a safety harness with a rope with the free end of the rope being attended to by a person outside the confined space, furthermore,
  - an additional person trained in resuscitation must be in full-time attendance immediately outside the confined space and
  - additional breathing and rescue apparatus must be kept immediately outside the confined space for rescue purposes
  - all pipes, ducts etc. that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage
  - the employer must ensure that all employees have left the confined space after the completion of work
  - where flammable gas is present in a confined space no work may be performed in close proximity to the flammable atmosphere that may ignite the flammable gas or vapour.

**(h) Demolition Work (Construction Regulation 12.)**

- Demolition work to be carried out under the supervision of a competent person who has been appointed in writing

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- A detailed structural engineering survey of the structure to be demolished to be carried out and a method statement on the procedure to be followed in demolishing the structure to be developed by a competent person, before any demolition may be commenced
- As demolishing progresses the structural integrity of the structure to be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature collapse
- Steps must be taken to ensure that where a structure is being demolished:
  - No floor, roof or any other part of the structure is overloaded with debris or material that would make it unsafe
  - precautions are taken to prevent the collapse of the structure when any frame or support is cut or removed
  - shoring or propping is applied where necessary
  - No person must be required or allowed to work under unsupported overhanging material
  - THE STABILITY OF AN ADJACENT BUILDING, STRUCTURE OR ROAD MUST BE MAINTAINED AT ALL TIMES.
- The location and nature of any existing services such as water, electricity, gas etc. must be established before any demolition is commenced with and any service that may be affected by the demolition must be protected and made safe for workers.
- Every stairwell in a building being demolished must be adequately illuminated
- Convenient and safe means of access must be provided.
- A catch platform or net must be erected over every entrance to the building or structure being demolished where the likelihood exists of material or debris falling on persons entering and leaving and every other area where the likelihood exists of material or debris falling on persons, must be fenced or barricaded.
- No material may be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded
- Waste and debris may only be disposed of from a height in a chute with the following design:
  - Adequately constructed and rigidly fastened
  - If inclined >45 degrees enclosed on all four sides
  - Fitted with a gate or control mechanism to control the flow of material that may not freefall down the chute
  - Discharged into a container or a barricaded area
  - Demolition equipment may only be used on floors or slabs that are able to support it.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Asbestos related work must be conducted to the requirements of the Asbestos regulations promulgated under the OHS Act and in particular Asbestos Regulation 21:
  - Demolition of asbestos may only be carried out by a registered (with the Department of Labour) Asbestos Contractor
  - All asbestos materials likely to become airborne must be identified
  - A Plan of Work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA) (approved by the Department of Labour) 30 days prior to commencement of demolishing work unless the Plan was drawn up by an AAIA and a signed (by all parties) copy must be submitted to the Department of Labour 14 days before commencement of the demolishing

**During demolition work:**

- All asbestos containing material must be disposed of safely workers must be issued with appropriate PPE and the proper use thereof enforced
- After the demolition has been completed the area/premises must be thoroughly checked to ensure that all asbestos waste has been removed
- No person is allowed to:
  - Use compressed air or permit the use of compressed air to remove asbestos dust from any surface or person
  - Smoke, eat, drink or keep food or beverages in an area not specifically designated for this
  - Apply asbestos by spraying

Lead related work must be conducted to the requirements of the Lead regulations promulgated under the OHS Act

Where demolition work will involve the use of explosives a method statement must be developed by a competent person in accordance with applicable explosives legislation.

**(i) Tunneling (Construction Regulation 13.)**

- To be performed in accordance with the Tunnelling Regulations as published under the Mines Health & Safety Act (29 of 1996)
- No person shall enter a \*tunnel that has a height dimension less than 800 mm
  - \* Definition of Tunnelling: “the construction of any tunnel beneath the natural surface of the earth for the purpose other than the searching for or winning of a mineral

**(j) Access Scaffolding (Construction Regulation 14)**

Access Scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 14 and SA Bureau of Standards Code of Practice, SANS 085 entitled, “The Design, Erection, Use & Inspection of Access Scaffolding.



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly.

Scaffolding may only be erected, altered or dismantled by a person who has adequate training and experience in this type of work or under the supervision of such a person.

(k) Suspended Platforms & Boatswains Chairs (Construction Regulation 15 & 16)

The Contractor to design, erect, use and maintain suspended platforms in accordance with the requirements of Construction Regulation 15.

Boatswains chairs are to be erected, used maintained and inspected in accordance with the requirements of Construction Regulation 16.

(l) Batch Plants (Construction Regulation 18)

The Contractor to erect, operate and maintain Batch Plants in accordance with the requirements of Construction Regulation 18.

Explosive Powered Tools (Construction Regulation 19)

Every Explosive Powered Tools (EPT) must be:

- Provided with a guard around the muzzle to confine flying fragments or particles
- A firing mechanism that will prevent the EPT from firing unless it is pushed against the surface and at right angle (where the EPT is fitted with an intermediate piston between the charge and the nail this requirement is waived)
- **The Contractor or user must ensure that:**
- Only the correct type of cartridge is used
- The EPT is cleaned inspected and cleaned daily before use by an appointed competent person who keeps register with the findings of his inspection and the details of cleaning, service and repairs
- The safety devices are in good working order before the EPT is use
- When the EPT is not being used it is stored in an unloaded condition together with the cartridges in a safe/secure place inaccessible to unauthorised persons
- A warning notice is displayed at the point where the EPT is in use
- The issue and return of cartridges must be by issue/returns register signed by both issuer and user and empty cartridge cases must be returned with unspent cartridges
- Users/operators of the EPT have received the necessary training and has been authorised as competent to use/operate the EPT
- Users/operators must wear the prescribed PPE whilst using/operating the tool

(m) Cranes & Lifting Equipment (Construction Regulation 20)

### **Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Cranes and Lifting equipment must be designed and constructed in accordance with generally accepted technical standards and operated, used, inspected and maintained in accordance with the requirements of Driven Machinery Regulation 8 of the OHS Act:

- to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, a table should be used by the driver/operator
- each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit
- fitted with a brake or other device capable of holding the MML. This brake or device to automatically prevent the downward movement of the load when the lifting power is interrupted
- fitted with a load limiting device that automatically arrest the lift when
- the load reaches its highest safe position or
- when the mass of the load is greater than the MML
- every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
  - chains – 4 (four)
  - steel wire ropes - 5 (five)
  - fibre ropes - 10 (ten)
- every hook or load attaching device must be designed such or fitted with a device that will prevent the load from slipping off or disconnecting
- every lifting machine must be inspected, and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturers prescription or to 110% of the MML
- in addition, all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety
- devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person
- all maintenance, repairs, alterations and inspection results must be recorded in a log book
- and each lifting machine must have its own log book.
- no person may be lifted by a lifting machine not designed for lifting persons unless in a
- cradle approved by the inspector of the Department of Labour
- every jib crane with an MML of 5 000 kg or more at minimum jib radius must be provided
- with a load indicator or a load lifting limiting device

#### **Lifting Tackle:**

- to be manufactured of sound material, well-constructed and free from patent defects

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- to be clearly and conspicuously marked with ID number and MML
- factor of safety:
  - Natural fibre ropes - 10(ten)
  - Man-made fibre ropes & woven webbing - 06(six)
  - Steel wire ropes – single rope - 06(six)
  - Steel wire ropes – combination slings - 08(eight)
  - Mild Steel chains - 05(five)
  - High tensile/alloy steel chains - 04(four)
- steel wire ropes must be discarded (not used any further for lifting purposes) when excessive wear and corrosion is evident and must be examined by every three months for this purpose and the results recorded.

**Operator**

- Every lifting machine operator must be trained specifically for the type of lifting machine that he/she is operating.
- Operators of Jib cranes with a MML of 5 00 kg or more must be in possession of a certificate of training issued by an accredited (by The Department of Labour) training provider.

**Construction Regulation 20:**

Where tower cranes (TC) are used:

- account must be taken of the effects of wind force on the structure
- account must be taken of the bearing capacity of the ground on which the TC is to be erected
- the bases for the TC and tracks for rail mounted TC's must be firm and level
- must be erected at a safe distance from excavations
- clear space must be provided and maintained for erection, operation, maintenance and dismantling
- TC operators must be competent to carry out the work safely

TC operators must be in possession of a valid medical certificate testifying that the holder is physically and psychologically fit to work on a TC.

All lifting operations where the lift will exceed 2000 kg must be planned by a competent person and the plan submitted to the Municipality for approval and permission to carry out the lift.

(n) **Construction Vehicles & Mobile Plant (Construction Regulation 21)**

Construction Vehicles and Mobile Plant will be inspected by the Municipality prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHS Act and Regulations.

Construction Vehicles and Mobile Plant (CV&MP) to be:

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- of acceptable design and construction
- maintained in good working order
- used in accordance with their design and intention for which they were designed
- operated/driven by trained, competent and authorised operators/ drivers. No unauthorised persons to be allowed to drive CV&MP
- operators and drivers of CV&MP must be in possession of a valid medical certificate declaring the operator/drive physically and psychologically fit to operate or drive CV&MP
- provided with safe and suitable means of access
- fitted with adequate signalling devices to make movement safe including reversing
- excavations and other openings must be provided with sufficient barriers to prevent CV&MP from falling into same
- provided with roll-over protection
- inspected daily before start-up by the driver/operator/user and the findings recorded in a register/log book
- CV&MP to be fitted with two head and two tail lights whilst operating under poor visibility conditions
- No loose tools, material etc. is allowed in the driver/operator's compartment/cabin nor in the compartment in which any other persons are transported
- CV&MP used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported

No person may ride on a CV&MP except for in a safe place provided for the purpose

The construction site must be organised to facilitate the movement of CV&MP and that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated

CV&MP left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights reflectors or barricades to prevent moving traffic to come into contact with the parked CV&MP.

In addition, CV&MP left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely

Workers employed adjacent or on public roads must wear reflective safety vests

All CV&MP inspection records must be kept in the OH&S File

(o) **Electrical Installations (Construction Regulation 22)**

The installation of temporary electricity for Construction shall be in accordance with the Construction regulation 22 and the Electrical Installation Regulations.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The Contractor must ensure that:

- existing services are located and marked before construction commences and during the progress thereof
- where the abovementioned is not possible, workers with jackhammers etc. are protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etc
- electrical installations and -machinery are sufficiently robust to withstand working conditions on site
- temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the OH&S File
- electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the OH&S File
- all temporary electrical installations must be controlled by a competent person appointed in writing

(p) **Electrical & Mechanical Lock-Out**

An electrical and mechanical lock-out procedure must be developed by the Principal Contractor and submitted to the Municipality for approval before construction commences. This lock-out procedure to be adhered to by all Contractors on site.

(q) **Use & Storage of Flammables (Construction Regulation 23)**

**The Contractor to ensure that:**

- No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions are taken
- No flammable is used or applied e.g. in spay painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose unless there is no danger of fire or explosion due to the application of adequate ventilation
- The workplace is effectively ventilated. Where this cannot be achieved:
  - Employees must wear suitable respiratory equipment
  - No smoking or other sources of ignition is allowed in the area
  - The area is conspicuously demarcated as “flammable”
- Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with access control measures in place and sufficient firefighting equipment installed and fire prevention methods practised e.g. proper housekeeping

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Flammables stored in a permanent flammables store are stored so that no fire or explosion is caused i.e.:
  - stored in a locked well-ventilated reasonably fire-resistant container, cage or room conspicuously demarcated as “Flammable Store – No Smoking or Naked Lights”
  - the flammables store to be constructed of two-hour fire-retardant walls and roof and separated from adjoining rooms or workplaces by means of a two-hour fire-retardant fire wall
  - Adequate and suitable firefighting equipment installed around the flammables store and marked with the prescribed signs
  - All electrical switches and fittings to be of a flameproof design
  - Any work done with tools in a flammables store or work areas to be of a non-sparking nature
  - No Class A combustibles such as paper, cardboard, wood, plastic, straw etc. to be stored together with Flammables
  - The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored
  - A sign indicating the capacity of the store to be displayed on the door
  - Only one day’s quantity of Flammable is to be kept in the workplace
  - Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas
  - Metal containers to be bonded to earth whilst decanting to prevent build-up of static
  - Welding and other flammable gases to be stored segregated as to type of gas and empty and full cylinders

**(r) Working on or Near Water (Construction Regulation 24)**

The Principal Contractor must ensure that, where construction work is being carried out over or in close proximity to water:

- Measures are in place to prevent workers from falling into the water and drowning. These measures to include the availability of lifejackets
- Measures are in place to rescue any worker/ that has fallen into the water
- Measures for the timeous warning of flooding are in place

**(s) Housekeeping (Construction Regulation 25)**

**The Contractor to ensure that:**

- Housekeeping is continuously implemented
- Materials & equipment are properly stored
- Scrap, waste & debris are removed regularly

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to free flow of pedestrian and vehicular traffic
- Waste & debris not to be removed by throwing from heights but by chute or crane
- Where practicable, Construction sites are fenced off to prevent entry of unauthorised persons
- Catch platforms or –nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects
- An unimpeded work space is maintained for every employee
- Every workplace is kept clean, orderly and free of tools etc. that are not required for the work being done materials
- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials
- The walls and roof of every indoors workplace is sound and leak-free
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fences, boarded over or provided with protection to prevent persons from falling.

(t) **Stacking & Storage (Construction Regulation 27)**

**The Contractor/Employer must ensure that:**

- A competent person is appointed in writing to supervise all stacking and storage on a construction site
- Adequate storage areas are provided and demarcated
- The storage areas are kept neat and under control
- The base of any stack is level and capable of sustaining the weight exerted on it by the stack
- The items in the lower layers can support the weight exerted by the top layers.
- Cartons and other containers that may become unstable due to wet conditions are kept dry
- Pallets and containers are in good condition and no material is allowed to spill out
- The height of any stack does not exceed 3X the base unless stepped back at least half the depth of a single container at least every fifth tier or
- the approval of an inspector has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead off the stack and no items may overhang)
- The articles that make up a single tier are consistently of the same size, shape and mass
- Structures for supporting stacks are structurally sound and able to support the mass of the stack

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- No articles are removed from the bottom of the stack first but from the top tier first
  - Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him/her
  - Stacks that are in danger of collapsing are broken down and restacked
  - Stability of stacks are not threatened by vehicles or other moving plant and machinery
  - Stacks are built in a header and stretcher fashion and that corners are securely bonded
  - Stepped back at least half the depth of a single container at least every fifth tier
  - Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations
- (u) Storage of Flammables and Hazardous Chemicals (Hazardous Chemical Substances Regulations)

See (u) above and (v) below.

- (v) Fire Prevention and Protection

**The Principal Contractor must ensure that:**

- The risk of fire is avoided
- Sufficient & suitable storage of flammables is provided
- Sources of ignition is obviated wherever flammable or highly combustible material is present in the workplace e.g.:
  - notices prohibiting smoking is displayed and enforced
  - welding and flame cutting is only allowed under controlled conditions that includes written hot work permits
  - only spark-free hand and power tools are used
  - no grinding, cutting and shaping of ferrous metals are allowed using electrically driven power tools that produces sparks
  - flameproof switches & fittings are to be used in the flammable atmosphere
  - Good housekeeping is maintained to prevent the accumulation of unnecessary combustibles
  - Adequate ventilation is maintained
  - Adequate and suitable fixed and portable fire appliances is provided and maintained in good working order.
  - Maintenance must include:
    - Regular inspection by a competent person appointed in writing and keeping a register
    - Annual inspection and service by an accredited service provider
- All employees are instructed in the use of the Fire equipment and know how to attempt to extinguish a fire



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- A sufficient number of employees are appointed and trained to act as Emergency Team to deal with fires and other emergencies
- Employees are informed re. emergency evacuation procedures and escape routes
- Emergency escape routes are kept clear at all times
- After evacuation assembly points are demarcated
- Evacuation is practiced to ensure that all is evacuated timeously
- Roll-call is held after evacuation to account for all personnel and ensure that no-one has been left behind.
- A clearly audible to all persons on site siren or alarm is fitted

(w) Eating, Changing, Washing & Toilet Facilities (Construction Regulation 28)

The following will be the minimum requirements:

**Toilets**

The provision of Toilets is required in terms of the National Building Regulations and Construction Regulation 28.

Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of 1 toilet per 30 workers

**Showers**

At least cold-water showers of some sort have to be provided to a ratio of 1 shower per 15 workers.

**Change Rooms**

**Some form of screened off changing facility must be provided separately for each sex.**

**Eating Facility**

Some form of shelter from the sun, wind and rain must be provided

**Living Accommodation**

Where the site is in a remote location and transport home is not readily available, reasonable and suitable living accommodation must be provided.

(x) Personal & Other Protective Equipment (Sections 8/15/23 of the OHS Act)

The Contractor is required to identify the hazards in the workplace and deal with them. He must either remove them or, where impracticable take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal Protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of PPE is considered.

Where it is not possible to create an absolutely safe and healthy workplace the Contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the said equipment be maintained by the Contractor, that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s.

Employees do not have the right to refuse to use/wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternative solution has to be found that may include relocating or discharging the employee.

The Contractor may not charge any fee for protective equipment prescribed by him/her but may charge for equipment under the following conditions:

- Where the employee requests additional issue in excess of what is prescribed
- Where the employee has patently abused or neglected the equipment leading to early failure
- Where the employee has lost the equipment

All employees shall, as a minimum, be required to wear the following PPE on any RAL projects:

- Protective overalls
- Protective footwear
- Protective headwear
- Eye/face protection

**(y) Portable Electrical Tools & Equipment (Electrical Machinery Regulation 9)**

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 amp. plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etc. In addition, electrical appliances such as fridges, hotplates, heaters, etc. must be inspected and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing
- Inspection results must be recorded in a register

#### **Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Only competent authorised persons are allowed to use portable electrical tools and equipment
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

#### **Portable Electrical Tools**

- Must be maintained in good condition at all times to prevent an electrical shock to the user
- The main source must incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such
- All equipment must be fitted with a switch to allow for safe & easy starting and stopping

#### **Portable Lights**

- Must be fitted with a robust non-hygroscopic non-conducting handle
- Live metal parts/parts which may become live must be protected against contact
- The lamp must be protected by a strong guard
- The cable lead-in must withstand rough handling
- It is suggested that a register be kept for each piece of equipment and findings of regular
- inspections must be entered
- Inspections must concentrate on plug, cord, switch and any obvious faults
- When used in wet/damp/metal container conditions, it must be protected as for portable
- electrical tools, above

#### **(z) Public Health & Safety (Section 9 of the OHS Act)**

The Principal Contractor will be responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes:

- Non- employees entering the site for whatever reason
- The surrounding community
- Passersby to the site

Appropriate signage must be posted to this effect and all employees on site must be instructed on ensuring that non-employees are protected at all times

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

All non-employees entering the site must receive induction into the hazards and risks and the control measures for these.

**(aa) Hazardous Chemical Substances**

**The Contractor/Employer must ensure that:**

- Employees receive the necessary information & training to be able to use and store HCS safely
- Employees obey lawful instructions regarding:
  - the wearing and use of protective equipment
  - the use and storage of HCS
  - the prevention of the release of HCS
  - the wearing of exposure monitoring and measuring equipment
  - the cleaning up and disposal of materials containing HCS
  - housekeeping, personal hygiene and the protection of the environment
  - the Risk Assessments required in terms of Construction Regulation 7 include employee exposure to HCS and that the necessary to protect persons from being detrimentally affected by HCS present or used in the workplace, are taken
  - suppliers provide the necessary information in the form of a Material Safety Data Sheet (MSDS) regarding an HCS required to ensure the safe use and storage of that HCS
  - an up-to-date list is kept on site of HCS's stored and used together with the MSDS's of the said HCS's
- HCS containers are clearly marked as to the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the HCS on the list indicated above
- HCS e.g. Asbestos dust is not cleared by the use of compressed air but is vacuumed
- No person eats or drinks in a HCS workplace
- HCS waste is disposed of safely in terms of hazardous waste disposal requirements

**(bb) Project/Site Specific Requirements**

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**See Annexure 3**

**Annexure 1: Measuring Injury Experience**

**Annexure 2: SHE Risk Management Report**

**Annexure 3. List of Risk Assessments**

## ANNEXURE 1: MEASURING INJURY EXPERIENCE

Injury experience has traditionally been measured by the use of a disabling injury frequency rate, the so-called “DIFR”. The DIFR is calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of man-hours worked.

Lately the DIFR has been replaced internationally with a DIIR: disabling injury incidence rate. The only difference between the two rates are that the 10 million in the calculation is replaced with 200 000. (200 000 purported to be the number of hours and average person works in a lifetime.)

The use of the two rates above has proved to be somewhat problematical as they are open to manipulation and disabling injuries are often “hidden” by returning the injured employee to the workplace so as not to lose a shift and therefore having to register a disabling injury.

The Construction Industry recently decided to promote the use of a new frequency rate based on the number of compensation injury claims as these are more difficult to hide or manipulate because the reporting of compensable injuries is a legal requirement.

The industry is hoping that adoption of this new measurement of injury experience will enable the industry to monitor itself as far as work related injuries are concerned.

Below follows an explanation of this new rating system.

### COMPENSATION INCIDENCE FREQUENCY RATE (CIFR)

#### FORMULA

No. of Compensation Claims X 200 000

\*220 man hours X No. of Employees

#### DEFINITIONS

No. of Compensation

Claims: **The number of claims lodged with the COID insurer for the period under review**

**200 000:** The fixed factor to align the rate with other rates used internationally

Man-hours Worked

Include: *	Hourly		Paid		Employees
	* Sub-contractors	(No.	of	Employees	X *220 each)
	* Staff	(No. of Employees X *220 hours each)			

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**220 man-hours:** The \*average number of hours worked by one employee in one month in the Construction industry.

\* Overtime, absence on leave or sick leave, unrecorded after-hours time worked by senior and middle management factored into this average.

**No. of Employees:** The actual or average number of employees employed  
for the period under review.

2002/03CIFRSystem

## ANNEXURE 2: EXECUTIVE SHE RISK MANAGEMENT REPORT

The SAFCEC OH&S committee recently developed the following report in an attempt to standardized on reporting and assist contractors in obtaining a clear picture of their SHE Risk Management performance. It is hoped that clients will also accept this standardised report. Your comments/suggestions for improvement is invited.

### EXAMPLE ONLY: ALL INFORMATION IS FICTITIOUS

XYZ construction

#### \*SHE RISK MANAGEMENT REPORT

PERIOD JANUARY TO MARCH 2002

\*(SHE = Safety, Health & Environment)

### 1. Introduction

We hope that this new format of quarterly SHE Risk Management reporting will provide a clear picture of the company's performance as far as occupational health & safety is concerned.

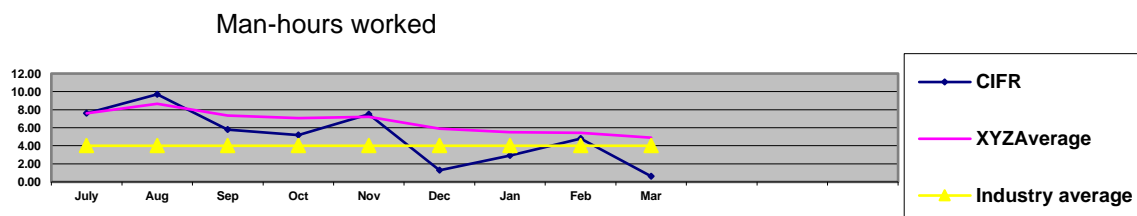
The first quarter of 2002 generally reflected an improvement in injury experience and shows a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2001 figures. A sub-contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation in May of the new electronic SHE Management system that will make the tools to implement the SHE programmes available to all management and supervisory staff.

### 2. Incident Statistics

#### Compensation Incident Frequency Rate (CIFR)

$\text{CIFR} = \frac{\text{Total No. of Claims against the Workmen's Compensation Fund}}{\text{Man-hours worked}} \times 200\,000$



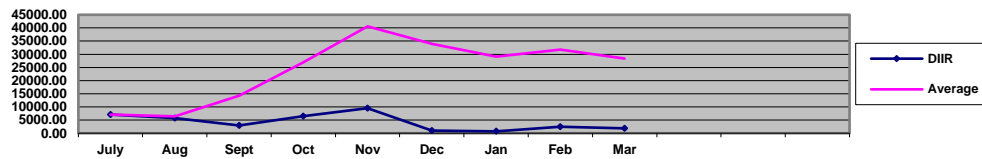
#### 2.2. Disabling Injury Incidence Rate (DIIR)



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

DIIR =  $\text{No. Disabling Injuries} \times 200\,000$   
worked

Man-hours



### 2.3. Other Major Incidents

Three other major incidents were experienced in the period under review:

- 2.3.1. A major trench collapsed at Job. 00123: XYZ Head Office, Bochum: No personnel injured, extensive damage to foundations: 3 days delay.
- 2.3.2. A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Polokwane. The driver jumped off and was not injured. Cost of damage to façade: R45 000.
- 2.3.3. A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and levelling machines. Cost of replacing the hut and machines: R30 000

## 3. RISK AREAS

The following items of concern need priority consideration by management:

- 3.1. New employees must undergo pre-employment medical examinations to:
  - protect XYZ from claims at a later stage
  - ensure that only healthy persons are employed
  - prevent injuries and illness in the workplace
  - enhance XYZ image
- 3.2. Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

## 4. AUDITS

Three SHE audits were conducted in February and March:

4.1. Job 00432: Gillooly's Mall

Compliance: 56%(\*)

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Job 00786: Cullinan Head Office Compliance: 83%(\*\*\*\*)

Job 00589: Cleveland Station Compliance: 76%(\*\*\*)

**5. TRAINING**

One hundred and forty-two employees, representing 7% of employees, attended nine training courses. \*Our objective is to train 5,5% of employees quarterly.

Month	No. of Employees Trained	Course	Source
January	26	Induction	Internal
	15	OH&S Reps	Consultant
	3	Crane Drivers	External
February	23	Induction	Internal
	17	OH&S Reps	Consultant
March	43	Induction	Internal
	9	OH&S Reps	Consultant
	3	Bomag Rollers	Supplier
	3	First Aiders	St. John's

**6. LEGAL ISSUES**

- 6.1. An inspector of the Department of Labour issued an improvement notice on Job 00987: Gillooly's Mall. The notice requires that all scaffolding comply with the SABS standards for the Erection and Maintenance of Access Scaffolding (SABS 085). This is currently being attended to and the inspector will return on 15 April 2002 to ascertain if the notice has been complied with.

**8. OCCUPATIONAL AND OTHER HEALTH MATTERS****8.1. HIV Aids**

The proposed SAFCEC clinic will soon be operational and we will then be able to send our employees who have tested positive to the clinic for counselling and eventual treatment when necessary

The mobile clinic saw and tested fifty employee volunteers at 3 sites this month. Eighteen of them tested positive.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**8.2.    Tuberculosis**

The mobile clinic will be calling at Gillooly's Mall and Cleveland Station on 15 and 16 October respectively to screen employees for TB.

**8.3.    Noise**

All suspected noise pollution areas have been tested and the results are awaited. Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

**9.       ENVIRONMENTAL MEASURES**

Inspectors from the Botswana Department of the Environment visited Kgwadu/Botlokwa and inspected the site and yard. They gave it a "clean bill of health" and advised that we should increase the dust control measures by spraying roads three times per day instead of the present twice per day.

**10.      ACHIEVEMENTS/AWARDS**

- 10.1.   The client at Kgwadu/Botlokwa (Job 00786) awarded the XYZ site first position in the housekeeping competition conducted bi-monthly by the client's SHE managers. The project manager and his team are to be congratulated for this sterling effort.
- 10.2.   Job 0987: Refurbishment of Pretoria Main Railway Station has just completed 1million compensation claim free days. This was no easy achievement if we consider the conditions being worked under after the extensive fire that caused major damage.

SHE Risk Manager

2002.09.27

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**ANNEXURE 3: LIST OF RISK ASSESSMENTS**

- \* Clearing & Grubbing of the Area/Site
- \* Site Establishment including:
  - Office/s
  - Secure/safe storage for materials, plant & equipment
  - Ablutions
  - Sheltered eating area
  - Maintenance workshop
  - Vehicle access to the site
- \* Dealing with existing structures
- \* Location of existing services
- \* Installation and maintenance of temporary construction electrical supply, lighting and equipment
- \* Adjacent land uses/surrounding property exposures
- \* Boundary and access control/Public Liability Exposures (NB: the Employer is also responsible for the OH&S of non-employees affected by his/her work activities.)
- \* Health risks arising from neighbouring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning etc.
- \* Exposure to noise
- \* Exposure to vibration
- \* Protection against dehydration and heat exhaustion
- \* Protection from wet & cold conditions
- \* Dealing with HIV/Aids and other diseases
- \* Use of Portable Electrical Equipment including
  - Angle grinder
  - Electrical drilling machine
  - Skill saw
- \* Excavations including
  - Ground/soil conditions
  - Trenching
  - Shoring
  - Drainage of trench
- \* Welding including

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Arc Welding
- Gas welding
- Flame cutting
- Use of LP gas torches and appliances
  
- \* Loading & offloading of trucks
- \* Aggregate/sand and other materials delivery
- \* Manual and mechanical handling
- \* Lifting and lowering operations
- \* Driving & operation of construction vehicles and mobile plant including
  - Trenching machine
  - Excavator
  - Bomag roller
  - Plate compactor
  - Front end loader
  - Mobile cranes and the ancillary lifting tackle
  - Parking of vehicles & mobile plant
  - Towing of vehicles & mobile plant
  
- \* Use and storage of flammable liquids and other hazardous substances
- \* Layering and bedding
- \* Installation of pipes in trenches
- \* Pressure testing of pipelines
- \* Backfilling of trenches
- \* Protection against flooding
- \* Gabion work
- \* Use of explosives
- \* Protection from overhead power lines
- \* As discovered by the Principal Contractor's hazard identification exercise
- \* As discovered from any inspections and audits conducted by the Client or by the Principal Contractor or any other Contractor on site
- \* As discovered from any accident/incident investigation.

**CONSTRUCTION OF GA-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING**

---

**C3.4.3.2 ENVIRONMENTAL MANAGEMENT PLAN**

**CONTENTS**

C3.4.3.2.1	SCOPE
C3.4.3.2.2	DEFINITIONS
C3.4.3.2.3	IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS
C3.4.3.2.4	LEGAL REQUIREMENTS
C3.4.3.2.5	ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS
C3.4.3.2.6	TRAINING
C3.4.3.2.7	ACTIVITIES/ASPECTS CAUSING IMPACTS
C3.4.3.2.8	ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES
C3.4.3.2.9	RECORD KEEPING
C3.4.3.2.10	COMPLIANCE AND PENALTIES
C3.4.3.2.11	MEASUREMENT AND PAYMENT

**SCOPE**

This environmental management programme (EMP) sets out the methods by which proper environmental controls are to be implemented by the contractor. The duration over which the contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by the General Conditions of Contract, and the project specifications, as the defects notification period (maintenance period).

The provisions of this EMP are binding on the contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract. In the event that any conflict occurs between the terms of the EMP and the project specifications or Record of Decision, the terms herein shall be subordinate.

The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any substantial changes shall be submitted to the Roads Municipality Limpopo in writing for approval.

The EMP identifies the following:

Construction activities that will impact on the environment.

#### Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing

Specifications with which the contractor shall comply in order to protect the environment from the identified impacts.

Actions that shall be taken in the event of non-compliance.

#### **C3.4.3.2.1.DEFINITIONS**

**Alien Vegetation:** alien vegetation is defined as undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

**Construction Activity:** a construction activity is any action taken by the contractor, his subcontractors, suppliers or personnel during the construction process as defined in the South African National Roads Municipality Limited and National Roads Act, 1998 (Act No. 7, 1998)

**Environment:** environment means the surroundings within which humans exist and that could be made up of -

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

**Environmental Aspect:** an environmental aspect is any component of a contractor's construction activity that is likely to interact with the environment.

**Environmental Impact:** an impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

**Record of Decision:** a record of decision is a written statement from the National Department of Environmental Affairs and Tourism, (N.DEAT), that records its approval of a planned undertaking to improve, upgrade or rehabilitate a section of road and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

**Road Reserve:** the road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

#### **Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

**Road Width:** for the purposes of the EMP, the road width is defined as the area within the road reserve i.e. fence line to fence line, but also includes all areas beyond the road reserve that are affected by the continuous presence of the road, e.g. a reach of a water course.

#### **C3.4.3.2.2.IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS**

The contractor shall identify likely aspects before commencing with any construction activity. Examples of environment aspects include:

- waste generation
- stormwater discharge
- emission of pollutants into the atmosphere
- chemical use operations
- energy use operations
- water use operations
- use of natural resources
- noise generation

Thereafter the contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified and the activity planned so as to prevent any impact from happening. If prevention is not practicable, or in the event of mishap or misapplication, the contractor shall provide plans and measures for the engineer's approval, which will limit and contain the magnitude, duration and intensity of the impact. The contractor shall demonstrate that he/she is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce an approved construction programme according to subclause 8.3 as amended by Particular Condition of the general conditions of contract and clause B1204 of these project specifications.

Listed below are some environmental impacts that could adversely alter an aspect of the environment through usual construction activities:

- Pollution of atmosphere, soil or water
- Destruction or removal of fauna and flora and effect on biological diversity
- Deformation of the landscape
- Soil erosion
- Destruction of historical/heritage sites
- Effect on the built environment
- Effect on agricultural land and wetlands

General good construction practice will play an important role in avoiding the occurrence of an Impact. The contractor's attention is drawn, in this regard, to C1008. Environmental Management of Construction Activities



#### **C3.4.3.2.3.LEGAL REQUIREMENTS**

##### **a) General**

Construction will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The contractor should note that obligations imposed by the EMP are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

##### **b) Statutory and other applicable legislation**

The contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

#### **C3.4.3.2.4.ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS**

##### **a) Appointment of a Designated Environmental Officer (DEO)**

For the purposes of implementing the conditions contained herein, the contractor shall submit to the engineer for approval the appointment of a nominated representative of the contractor as the DEO for the contract. The request shall be given, in writing, at least fourteen days before the start of any work clearly setting out reasons for the nomination, and with sufficient detail to enable the engineer to make a decision. The engineer will, within seven days of receiving the request, approve, reject or call for more information on the nomination. Once a nominated representative of the contractor has been approved he/she shall be the DEO and shall be the responsible person for ensuring that the provisions of the EMP are complied with during the life of the contract. The engineer will be responsible for issuing instructions to the contractor where environmental considerations call for action to be taken. The DEO shall submit regular written reports to the engineer, but not less frequently than once a month.

The engineer shall have the authority to instruct the contractor to replace the DEO if, in the engineer's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMP or this specification. Such instruction will be in writing and shall clearly set out the reasons why a replacement is required.

There shall be an approved DEO on the site at all times.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing****b) Administration**

Before the contractor begins each construction activity the DEO shall give to the engineer a written statement setting out the following:

The type of construction activity.  
 Locality where the activity will take place.  
 Identification of the environmental aspects and impacts that might result from the activity.  
 Methodology for impact prevention for each activity or aspect.  
 Methodology for impact containment for each activity or aspect.  
 Emergency/disaster incident and reaction procedures.  
 Treatment and continued maintenance of impacted environment.

The contractor may provide such information in advance of any or all construction activities provided that new submissions shall be given to the engineer whenever there is a change or variation to the original.

The engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

**c) Good Housekeeping**

The Contractor shall undertake "good housekeeping" practices during construction as stated in clause 1217 of the COLTO Standard Specifications for Roads and Bridges and subclauses 4.18 and 11.11 of the General Conditions of Contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

**C3.4.3.2.5. TRAINING**

The designated environmental officer (DEO) must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;

#### **Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Municipality's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.

In the case of permanent staff the contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the contractor shall inform the engineer when and how he/she intends concluding his environmental training obligations.

#### **C3.4.3.2.6.ACTIVITIES/ASPECTS CAUSING IMPACTS**

A list of possible causes of environmental impacts that occur during construction activities is given in Table 7/1: Aspects or Activities that Cause Environmental Impacts during Construction Activities, which is to be found at the end of this part. This list is not exhaustive and shall be used for guideline purposes only.

#### **C3.4.3.2.7.ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES**

##### **a) Site Establishment**

##### **i) Site Plan**

The contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the contractor shall submit to the engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted not later than the first site meeting. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the engineer for consultation during rehabilitation of the site. Read with COLTO Specification 1302(a), 1402 (e).

##### **ii) Vegetation**

The contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring, shall be re-established.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding. (Read in conjunction with COLTO Specification 5801(b), 5802(b), (c), (d) and (e), 5804, 5805, 5806 and 5807). Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Rehabilitation

The area where the site offices were erected will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas shall be removed from the site on completion of the contract.

iv) Water for human consumption

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp / office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc). Only domestic type wastewater shall be allowed to enter this drain.

v) Heating and Cooking fuel

The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage treatment

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of project management, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage treatment will

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the engineer. Read with COLTO Specifications 1402(g) and 1404(a).

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the engineer.

**c) Waste Management**

The contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

**i) Solid Waste**

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the engineer. Disposal of solid waste shall be at a Department of Water Affairs and Forestry (DWAF) licensed landfill site or at a site approved by DWAF in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried at or near the site offices, nor anywhere else on the site, including the approved solid waste disposal site. Read with COLTO Specification 1404(a).

**ii) Litter**

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.

Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the contractor shall provide litter collection facilities for later safe disposal at approved sites. (Read with COLTO Specification 1302(b)).

**iii) Hazardous waste**

Hazardous waste such as bitumen, tar, oils etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care shall be taken to avoid spillage of tar or bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Under no circumstances shall the spoiling of tar or bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected tar or bituminous products shall be returned to the supplier's production plant. Any spillage of tar or bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the engineer.

**d) Control at the workshop**

The contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e. at the place of construction activity or at a formalised workshop).

**i) Safety**

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the contractor to, and used or worn by, the staff whose duty it is to manage and maintain the contractor's and his subcontractor's and supplier's plant, machinery and equipment.

**ii) Hazardous Material Storage**

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials e.g. tar or bitumen binders shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of tar or bituminous products shall only take place using suitable containers to the approval of the engineer.

The contractor shall provide proof to the engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected the contractor shall furnish the engineer with details of the preventative measures he proposes to install in order to mitigate against pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

**iii) Fuel and Gas Storage**

Fuel shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers.. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

iv) Oil and Lubricant Waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

e) Clearing the Site

In all areas where the contractor intends to, or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the engineer for his approval.

The plan shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections.

The contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, road construction has to be stored temporarily or otherwise within the road reserve, or at designated or instructed areas outside the road reserve. This responsibility shall extend until expiry of the defects notification period.

f) Soil Management

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil from the site for later re-use. Topsoil is considered to be the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include the storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved Department of Water Affairs and Forestry waste disposal site. (Read with COLTO Specifications 3104(a), 5802(a), (g), 5804(a), (b) and (c)). The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water. Stockpiles of topsoil shall not exceed a height of

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

2m, and if they are to be left for longer than 5 months, shall be analysed, and if necessary, upgraded before replacement. Stockpiles shall be protected against infestation by weeds.

The contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be top soiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the engineer. The contractor's responsibility shall also extend to the clearing of drainage or water systems within and beyond the boundaries of the road reserve that may have been affected by such negligence.

i) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the engineer, and stored separately from the topsoil if not used for road building. This soil shall be replaced in the excavation in the original order it was removed for rehabilitation purposes.

g) Drainage

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users / receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products.

The contractor shall submit to the engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions.

h) Earthworks and Layerworks

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the contractor shall have complied with the requirements of sections C1008 (e) and C1008 (g). In addition, the contractor shall take cognisance of the requirements set out below.



**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

i) Quarries and borrow pits

The contractor's attention is drawn to the requirement of the Department of Minerals and Energy, that before entry into any quarry or borrow pit, an EMP for the establishment, operation and closure of the quarry or borrow pit shall have been approved by the Department. It is the responsibility of the contractor to ensure that he is in possession of the approved EMP or a copy thereof, prior to entry into the quarry or borrow pit. The conditions imposed by the relevant EMP are legally binding on the contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific EMP and these specifications the former shall apply. The cost of complying with the requirements shall be deemed to be included in existing rates in the Bill of Quantities. (Read with COLTO Specification 3100 and 3200).

ii) Excavation, hauling and placement

The contractor shall provide the engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail the number of personnel and plant to be used and the measures by which the impacts of pollution (noise, dust, litter, fuel, oil, sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition from rainfall overnight or over periods when there is no construction activity. (Read with COLTO Standard Specification clauses 1217 and 3309)

iii) Spoil sites

The contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the engineer. No spoil site shall be located within 500m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.

The use of approved spoil sites for the disposal of hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments. The engineer will assist the contractor in obtaining the necessary approval if requested by the contractor.

Spoil sites will be shaped to fit the natural topography. These sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Slopes shall not exceed a vertical: horizontal ratio of 1:3. Only under exceptional circumstances will approval be given to exceed this ratio. Appropriate grassing measures to minimise soil erosion shall be undertaken by the contractor.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

This will include both strip and full sodding. The contractor may motivate to the engineer for other acceptable stabilising methods. The engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the contractor of a landowner's clearance notice and an engineer's certificate certifying slope stability (Read with COLTO standard Specifications clause 1214). The contractor's costs incurred in obtaining the necessary certification for opening and closing of spoil sites shall be deemed to be included in the tendered rates for spoiling.

iv) Stockpiles

The contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the engineer for his approval, together with the contractor's proposed measures for prevention, containment and rehabilitation against environmental damage.

The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the contractor shall at all times ensure that they are:

- Positioned and sloped to create the least visual impact;
- Constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment; and
- Kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated / deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the contractor's cost until clearance from the engineer and the relevant Authority is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in-situ milling or any detritus of material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract drawing or under instruction from the engineer.

In all cases, the engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their clause only when they have been satisfactorily rehabilitated. (Read with COLTO Specification 3203 and 4306).

v) Blasting activities

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives. In addition, the contractor shall, prior to any drilling of holes in preparation for blasting, supply the engineer with a locality plan of the blast site on which shall be shown the zones of influence of the ground and air shock-waves and expected limits of fly-rock. The plan shall show each dwelling, structure and service within the zones of influence and record all details of the dwellings/structures/services including existing positions, lengths and widths of cracks, as well as the condition of doors, windows, roofing, wells, boreholes etc. The contractor, alone, shall be responsible for any costs that can be attributed to blasting activities, including the collection of fly-rock from adjacent lands and fields. The submission of such a plan shall not in any way absolve the contractor from his responsibilities in this regard. The contractor shall also indicate to the engineer the manner in which he intends to advertise to the adjacent communities and/or road users the times and delays to be expected for each individual blast.

**i) Batching sites**

Asphalt plants are considered scheduled processes listed in the second schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965). Should the use of an asphalt plant be considered on site, the contractor shall be responsible to obtain the necessary permit from the Department of Environmental Affairs and Tourism, regardless of where they are sited.

Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the Department of Minerals and Energy legislation as well as the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relative authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under section C1008(h)(iii), with the exception that the contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard, the contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant national authority, as shall approval of closure. The engineer will assist the contractor in his submissions to the relevant authority.

Effluent from concrete batch plants and crusher plants shall be treated in a suitable designated sedimentation dam to the legally required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the engineer for approval.

The contractor shall invite the relevant department to inspect the site within 2 months after any plant is commissioned and at regular intervals thereafter, not exceeding 12 months apart.

**j) Spillages**

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water,

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

organic materials and tar or bituminous products. In the event of a spillage, the contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill treatment lies with the contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to his/her DEO or to the engineer. The Designated Environmental Officer will assess the situation in consultation with the engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil / water shall be determined by the contractor in consultation with the DEO and the engineer. Areas cleared of hazardous waste shall be re-vegetated according to the engineer's instructions.

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the engineer. The costs of containment and rehabilitation shall be for the contractor's account, including the costs of specialist input.

**k) Areas of Specific Importance**

Any area, as determined and identified within the project document as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the approved EMP. The contractor may offer alternative solutions to the engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection shall not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall require ad hoc treatment.

**i) Archaeological Sites**

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the engineer of such discovery. The National Monuments Council is to be contacted who will appoint an archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. (Read with COLTO General Condition of Contract Subclause 4.24 as amended by Particular Condition).

**ii) Graves and maddens**

If a grave or madden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/maddens shall be stopped and the engineer informed of the discovery.

The National Monuments Council should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the site

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

where the exhumed remains can be re-interred. (Read with COLTO General Conditions of Contract Subclause 4.24 as amended by Particular Condition).

**l) Noise Control**

The contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during daylight hours. Compliance with the appropriate legislation with respect to noise, shall be mandatory.

Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.

**m) Dust Control**

Dust caused by strong winds shall be controlled by means of water spray vehicles. Dust omission from batching plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant office of the Department of Minerals and Energy.

**n) Alien Vegetation**

The contractor shall be held responsible for the removal of alien vegetation within the road reserve disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily or otherwise within the road reserve. This responsibility shall extend for the duration of the defects notification period.

**C3.4.3.2.8.RECORD KEEPING**

The engineer and the DEO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the engineer shall issue to the contractor a notice of non-compliance whenever transgressions are observed. The DEO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the engineer in the monthly report.

Copies of any record of decision or EMP's for specific borrow pits or quarries used on the project shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

**C3.4.3.2.9.COMPLIANCE AND PENALTIES**

The contractor shall act immediately when such notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at the monthly site meetings.

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

The following penalties shall apply for environmental violations:

**a) Unnecessary removal or damage to trees**

- |   |   |                  |
|---|---|------------------|
| • 2600mm girth or less                            | : | R 5 000 per tree |
| • Greater than 2600mm, but less than 6180mm girth | : | R10 000 per tree |
| • Greater than 6180mm girth                       | : | R30 000 per tree |

**b) Serious violations:**

- |  |   |                               |
|--|---|-------------------------------|
| • Hazardous chemical/oil spill and/or dumping in non-approved sites.         | : | R10 000 per incident          |
| • General damage to sensitive environments.                                  | : | R 5 000 per incident          |
| • Damage to cultural and historical sites.                                   | : | R 5 000 per incident          |
| • Uncontrolled/unmanaged erosion (plus rehabilitation at contractor's cost). | : | R1 000 to R5 000 per incident |
| • Unauthorised blasting activities.  | : | R 5 000 per incident          |
| • Pollution of water sources.  | : | R 10 000 per incident         |

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

**c) Less serious violations:**

- |   |   |                     |
|---|---|---------------------|
| • Littering on site.  | : | R1 000 per incident |
| • Lighting of illegal fires on site.  | : | R1 000 per incident |
| • Persistent or un-repaired fuel and oil leaks.   | : | R1 000 per incident |
| • Excess dust or excess noise emanating from site.  | : | R1 000 per incident |
| • Dumping of milled material in side drains or on grassed areas                                       | : | R1 000 per incident |
| • Possession or use of intoxicating substances on site.   | : | R 500 per incident  |
| • Any vehicles being driven in excess of designated speed limits.                                     | : | R 500 per incident  |
| • Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife. | : | R2 000 per incident |
| • Illegal hunting.  | : | R2 000 per incident |
| • Urination and defecation anywhere except in designated areas.                                       | : | R 500 per incident  |

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

**C3.4.3.2.10. MEASUREMENT AND PAYMENT****Item****Unit****C100.01    Penalty    for    unnecessary    removal    or    damage    to    trees**

for the following diameter sizes

- |     |   |             |
|-----|---|-------------|
| (a) | 2600mm girth or less                            | number (No) |
| (b) | Greater than 2600mm, but less than 6180mm girth | number (No) |
| (c) | Greater than 6180mm girth                       | number (No) |

The unit of measurement shall be the number of trees by diameter size removed unnecessary or damaged. The penalty rates applied shall be those stated in clause C3.5.2.10.

**Item****Unit****C100.02    Penalty for serious violations**

- |     |  |             |
|-----|--|-------------|
| (a) | Hazardous chemical/oil spill and/or dumping in non-approved sites  | number (No) |
| (b) | General damage to sensitive environments   |             |
| (c) | Damage to cultural and historical sites  | number (No) |
| (d) | Pollution of water sources   | number (No) |
| (e) | Unauthorised blasting activities   | number (No) |
| (f) | Uncontrolled/unmanaged erosion<br>per incident, depending on environment impacts, plus<br>rehabilitation at contractor's cost) | number (No) |

**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets from Gravel To Surfacing**

The unit of measurement for C100.02 (a) to (f) shall be the number of serious violation incidents. The penalty rates to be applied shall be those stated in clause C3.5.2.10.

**Item****Unit****C100.03      Penalty for less serious violations**

- |  |             |
|--|-------------|
| • Littering on site  | number (No) |
| • Lighting of illegal fires on site  | number (No) |
| • Persistent or un-repaired fuel and oil leaks   | number (No) |
| • Excess dust or excess noise emanating from site  | number (No) |
| • Dumping of milled material in side drains or on grassed areas                                      | number (No) |
| • Possession or use of intoxicating substances on site   | number (No) |
| • Any vehicles being driven in excess of designated speed limits                                     | number (No) |
| • Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife | number (No) |
| • Illegal hunting  | number (No) |
| • Urination and defecation anywhere except in designated areas                                       | number (No) |

The unit of measurement shall be the number of less serious violation incidents. The penalty rates applied shall be those stated in clause C3.5.2.10.

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under section 8200.

The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.



**Table 1: Mechanisms that Cause Environmental Impacts during Construction Activities**

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
1300	Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1400	Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1500	Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1600	Overhaul	Spillage Storage. Noise/lights Dust control Exhaust fumes Washing waste	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation Preserve topsoil	
1700	Clearing and grubbing	Waste treatment Hazardous waste Water supply Noise /lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Protection of indigenous vegetation Preserve topsoil	
2100 -	Drainage	Waste treatment	Selection of site	Selection of site	Preserve indigenous	

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
2400		Hazardous waste Water supply Spillage Storage	Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	vegetation Preserve topsoil Management of weeds	
3100	Borrow pits	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3200	Stockpiling	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3300	Mass Earthworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3400 - 3900	Pavement layers	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
4100	Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
		Smoke control Storage of materials				
5000	Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
6000	Structures	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
7000	Concrete pavements etc	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	

**Construction Of Ga -Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing****C3.5 MANAGEMENT****C3.5.1 MANAGEMENT MEETINGS**

The following meetings will be required as minimum for the management of the contract.

- (a) Monthly client site meeting (using standard agenda for management control).
- (b) Technical meetings as required for each phase of the work.
- (c) Monthly safety meetings in terms of the OHS requirements.
- (d) Weekly progress meetings

**C3.5.2 QUALITY CONTROL**

Contractor to supply details of quality plan and procedures. These shall include:

- Inspection and test plans.
- Approval process.
- Hold-points.
- Milestones.

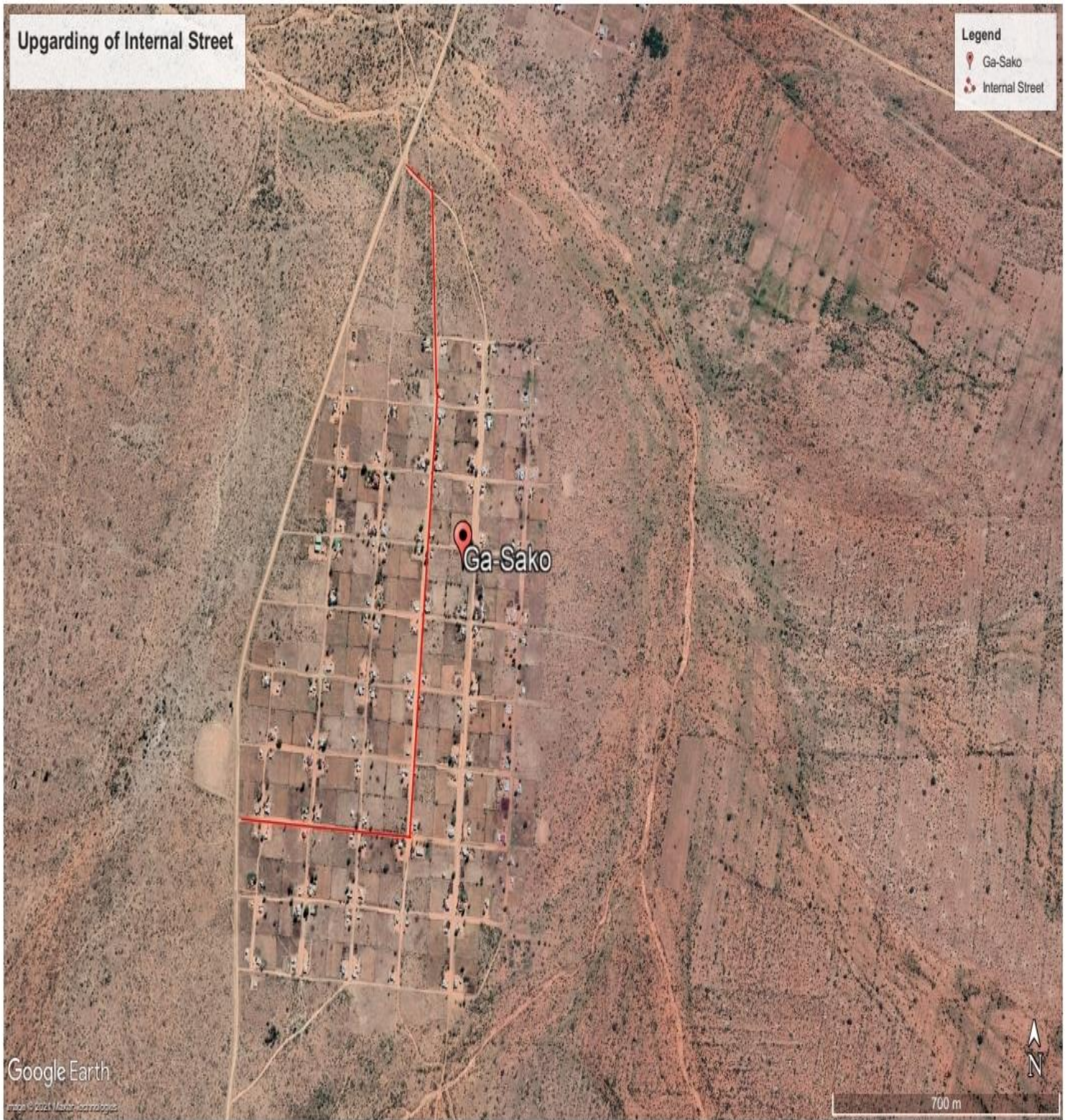
**Construction Of Ga-Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing**

**PART C4: SITE INFORMATION**

<b><u>C4.1</u></b>	<b>SITE INFORMATION.....</b>	<b>304</b>
--------------------	------------------------------	------------



Construction Of Ga -Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing



**Construction Of Ga -Sako Upgrading Of 1.7km Internal Streets From Gravel To Surfacing****C4.2 BID DRAWING****TECH/006/2022/23: List of Drawings**

<b>DRAWING NUMBER</b>	<b>DESCRIPTION</b>
0138-MLM-000	Cover Page
0138-MLM-001	List of Drawings
0138-MLM-002	Typical Section of 6m Wide Surfaced Road
0138-MLM-003	Typical Surface of Sub Surface Drainage
0138-MLM-004	Position of Sub Surface Drain
0138-MLM-005	Information Board Details
0138-MLM-006	Road Sign Erection Details
0138-MLM-007	Typical Detail of Concrete Side Drains, Kerbs and Energy Breakers
0138-MLM-008	Stone Pitching and Gabion Protection
0138-MLM-009	Road Traffic Management
0138-MLM-0010	Road Marking Details
0138-MLM-0011	Outlet Details
0138-MLM-0012	Typical Kerb Detail
0138-MLM-0013	Street Layout
0138-MLM-0014	Typical Speed Hump Details
0138-MLM-0015	Typical Raised Pedestrian Details
0138-MLM-0016	Layout Plan and Longitudinal Section
0138-MLM-0017	Cross Section



## MOLEMOLE MUNICIPALITY



CONTRACT NO.:TECH-006/2022/23

CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS  
FROM GRAVEL TO SURFACING

TENDER DRAWINGS

MAY 2022

ISSUED TO:

THE MUNICIPAL MANAGER  
MOLEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

PREPARED BY:

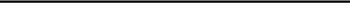
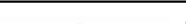


UNIT 10,JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email:admin@nevhutalu.co.za

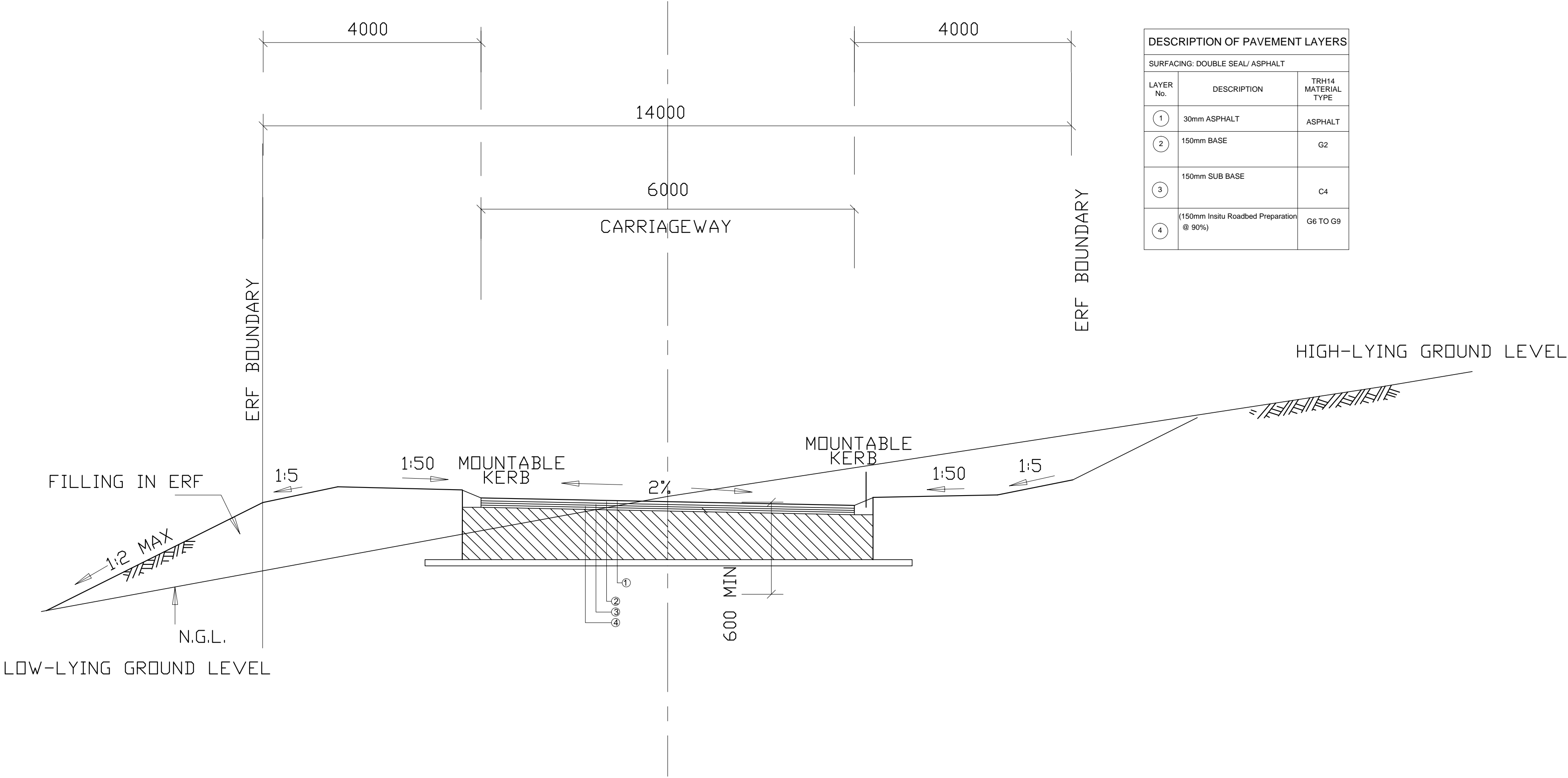


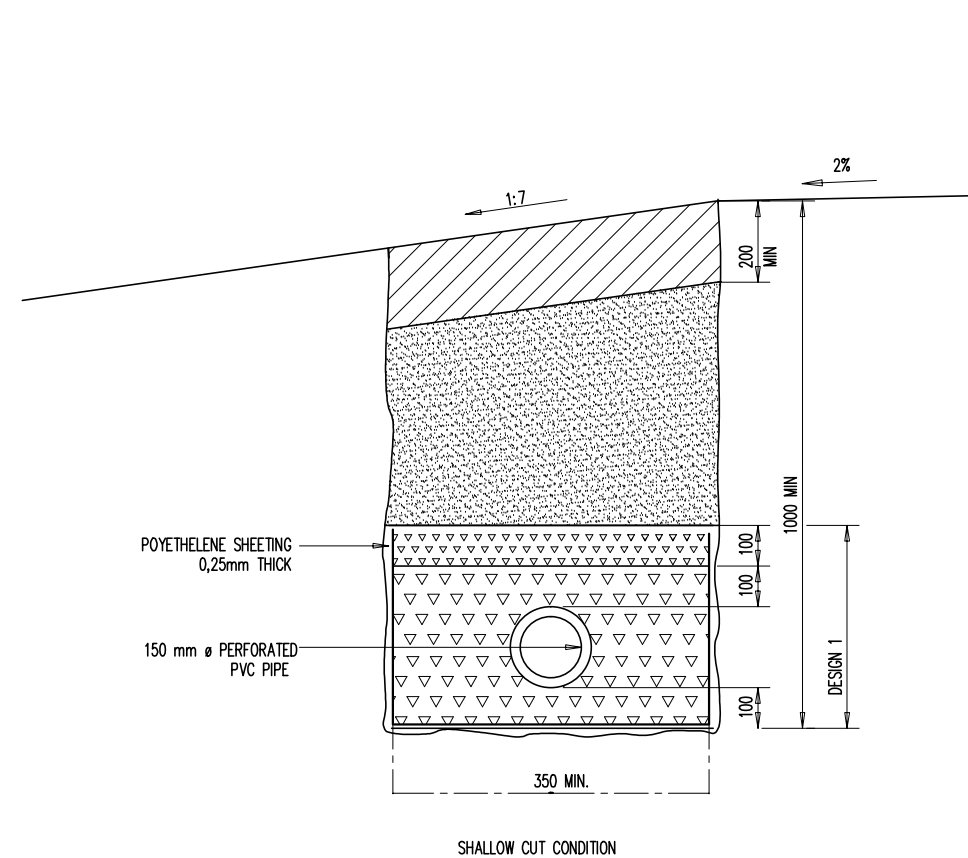
## LIST OF DRAWINGS

CONSULTANTS NO.	MLM DWG NO.	DESCRIPTION
0133-NCE-001	MM-TECH-001	LIST OF DRAWINGS
0133-NCE-002	MM-TECH-002	TYPICAL SECTIONS FOR A 6mm ROAD WITH CAMBER
0133-NCE-003	MM-TECH-003	SUB SURFACE DRAINAGE
0133-NCE-004	MM-TECH-004	POSITION OF SUB SURFACE DRAIN
0133-NCE-005	MM-TECH-005	INFORMATION BOARD DETAILS
0133-NCE-006	MM-TECH-006	ROAD SIGN ERECTION DETAILS
0133-NCE-007	MM-TECH-007	TYPICAL DETAIL OF CONCRETE SIDES DRAINS KERB AND ENERGY BREAKERS
0133-NCE-008	MLM-TECH-008	STONE PITCHING AND GABION PROTECTION
0133-NCE-009	MM-TECH-009	ROAD TRAFFIC MANAGEMENT
0133-NCE-010	MM-CTECH-010	ROAD MARKING DETAILS
0133-NCE-011	MM-TECH-011	TYPICAL KERB DETAILS
0133-NCE-012	MM-TECH-012	DETAILS OF OUTLET STRUCTURES
0133-NCE-013	MM-TECH-013	STREETS LAYOUT
0133-NCE-014	MM-TECH-014	TYPICAL SPEED HUMP DETAILS
0133-NCE-015	MM-TECH-015	TYPICAL RAISED PEDESTRIAN CROSSING DETAILS
0133-NCE-016	MM-TECH-016	LAYOUT PLAN AND LONGITUDINAL SECTION 0.000KM TO 0,520 KM
0133-NCE-017	MM-TECH-017	LAYOUT PLAN AND LONGITUDINAL SECTION 0.540KM TO 1.200 KM
0133-NCE-018	MM-TECH-018	LAYOUT PLAN AND LONGITUDINAL SECTION 1.200KM TO 1.900 KM
0133-NCE-019	MM-TECH-019	LAYOUT PLAN AND LONGITUDINAL SECTION 1.900KM TO 2064.943 KM
0133-NCE-020	MM-TECH-020	CROSS SECTIONS 0.000KM TO 0,580 KM
0133-NCE-021	MM-TECH-021	CROSS SECTIONS 0.600KM TO 1,160 KM
0133-NCE-022	MM-TECH-022	CROSS SECTIONS 1.180KM TO 1.760 KM
0133-NCE-023	MM-TECH-023	CROSS SECTIONS 1.780KM TO 2064.940 KM

			DESIGNED BY	T NEBOTALO Pr Eng	 <p>UNIT 10,JCJ LIMPRO BUILDING 6 HANS VAN RENSBURG POLOKWANE 0700 Tel: (015) 291 3519 Email: admin@nevhutalu.co.za</p>	APPROVED BY	 <p>MOLEMOLE MUNICIPALITY 303 CHURCH STREET PRIVATE BAG X44 MOGOWADI 0715 TEL-015 501 2301 FAX:015 501 0419</p>	CONTRACT NO.:TECH-006/2022/23		AS BUILT PLAN (FULL SIGNATURE)	SHEET    01    OF    15
			CHECKED BY	T NEBOTALO Pr Eng		FOR MM		DATE	GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM	SCALE A1 AS SHOWN
			DRAWN BY	R SIKHIPHA		DESIGN APPROVED				For CONSULTING ENGINEER	M&M DWG. No.
			CHECKED BY	T NEBOTALO Pr Eng		FOR CONSULTING ENGINEER		DATE	TYPICAL SECTION FOR A 6mm ROAD WIDTH PORTAL CULVERTS	CONSULTANTS DWG. No. <b>0138-MM-001</b>	<b>MM-TECH--001</b>
3	05/2022	TENDER DRAWINGS	TN								
			MM								

NOTES:  
1. ALL SLEEVES TO BE INSTALLED TO 1000mm

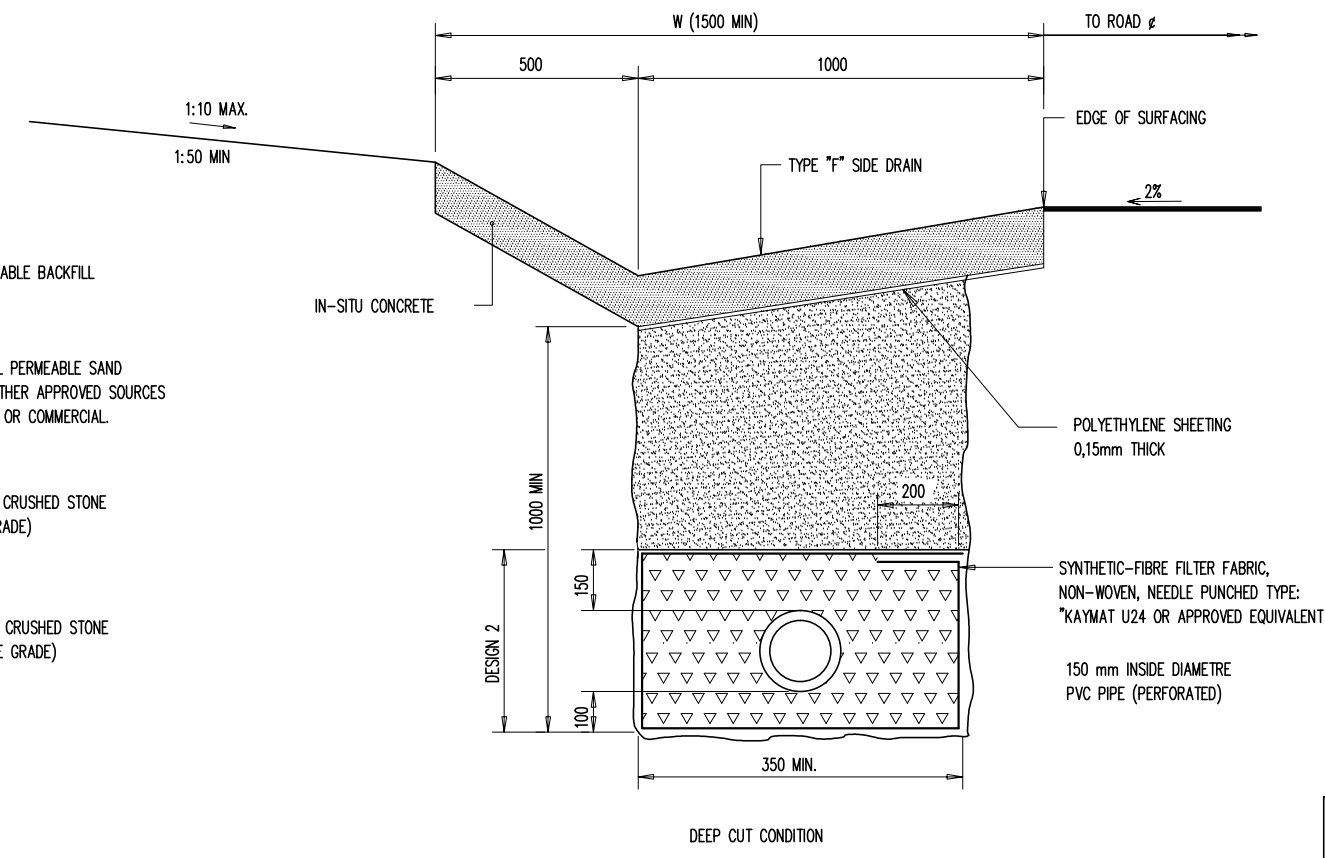




TYPE "A" SUBSURFACE DRAIN  
N.T.S.

- LEGEND
- IMPERMEABLE BACKFILL
  - NATURAL PERMEABLE SAND FROM EITHER APPROVED SOURCES ON SITE OR COMMERCIAL
  - GRADED CRUSHED STONE (FINE GRADE)
  - GRADED CRUSHED STONE (COARSE GRADE)

**NOTE:**  
DESIGNS 1 AND 2 CAN BE EXCHANGED WHEN INSTRUCTED BY THE ENGINEER



TYPE "B" SUBSURFACE DRAIN  
N.T.S.

**GRADING REQUIREMENTS OF CRUSHED STONE**

CRUSHED STONE SHALL BE GRADED CRUSHED STONE, WHICH CONFORMS TO THE FOLLOWING REQUIREMENTS:

PERCENTAGE PASSING THROUGH A -

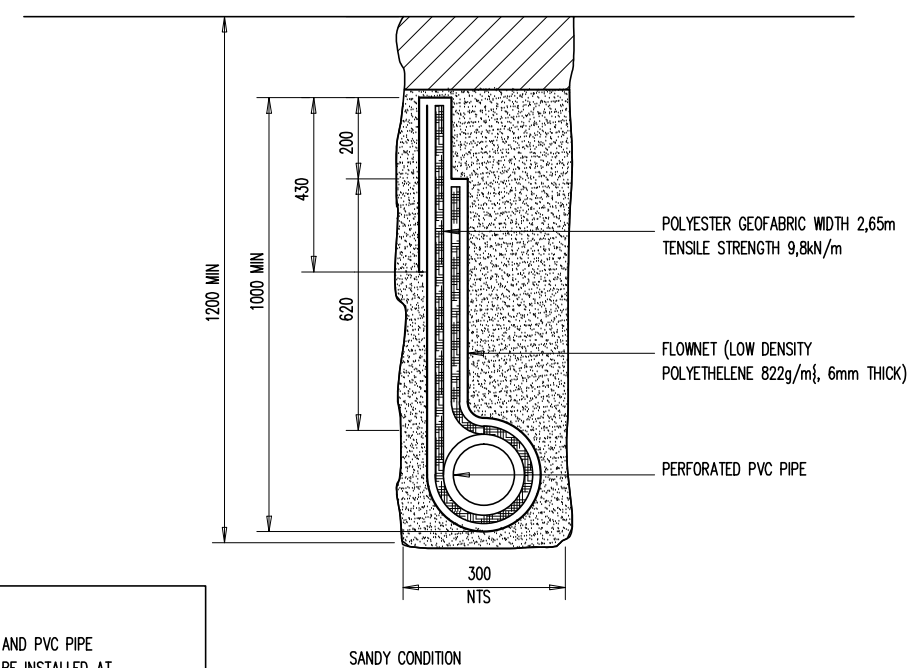
226,6mm SIEVE ..... 100  
213,2mm SIEVE ..... 60-85

FINE GRADE STONE:  
A MINIMUM OF 15% PASSING THROUGH A 3,35mm SIEVE.  
A MAXIMUM OF 15% PASSING THROUGH A 1,18mm SIEVE.

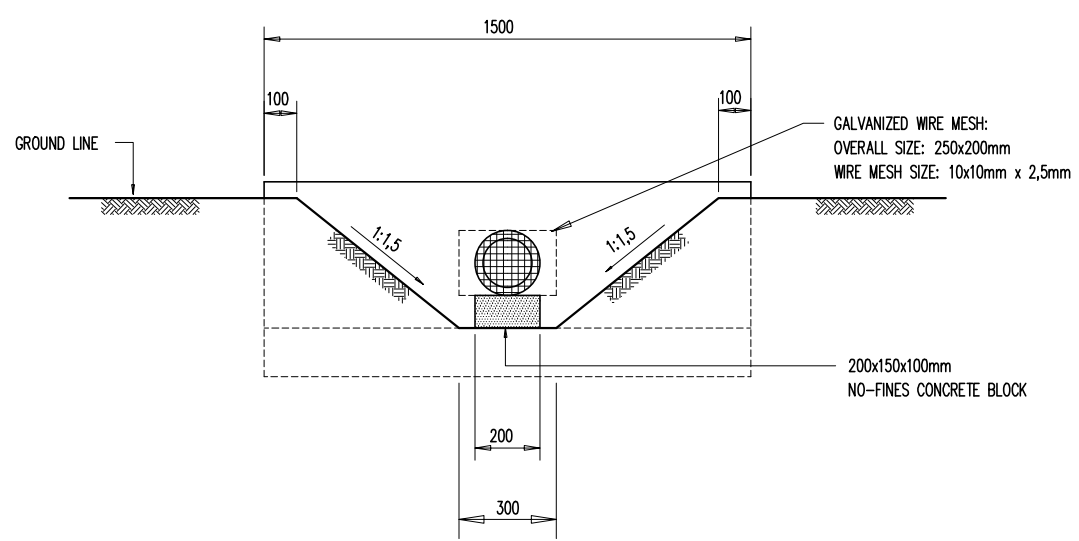
COARSE GRADE STONE:  
A MINIMUM OF 15% PASSING THROUGH A 6,70mm SIEVE.  
A MAXIMUM OF 15% PASSING THROUGH A 2,36mm SIEVE.

IN THE CASE OF ANY CRUSHED STONE NOT MORE THAN 5% OF THE MATERIAL SHALL PASS THROUGH THE 0,075mm SIEVE.

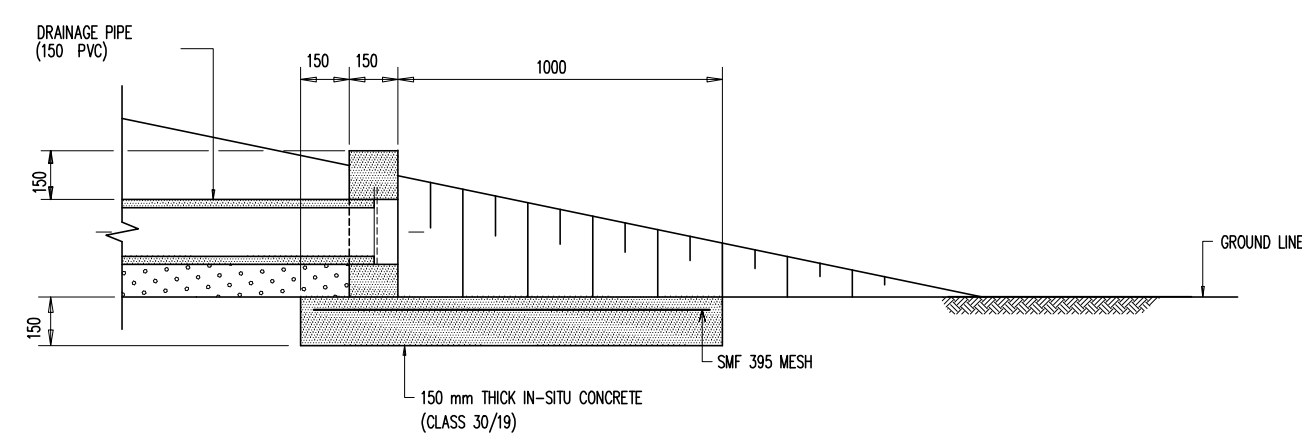
**NOTE:**  
FLOWNET AND PVC PIPE ONLY TO BE INSTALLED AT THE ENGINEER'S REQUEST



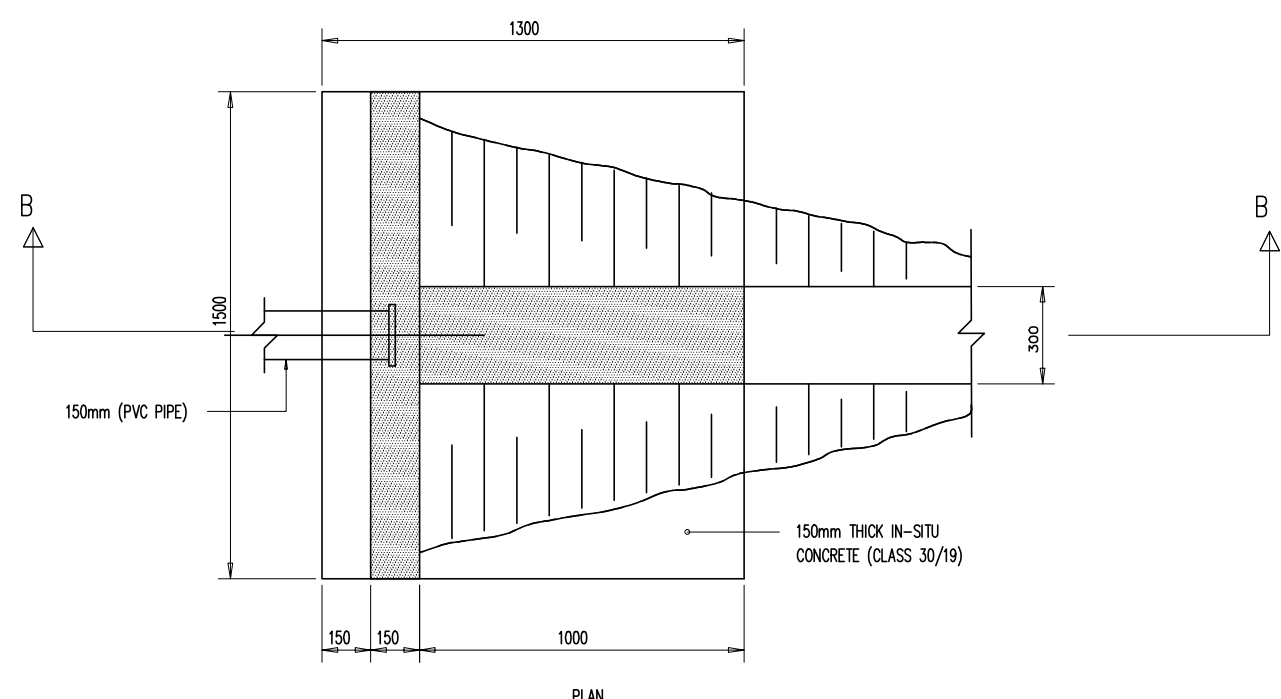
TYPE "C" SUBSURFACE DRAIN  
SCALE 1:10



FRONT ELEVATION

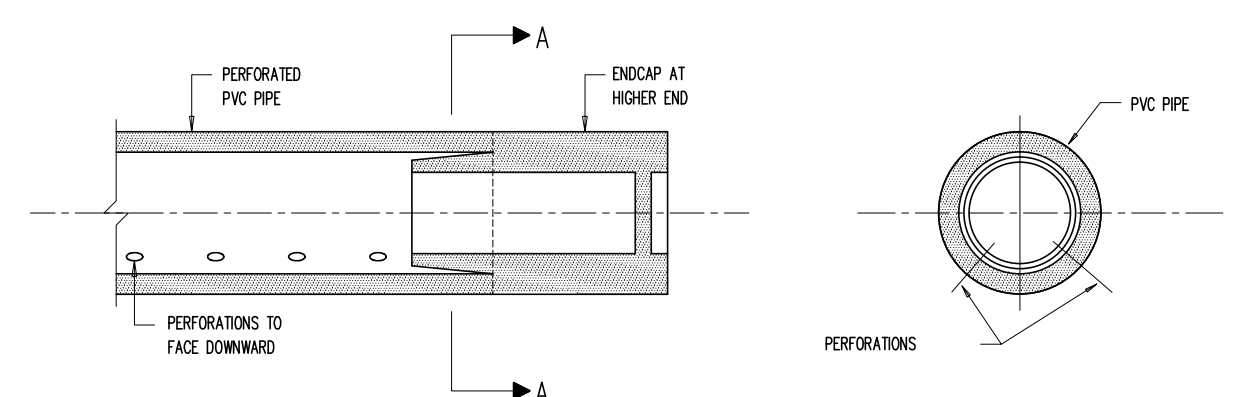


SECTION B-B



PLAN

DETAIL OF OUTLET STRUCTURE



SECTION THROUGH PIPE CENTRE LINE

SECTION A-A

ENDCAP DETAIL  
SCALE 1:5

3	05/2022	TENDER DRAWINGS	TN
No.	DATE	REVISION	CONSULT

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10, JCU LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutaku.co.za

APPROVED BY	
FOR MM	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE

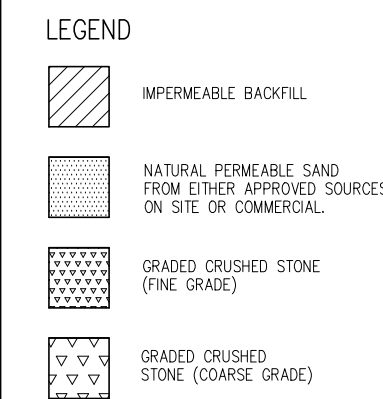
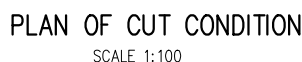


MOLEMOLÉ MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL: 015 501 2301  
FAX: 015 501 0419

CONTRACT NO.: TECH-006/2022/23
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING
SUB SURFACE DRAINAGE DETAILS

AS BUILT PLAN (FULL SIGNATURE)	SHEET 3 OF 15
For MM	DATE
For CONSULTING ENGINEER	DATE
CONSULTANTS DWG. No.	MM DWG. No.
0138-MM-003	MM-TECH-003





1.  $\alpha = 45^\circ$  OR SUCH ANGLE SO AS TO FACILITATE A MINIMUM SLOPE OF 0.5% FOR THE TRANSVERSE SUBSURFACE DRAIN.
2. THE SPACING, SLOPE AND LEVELS OF TRANSVERSE SUBSURFACE DRAINS ARE TO BE DETERMINED ON SITE

3	05/2022	TENDER DRAWINGS		TN	
No.	DATE	REVISION		CONSULT	MM

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



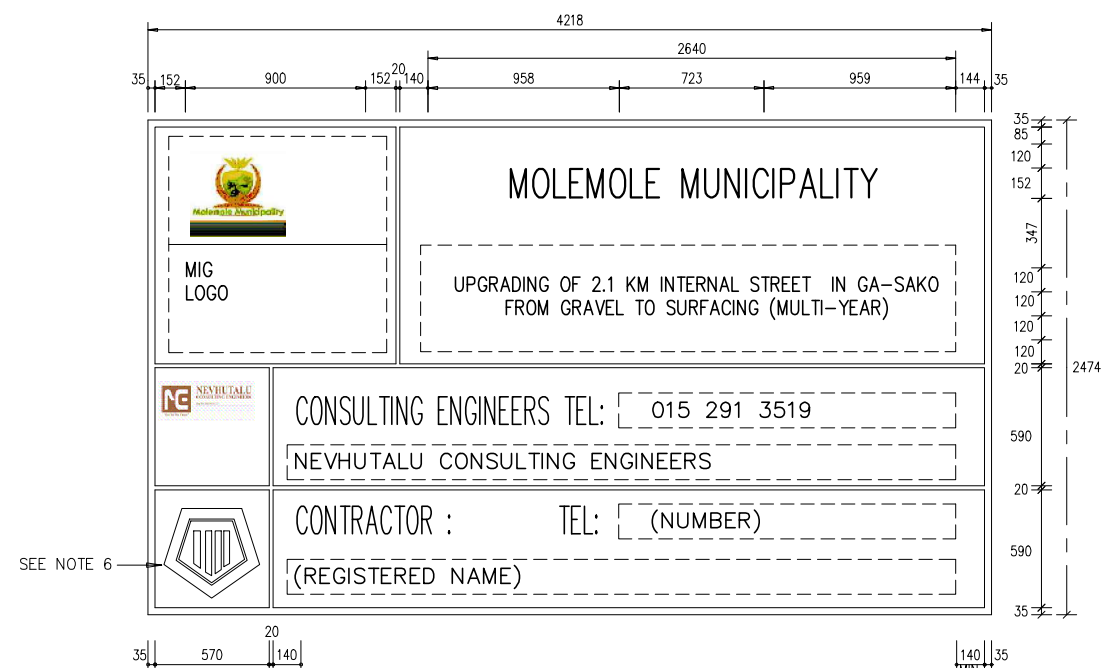
UNIT 10,JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: [admin@nevhutalu.co.za](mailto:admin@nevhutalu.co.za)

APPROVED BY	
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> FOR MM	<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> DATE
DESIGN APPROVED	
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> FOR CONSULTING ENGINEER	<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> DATE

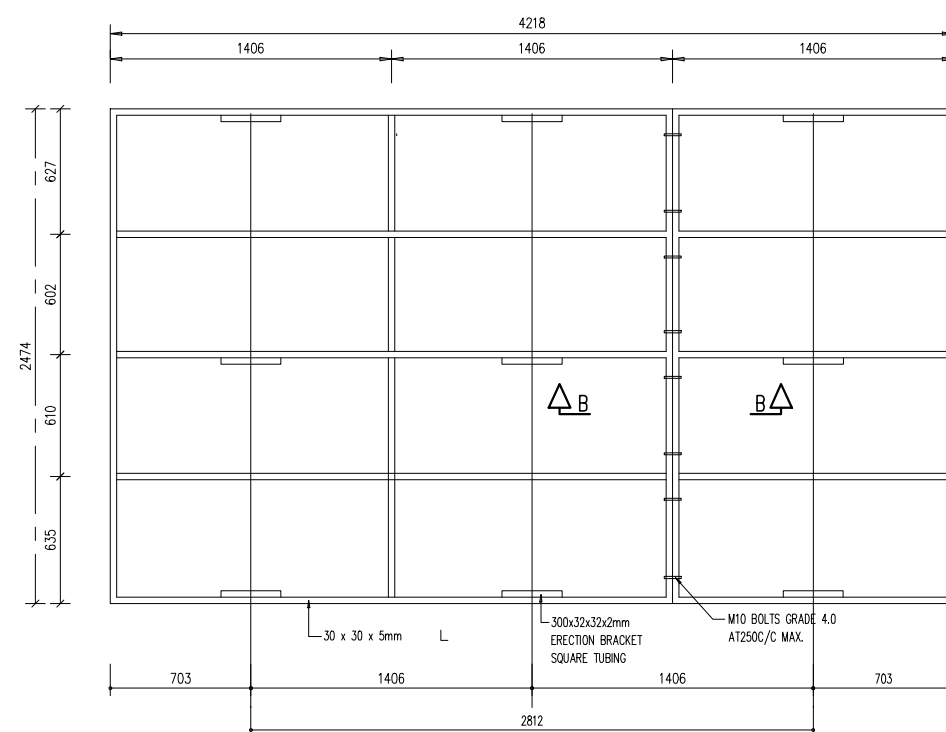


MOLEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	AS BUILT PLAN (PLAN SIGNATURE)	SHEET 4 OF 15
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM	DATE
	For Consulting ENGINEER	DATE
POSITION OF SUB SURFACE DRAIN	CONSULTANTS DWG. No.  0138-MM-004	MEM DWG. No.  MM-TECH-004

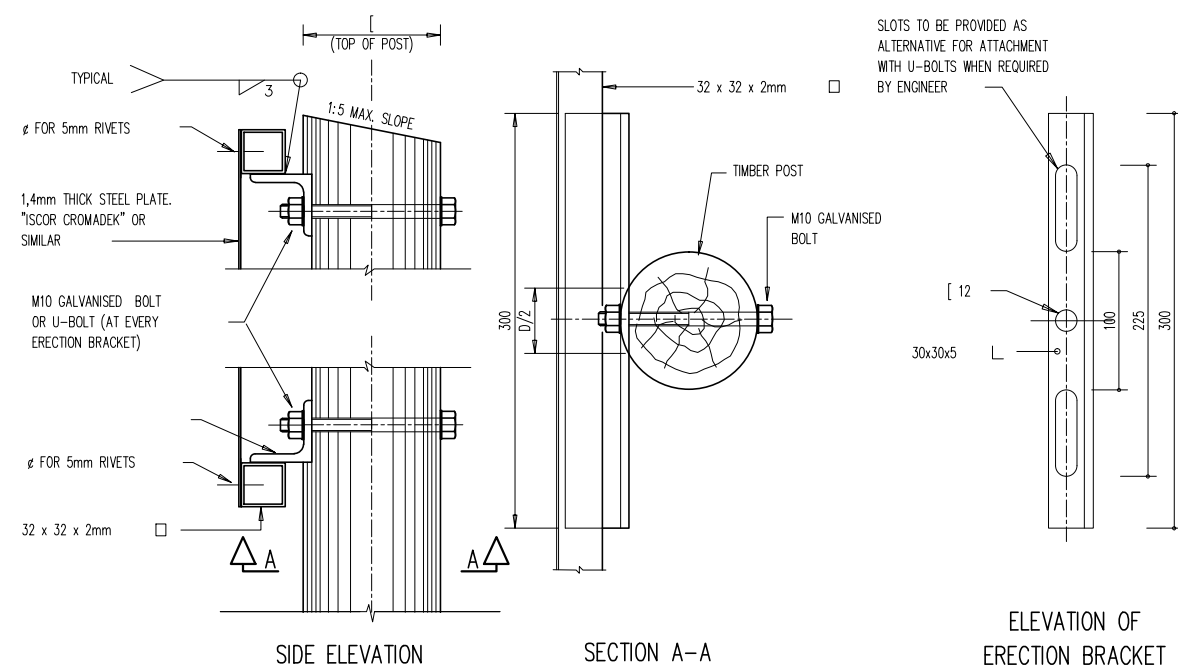


FRONT ELEVATION



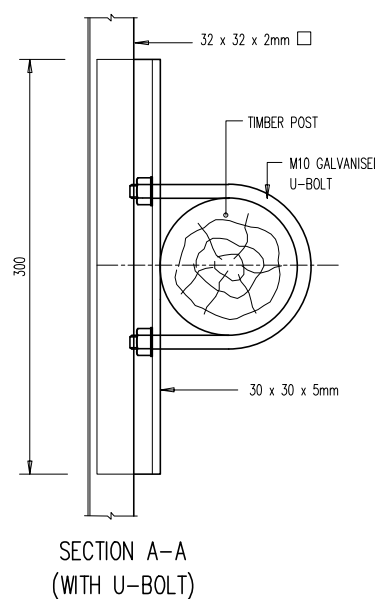
REAR SIDE BRACING

- NOTES:**
- EMBLEM:**  
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. SAFCOC EMBLEM ONLY IF CONTRACTOR IS A MEMBER OTHERWISE BLANK.
7. NEW SAACE LOGO TO BE OBTAINED FROM SAACE, JOHANNESBURG.

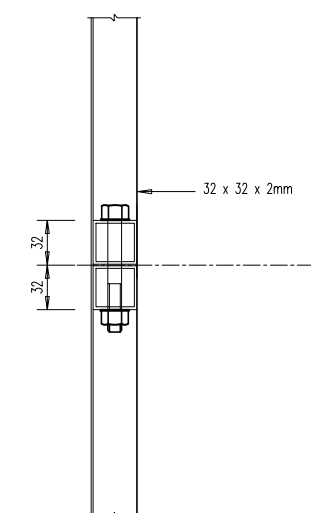


FIXING DETAIL FOR SIGN BOARDS

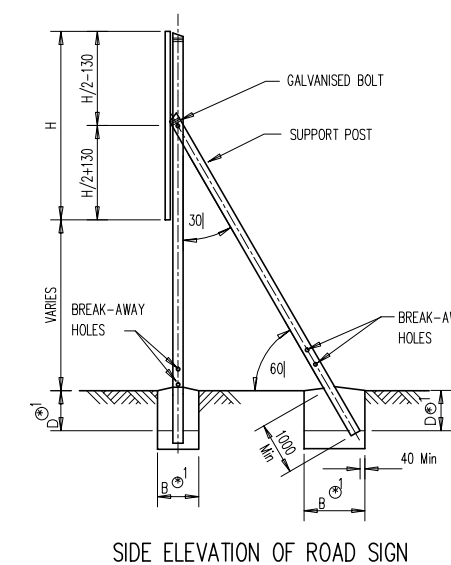
TABLE 1: DETERMINATION OF POSTS & FOOTINGS				
ERECTION DETAILS				
TYPE OF POST	UPRIGHT	STAY	D	B(DIA)
TIMBER POST AND STAY	100mm	80mm	600mm	850mm
TIMBER POST	180mm	-	1000mm	1450mm
D SECTION STEEL POST	100mm x 4mm	-	1000mm	1450mm



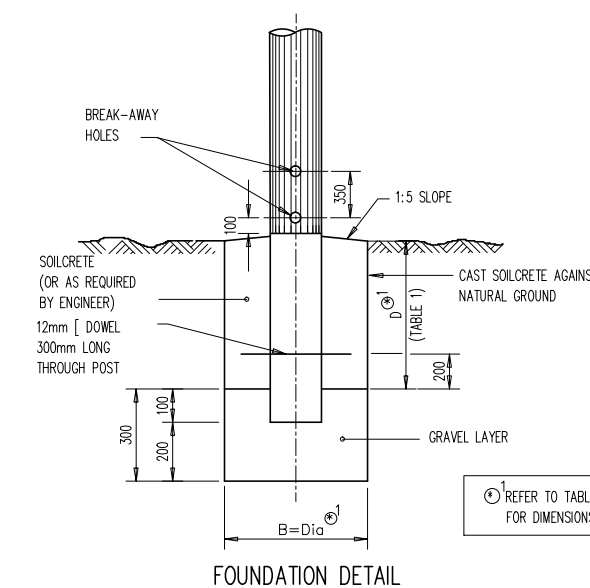
SECTION A-A  
(WITH U-BOLT)



SECTION B-B  
(AT JOINT OF SIGN)



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

No.	DATE	REVISION	CONSULT	MM
3	05/2022	TENDER DRAWINGS	TN	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10/JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

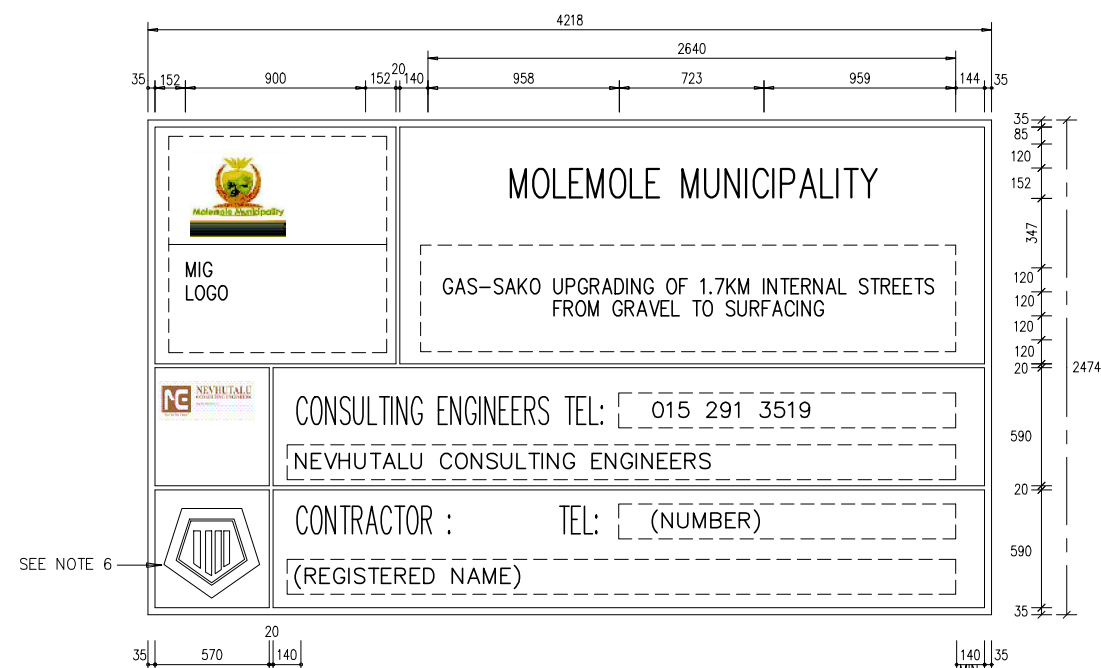
APPROVED BY	
FOR MM	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE



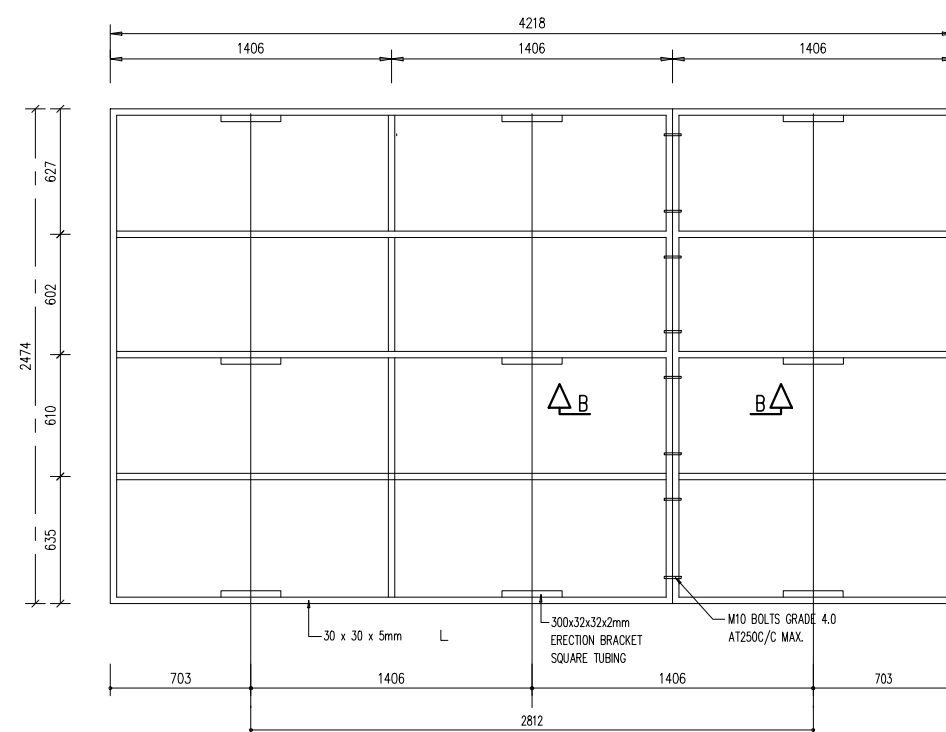
MOLEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOSWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	AS BUILT PLAN (FULL SIGNATURE)	SHEET 5 OF 15
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM DATE SCALE A1 AS SHOWN	
INFORMATION BOARD DETAILS	For CONSULTING ENGINEER DATE CONSULTANTS DWG. No.	MM DWG. No.
	0138-MM-005	MM-TECH-005



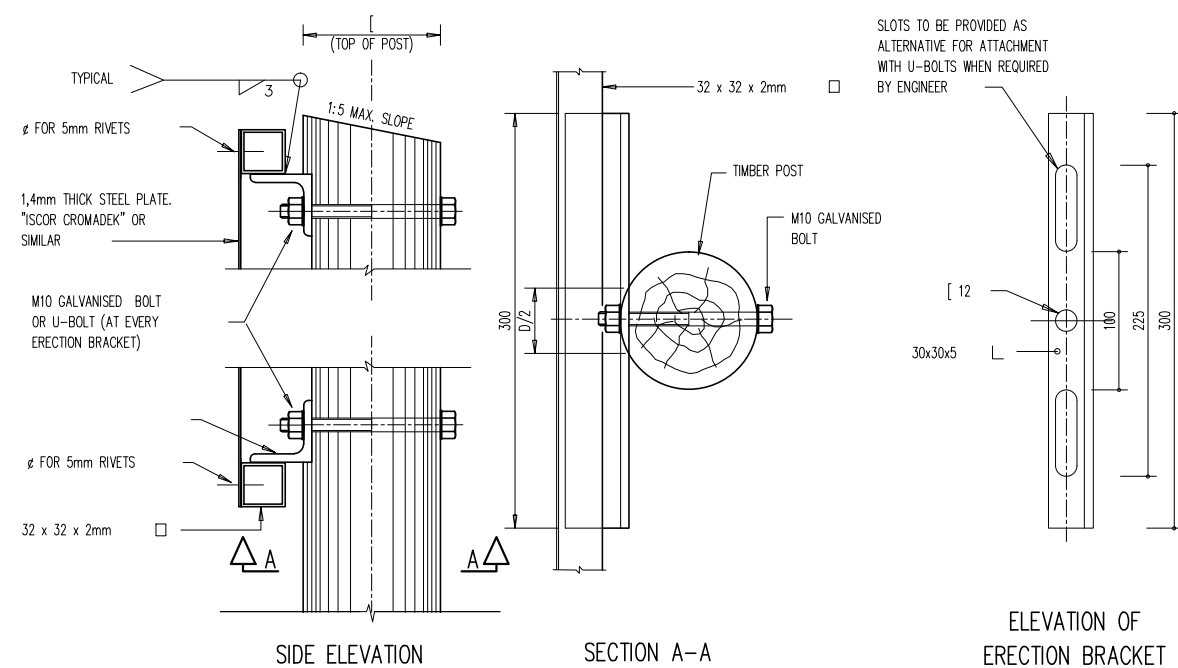


FRONT ELEVATION



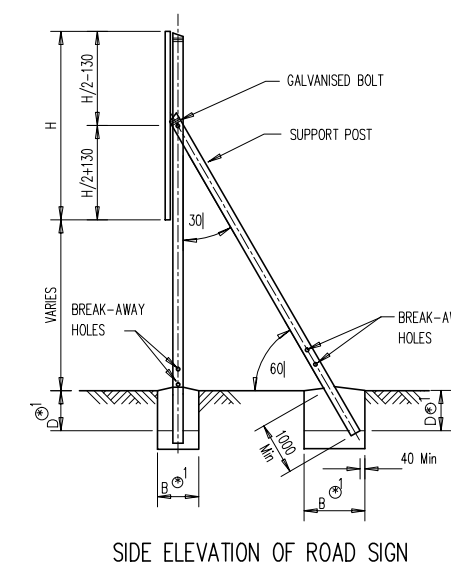
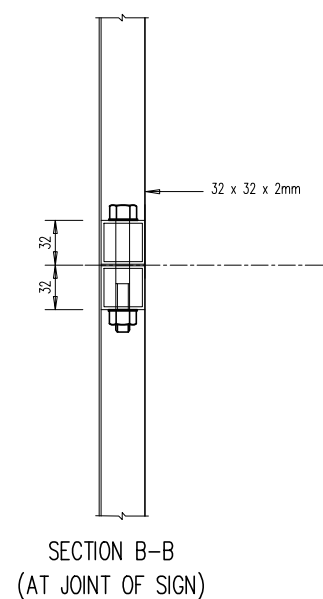
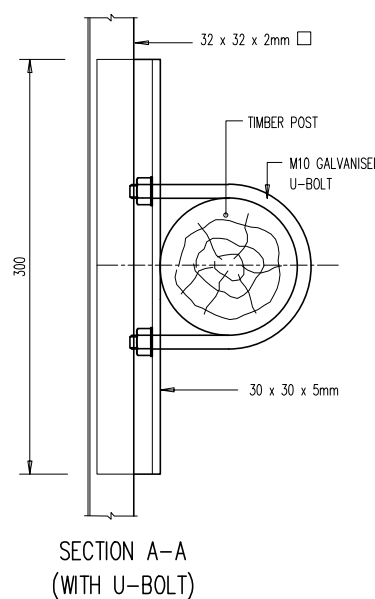
REAR SIDE BRACING

- NOTES:**
- EMBLEME:**  
1. ALL EMBLEMS TO BE DISPLAYED IN FULL COLOUR ON A SEM-MATT BACKGROUND.
- LETTERS AND NUMBERS:**  
2. DESCRIPTION : MATT-BLACK, SERIES DIN B LETTERS AND NUMBERS ON A SEM-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. SAFCOC EMBLEM ONLY IF CONTRACTOR IS A MEMBER OTHERWISE BLANK.
7. NEW SAACE LOGO TO BE OBTAINED FROM SAACE, JOHANNESBURG.

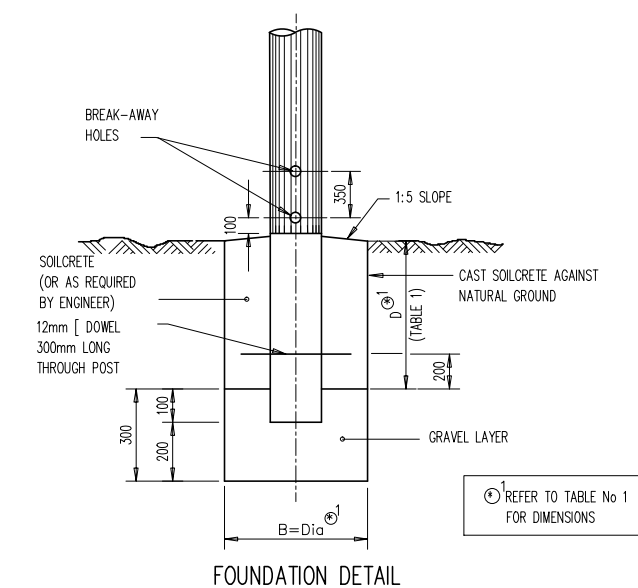


FIXING DETAIL FOR SIGN BOARDS

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	100mm	-	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

No.	DATE	REVISION	CONSULT	MM
3	05/2022	TENDER DRAWINGS	TN	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



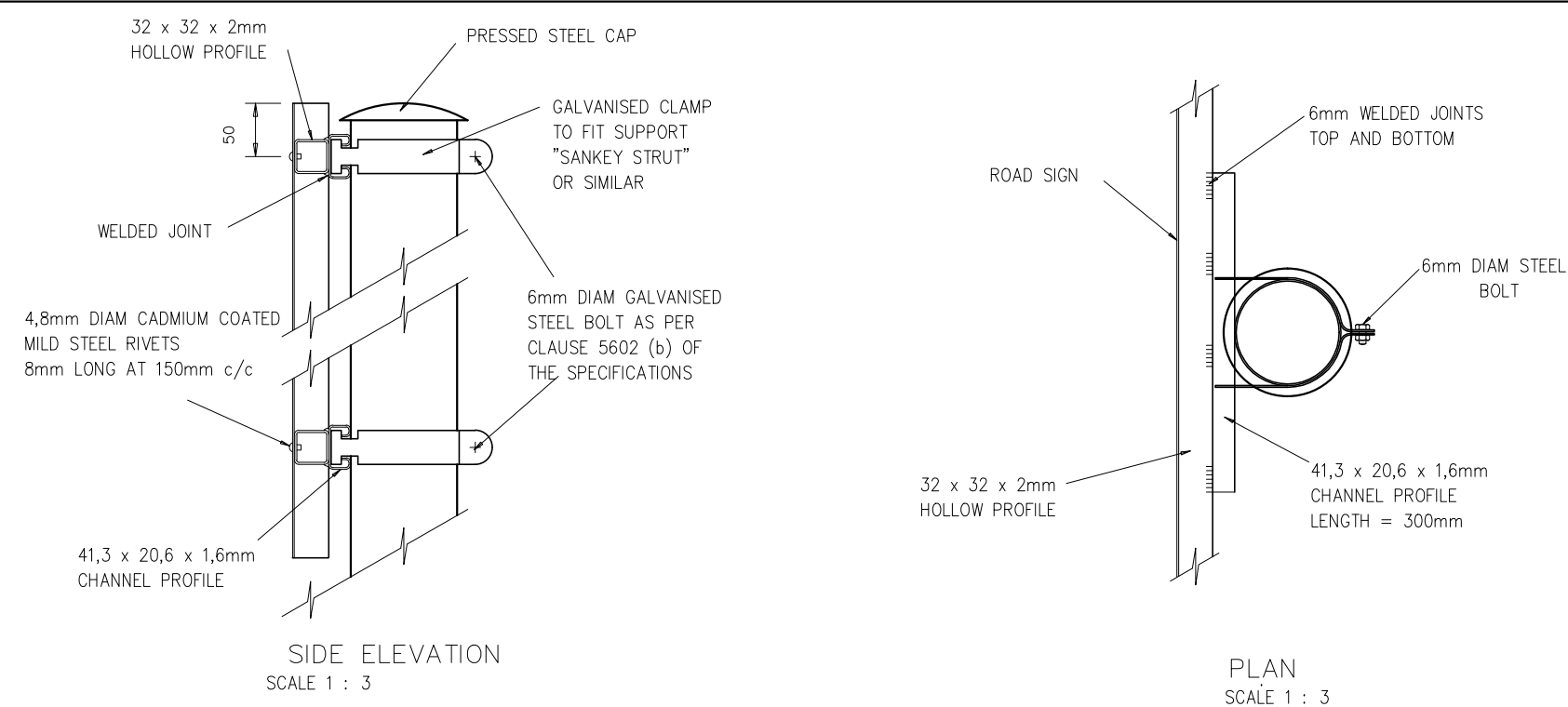
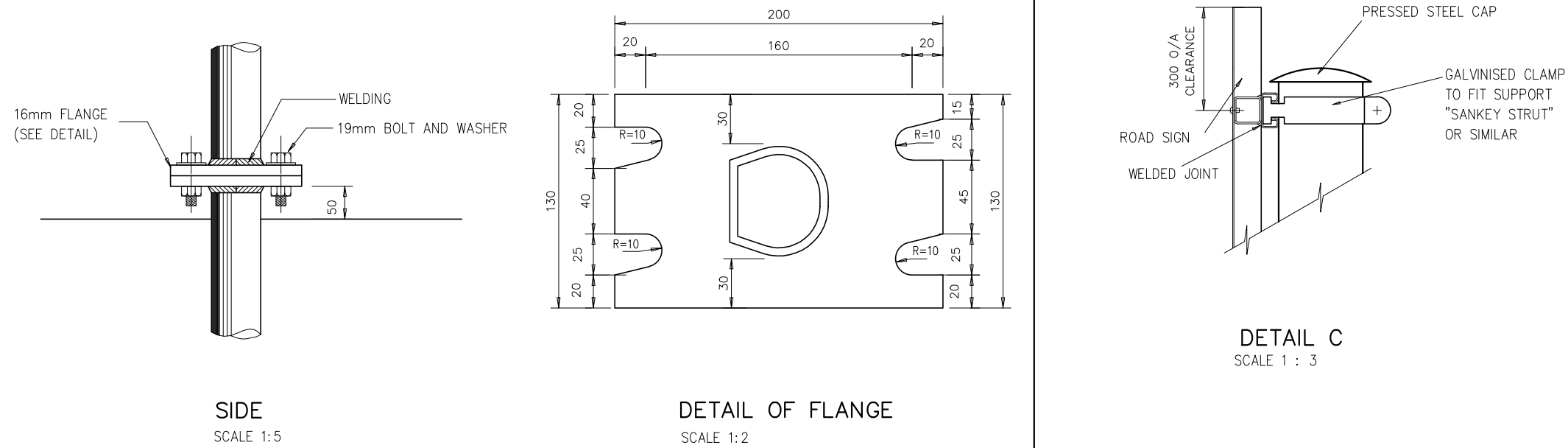
UNIT 10/JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

APPROVED BY	
FOR MM	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE



MOLEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOSWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	AS BUILT PLAN (FULL SIGNATURE)	SHEET 5 OF 15
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM DATE	SCALE A1 AS SHOWN
INFORMATION BOARD DETAILS	For CONSULTING ENGINEER DATE	MM DWG. No.
	0138-MM-005	MM-TECH-005



3	05/2022	TENDER DRAWINGS	IN	
No.	DATE	REVISION	CONSULT.	M/LM

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10,JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: [admin@nevhutalu.co.za](mailto:admin@nevhutalu.co.za)

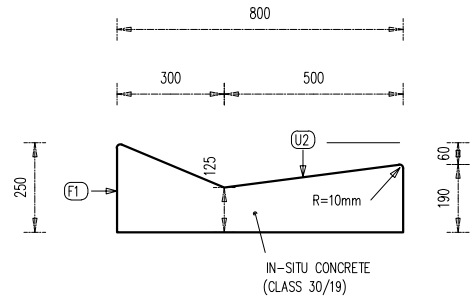
APPROVED BY	
	DATE
DESIGN APPROVED	
	DATE



MOLEMOLE LOCAL MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

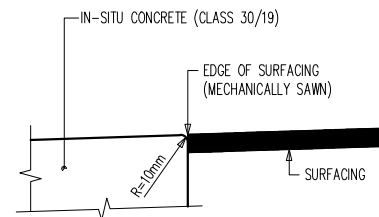
CONTRACT NO.:TECH-006/2022/23
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING
ROAD SIGN ERECTION DETAILS

<b>AS BUILT PLAN</b> (FULL SIGNATURE)		SHEET    6    OF    15	
_____ For MLM		_____ DATE	
_____ For CONSULTING ENGINEER		_____ DATE	
CONSULTANT'S DWG. No.,		MLM DWG. No.	
<b>0138-MLM-006</b>		<b>MLM-TECH-006</b>	

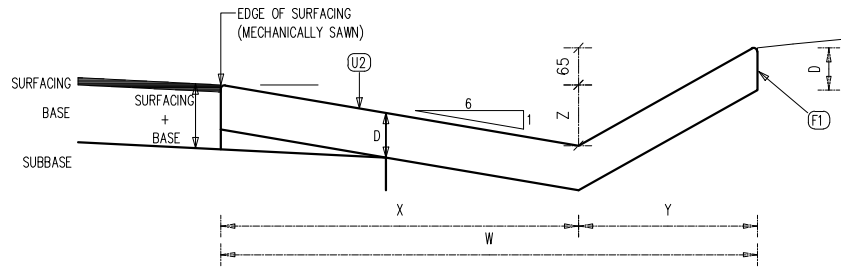


CROSS SECTION OF TYPE "A"  
CONCRETE SIDE DRAIN  
SCALE 1:10

TYPE "A" CONCRETE SIDE DRAIN

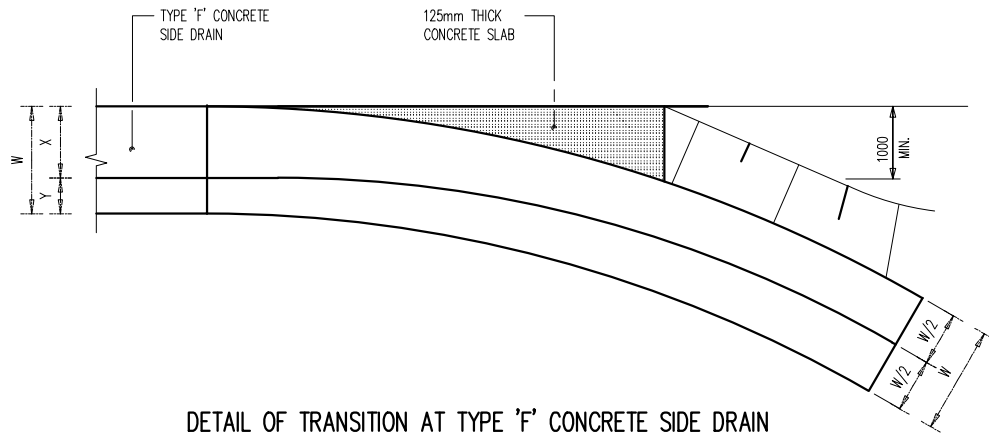


DETAIL X  
SCALE 1:5



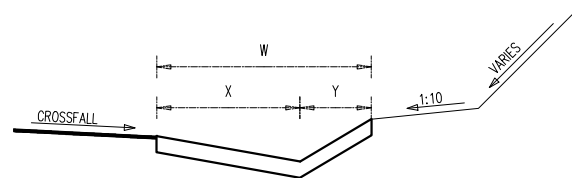
CROSS SECTION OF TYPE 'F' CONCRETE SIDE DRAIN IN CUTTINGS

SCALE : SCHEMATIC



DETAIL OF TRANSITION AT TYPE 'F' CONCRETE SIDE DRAIN

SCALE : SCHEMATIC

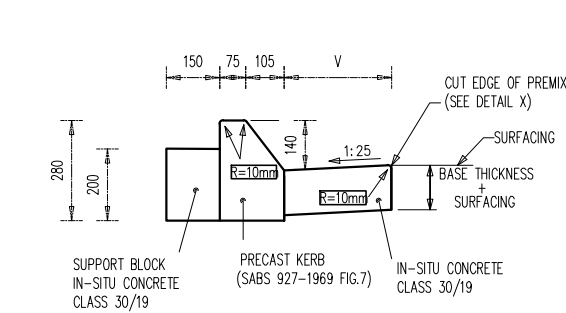


POSITION OF TYPE 'F' CONCRETE SIDE DRAIN

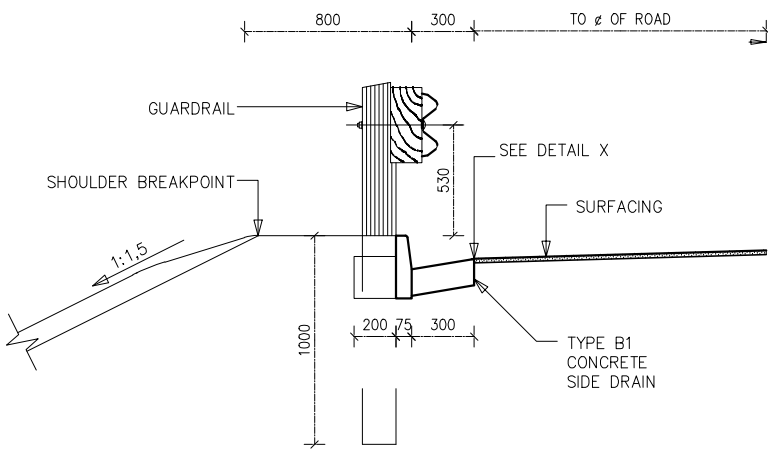
SCALE : SCHEMATIC

CASE(n)	W	X	Y	Z	D	VOLUME m <sup>3</sup> /m
1	1000	670	330	110	125	0.1250
2	1500	1000	500	170	125	0.1875
3	2000	1330	670	220	150	0.3000
4	2500	1670	830	280	150	0.3750

DIMENSIONS OF TYPE F CONCRETE CHANNELS

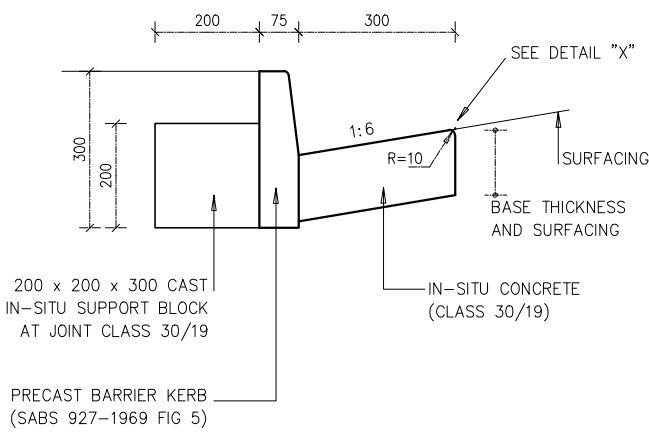


CROSS SECTION OF TYPE B SEMI MOUNTABLE KERB  
AT INTERSECTIONS  
SCALE 1:10



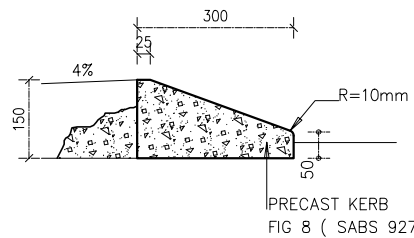
POSITION OF TYPE "B1" CONCRETE SIDE DRAIN

SCALE 1:25

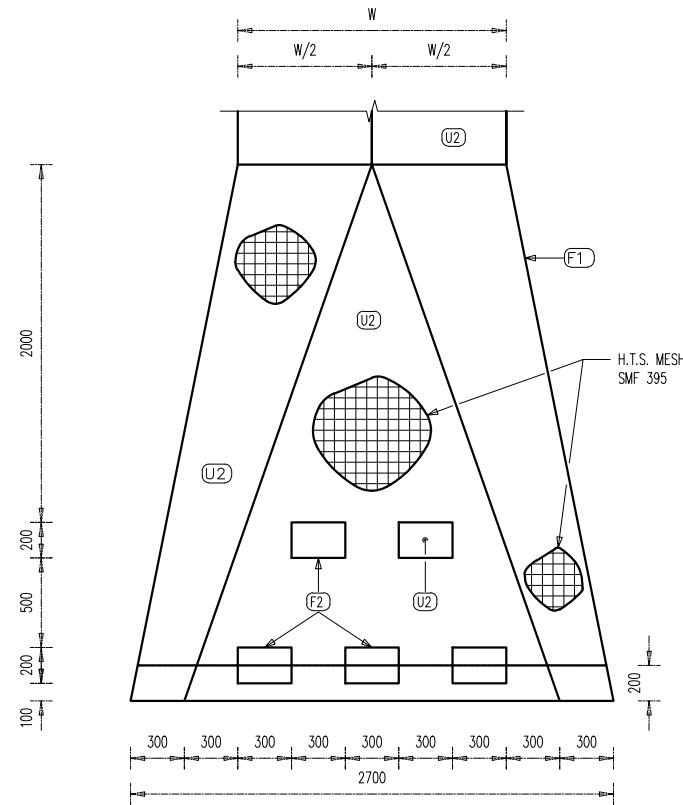


TYPE B1 KERB  
SECTION THROUGH BARRIER KERB (FIG 5)  
SCALE 1:10

TYPE "B" CONCRETE SIDE DRAIN

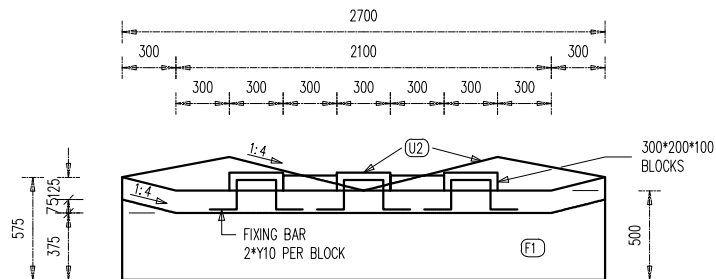


TYPE B2 KERB  
(1:10)



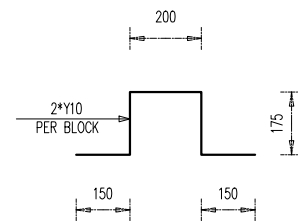
PLAN OF ENERGY BREAKER

SCALE 1:20



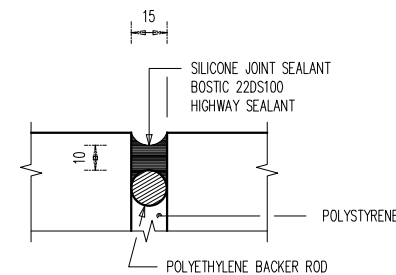
FRONT ELEVATION OF ENERGY BREAKER

SCALE 1:20



FIXING BAR

SCALE 1:10

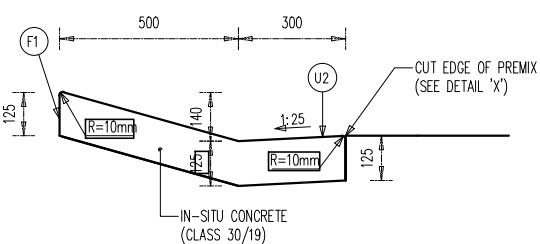


EXPANSION JOINT

SCALE : SCHEMATIC

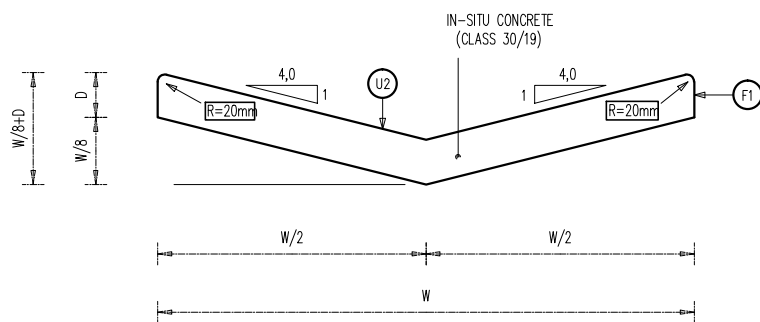
NOTE: EXPANSION JOINT  
EVERY 5th PANEL (10m)

- NOTES
1. ALL CONCRETE CHANNELS AND OTHER DRAINAGE STRUCTURES ON THIS PLAN TO BE CAST USING CLASS 30/19 CONCRETE
  2. TYPES 'E' AND 'F' CONCRETE MUST BE CAST IN ALTERNATIVE LENGTHS OF 2.0 m MAXIMUM WITH EXPANSION JOINTS EVERY 5th PANEL (10 m)
  3. ALL EXPOSED CORNERS MUST BE ROUNDED OFF TO A RADIUS OF 10 mm
  4. THE CLASS OF SURFACE FINISH IS INDICATED AS 'F1' OR 'U2'
  5. V MIN. = 150mm (PREFERRED = 300mm)



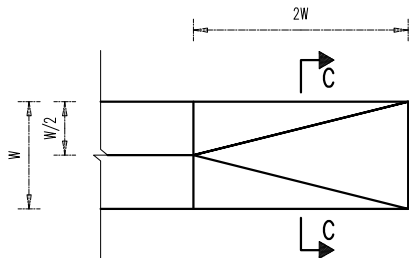
CROSS SECTION OF TYPE C MOUNTABLE KERB  
AT RURAL INTERSECTIONS  
SCALE 1:10

TYPE "C" CONCRETE SIDE DRAIN



CROSS SECTION OF TYPE E CONCRETE CHANNEL IN OPEN DRAINS

SCALE : SCHEMATIC

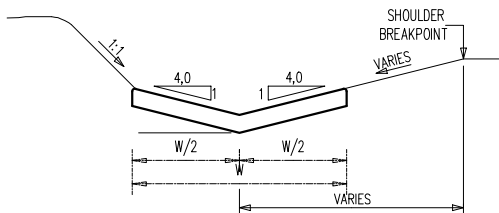


BEGINNING OF TYPE 'E' CONCRETE DRAIN

SCALE : SCHEMATIC

SECTION C-C

SCALE 1:50



POSITION OF TYPE 'E' CONCRETE DRAIN  
IN SHALLOW CUT

SCALE : SCHEMATIC

CASE(n)	W	W/2	W/8	D	W/8+D	VOLUME m <sup>3</sup> /m
1	1000	500	125	125	250	0.1250
2	1500	750	188	125	313	0.1875
3	2000	1000	250	150	400	0.3000
4	2500	1250	313	150	463	0.3750

DIMENSIONS OF TYPE E CONCRETE CHANNELS

No.	DATE	REVISION	CONSULT	MM
3	05/2022	TENDER DRAWINGS	TN	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10/JCU LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

APPROVED BY	
FOR MM	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE

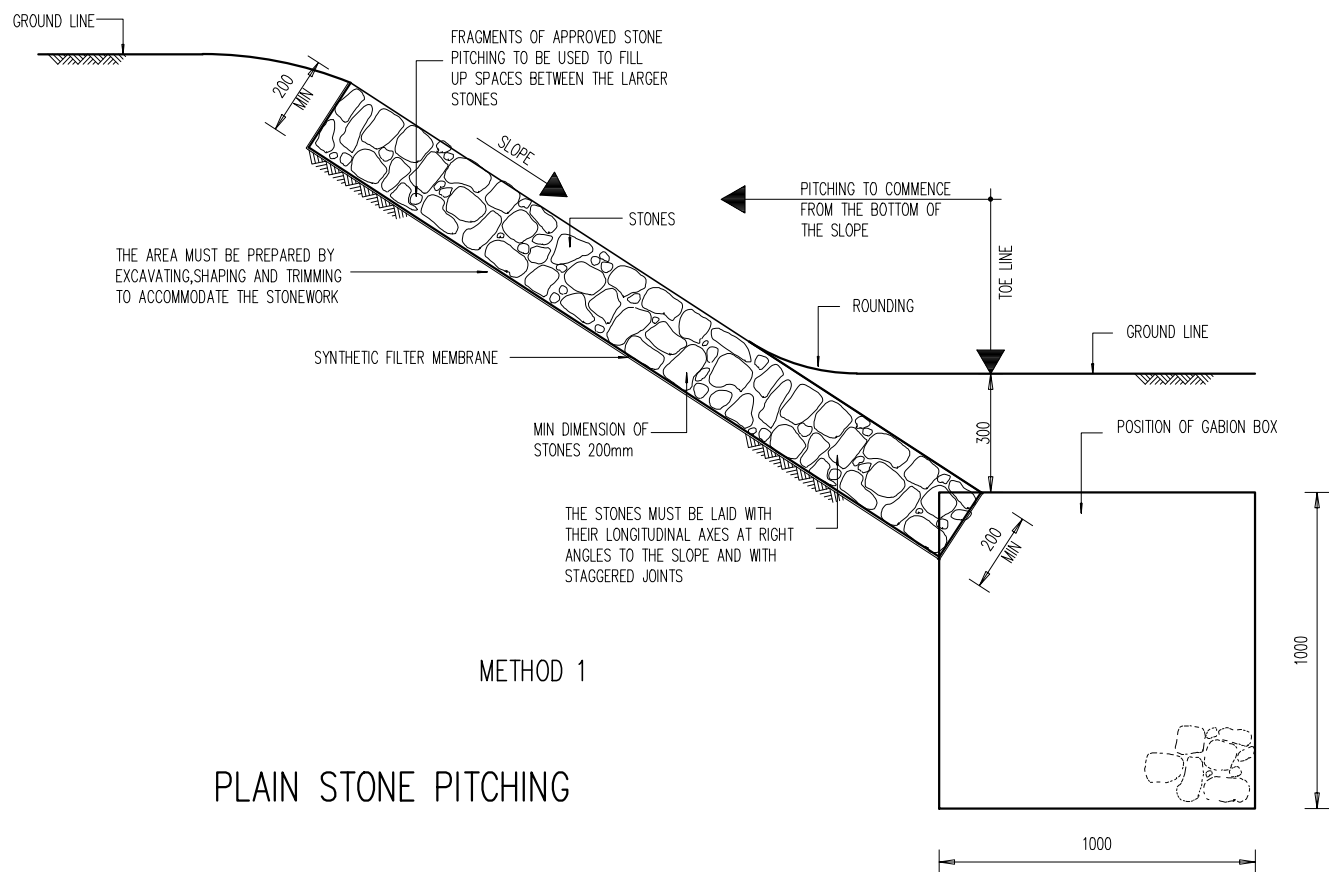


MOEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGOWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING
TYPICAL DETAIL OF CONCRETE SIDES DRAINS, KERBS AND ENERGY BREAKERS

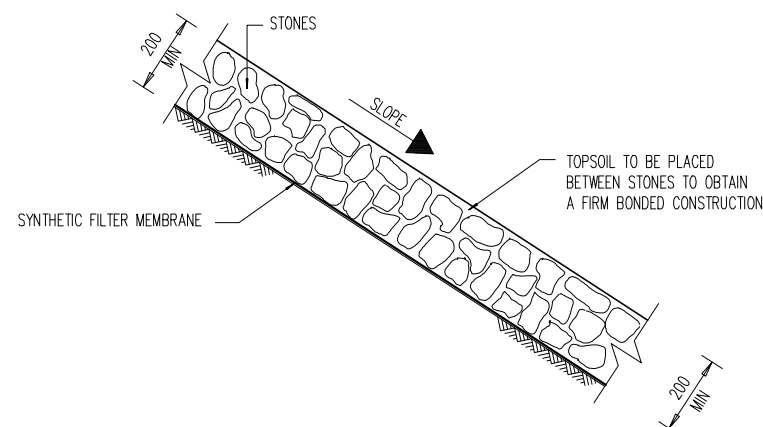
AS BUILT PLAN (FULL SIGNATURE)	SHEET 7 OF 15
For MM	DATE
For CONSULTING ENGINEER	DATE
CONSULTANTS DWG. No.	MM DWG. No.
0138-MM-007	MM-TECH-007





METHOD 1

## PLAIN STONE PITCHING

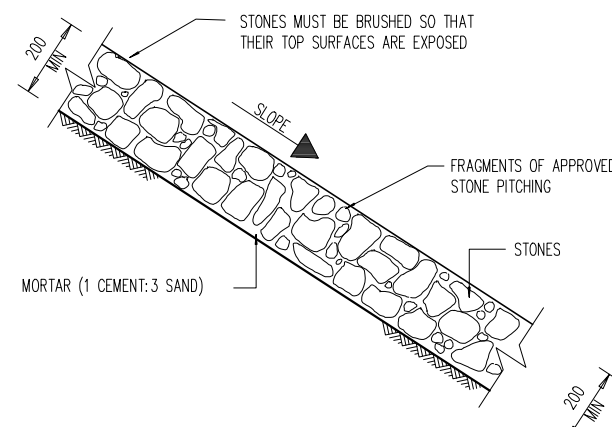


METHOD 2

### NOTES:

THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTIONS:

1. NO SMALL STONES SHALL BE USED TO FILL THE SPACES BETWEEN THE LARGER STONES.
2. TOPSOIL SHALL BE INTRODUCED BETWEEN INDIVIDUAL STONES SIMULTANEOUSLY WITH PLACING OF STONES.
3. ROOTED GRASS OR GRASS TUFTS SHALL THEN BE PLACED IN THE TOPSOIL.

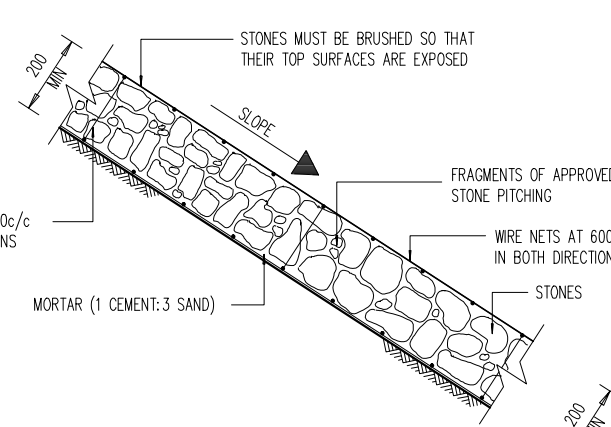


GROUTED STONE PITCHING

### NOTES:

THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTION:

1. THE SPACES BETWEEN THE STONES SHALL BE FILLED WITH MORTAR.

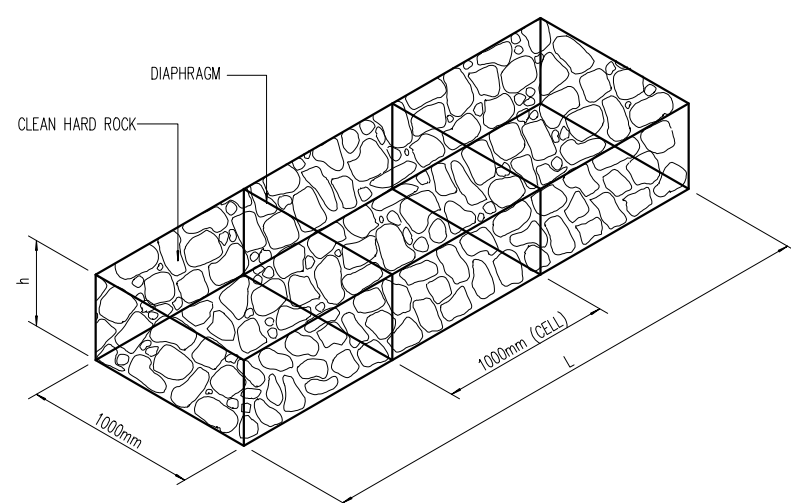


WIRE AND GROUTED STONE PITCHING

### NOTES:

THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTIONS:

1. PITCHING IN ACCORDANCE WITH GROUTED STONE PITCHING.
2. CONSTRUCTION SHALL BE AS FOLLOWS:
  - a) PLACING OF BOTTOM WIRE NET.
  - b) ATTACHING OF WIRE TIES TO BOTTOM MESH.
  - c) PITCHING.
  - d) PLACING THE TOP WIRE NET AND FASTENING WIRE TIES.
  - e) GROUTING.

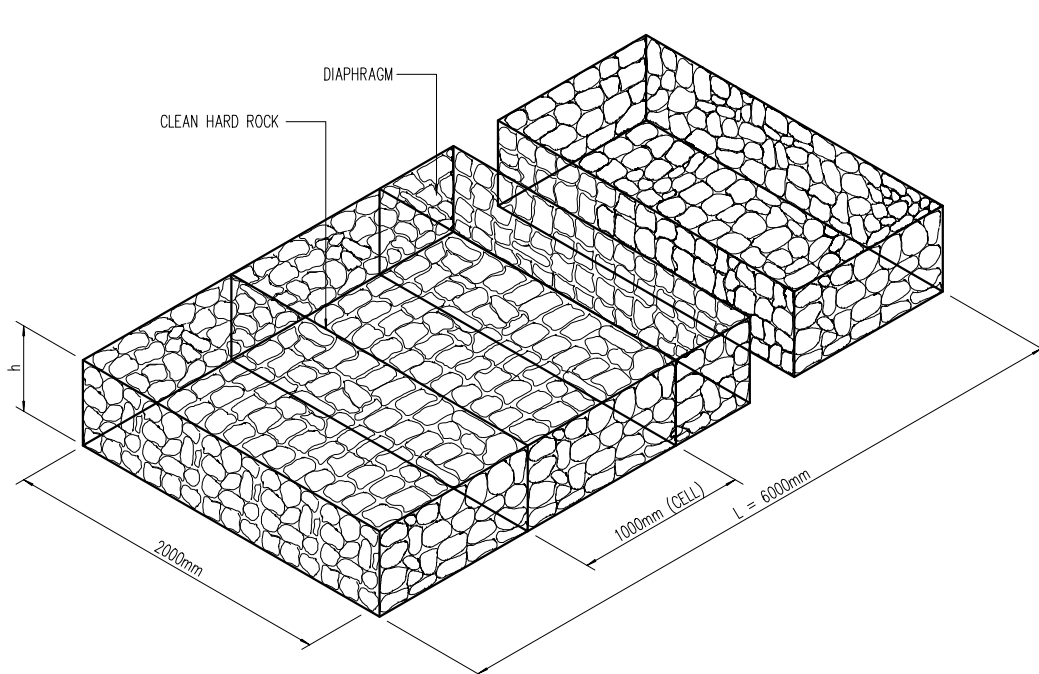
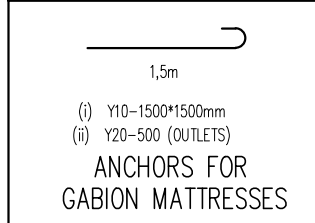


BOXES

STANDARD SIZES OF BOXES	
LENGTH	1000mm, 2000mm, 3000mm, 4000mm
WIDTH	1000mm
DEPTH	500mm, 1000mm
DIAPHRAGM SPACING	1000mm

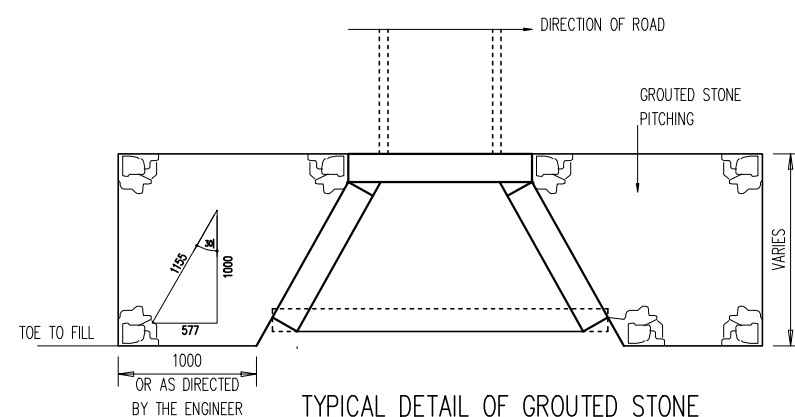
ROCK USED FOR THE FILLING OF CAGES		
DEPTH OF CAGES	ROCK SIZE (DIMENSIONS)	
	MIN. (mm)	MAKS. (mm)
230	100	125
300	100	200
500	100	250
1000	100	300

MESH SIZE AND WIRE DIAMETER FOR CAGES		
DEPTH OF GABION	MESH SIZE (mm)	WIRE DIA. (mm)
500mm AND OVER	80 x 100	2,7
200mm TO 300mm	80 x 100	2,5

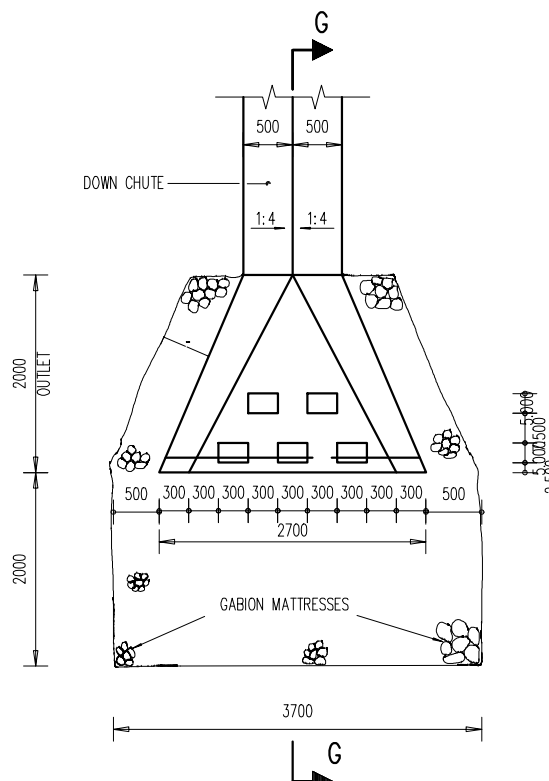


MATTRESSES

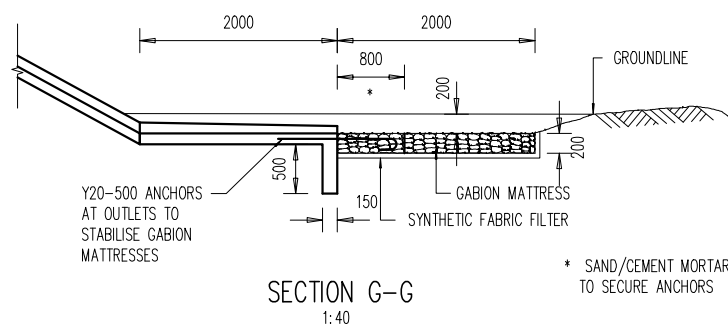
STANDARD SIZES	
LENGTH	6000mm
WIDTH	2000mm
DEPTH	170mm, 230mm, 300mm



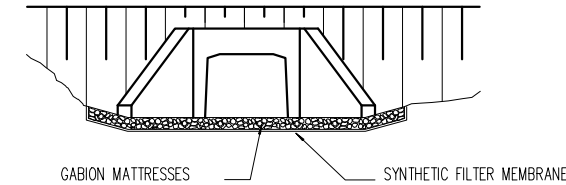
TYPICAL DETAIL OF GROUTED STONE PITCHING ADJACENT TO WINGWALLS  
N.T.S.



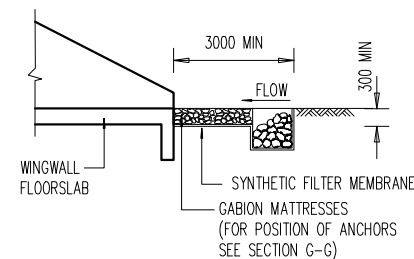
PLAN OF DOWN CHUTE AND ENERGY BREAKER  
1:40



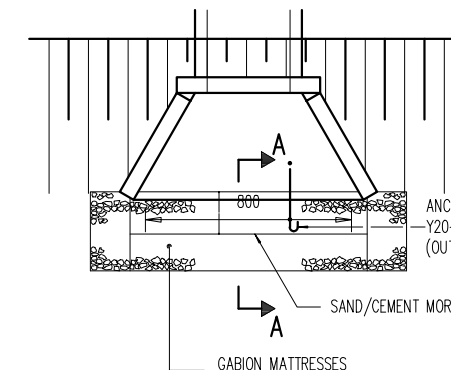
SECTION G-G  
1:40



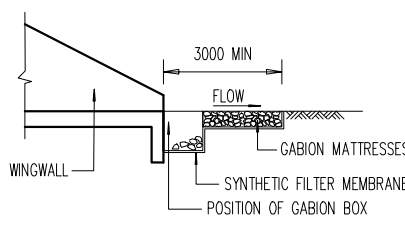
ELEVATION OF INLET/OUTLET



SECTION A-A (INLET)

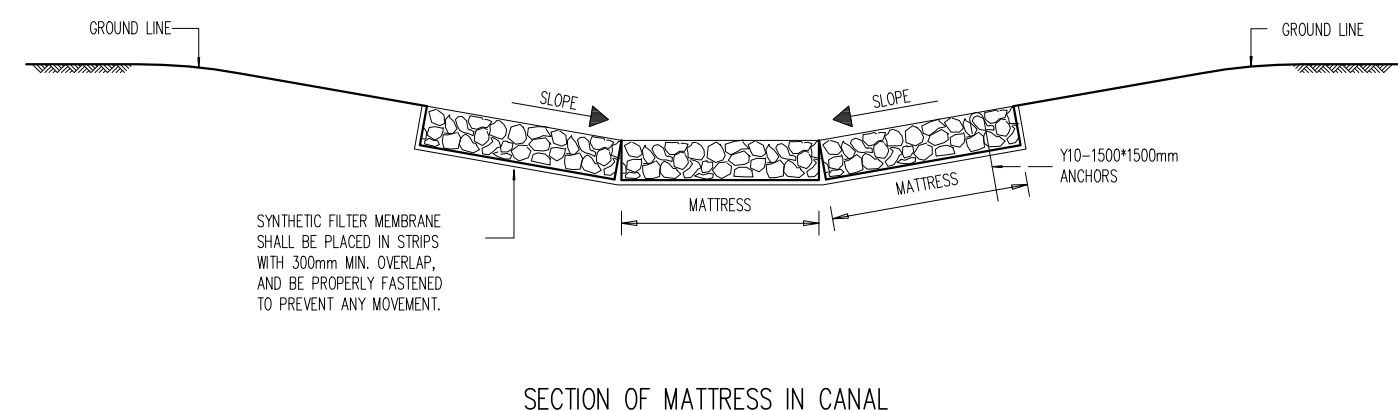


PLAN OF INLET/OUTLET



SECTION A-A (OUTLET)

## DETAIL OF GABION MATTRESSES AND BOXES AT INLETS AND OUTLETS



SECTION OF MATTRESS IN CANAL

3	05/2022	TENDER DRAWINGS	TN
No.	DATE	REVISION	CONSULT. MM

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10/JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

APPROVED BY	
FOR MM	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE



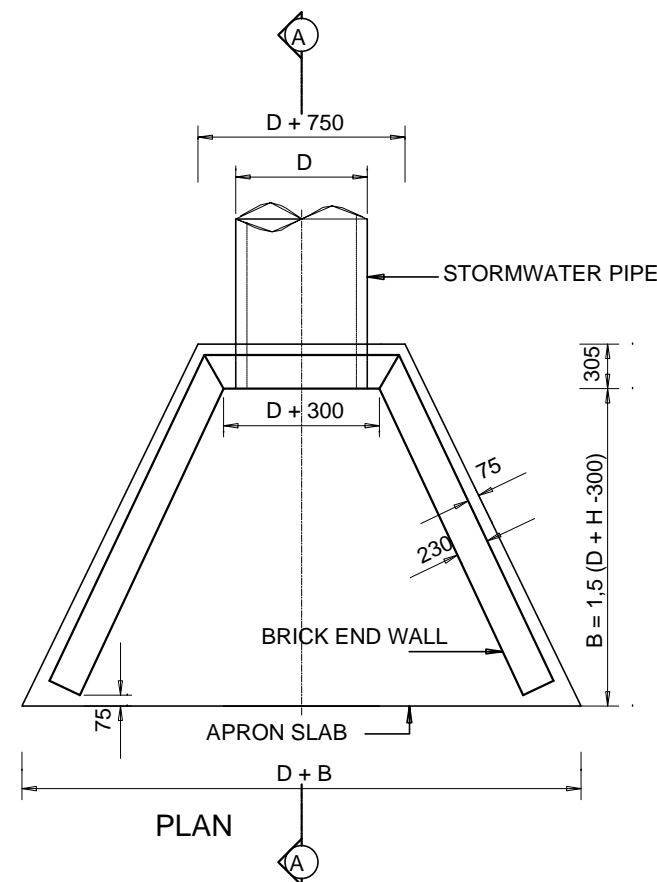
MOLEMOLÉ MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADE  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	AS BUILT PLAN (FULL SIGNATURE)	SHEET 8 OF 15
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM DATE	SCALE A1 AS SHOWN
STONE PITCHING AND GABION PROTECTION DETAILS	For CONSULTING ENGINEER DATE	MM DWG. No.
	0138-MM-008	MM-TECH-008



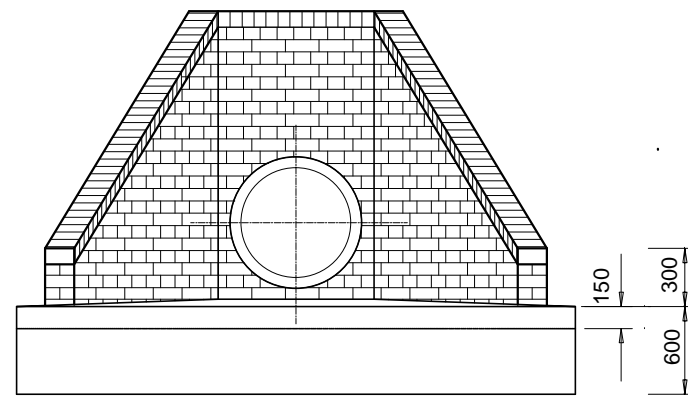




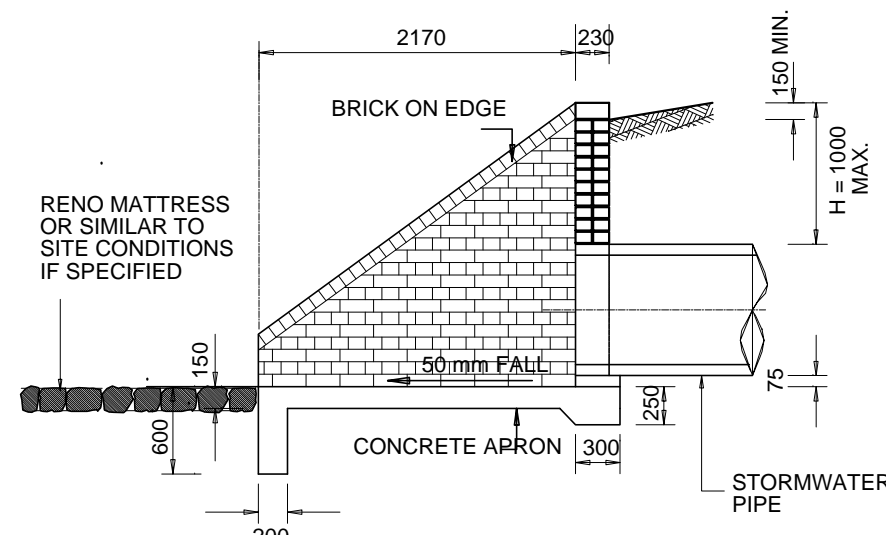


#### NOTES

1. THE MATERIAL FOR A DEPTH OF 150mm UNDER THE APRON SLAB MUST BE COMPACTED TO A MINIMUM DENSITY OF 90 % OF THE MOD. AASHTO DENSITY.
2. ALL CONCRETE TO BE CLASS 20/19.
3. ONLY BRICKS OF AN ENGINEERING STANDARD IN ENGLISH BOND WITH POINTING MUST BE USED.
4. ENERGY BREAKERS MUST BE PROVIDED ACCORDING TO DRG JRA-SD-S018 WHEN REQUIRED BY THE ENGINEER
5. THIS OUTLET STRUCTURE ONLY TO BE USED WHEN PIPE SIZE IS LESS THAN 600 mm dia. REFER TO JRA-SD-S018

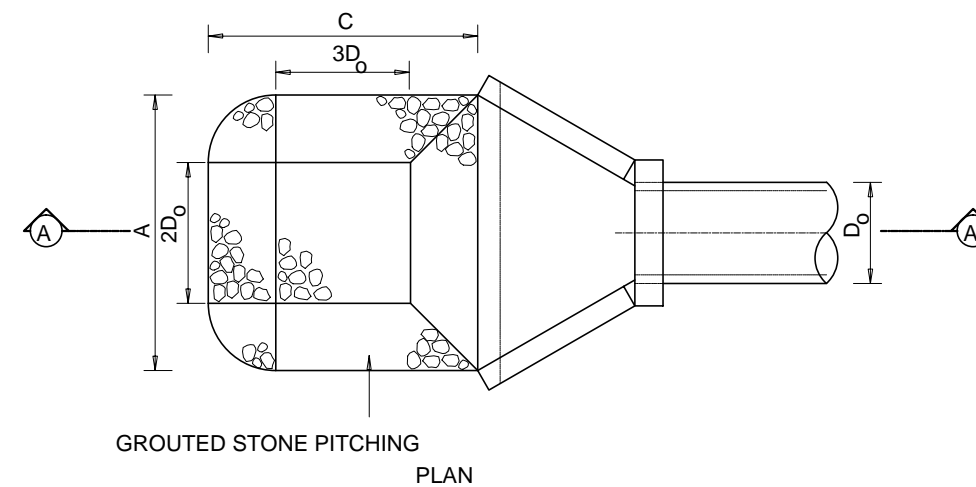


FRONT ELEVATION

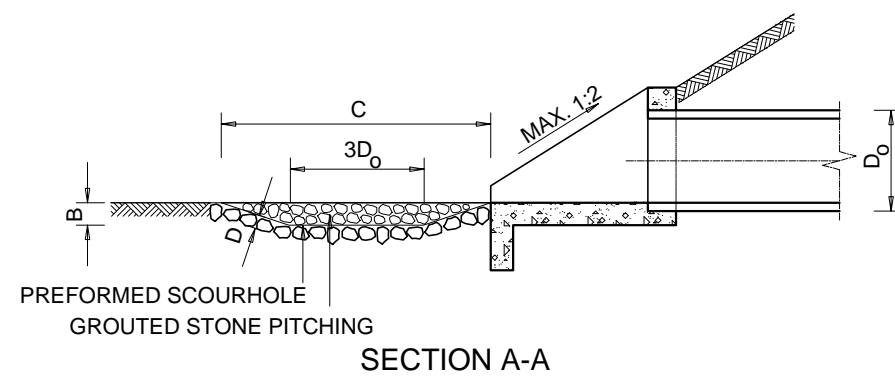


SECTION A-A

DETAIL OF TYPICAL BRICK OUTLET STRUCTURE

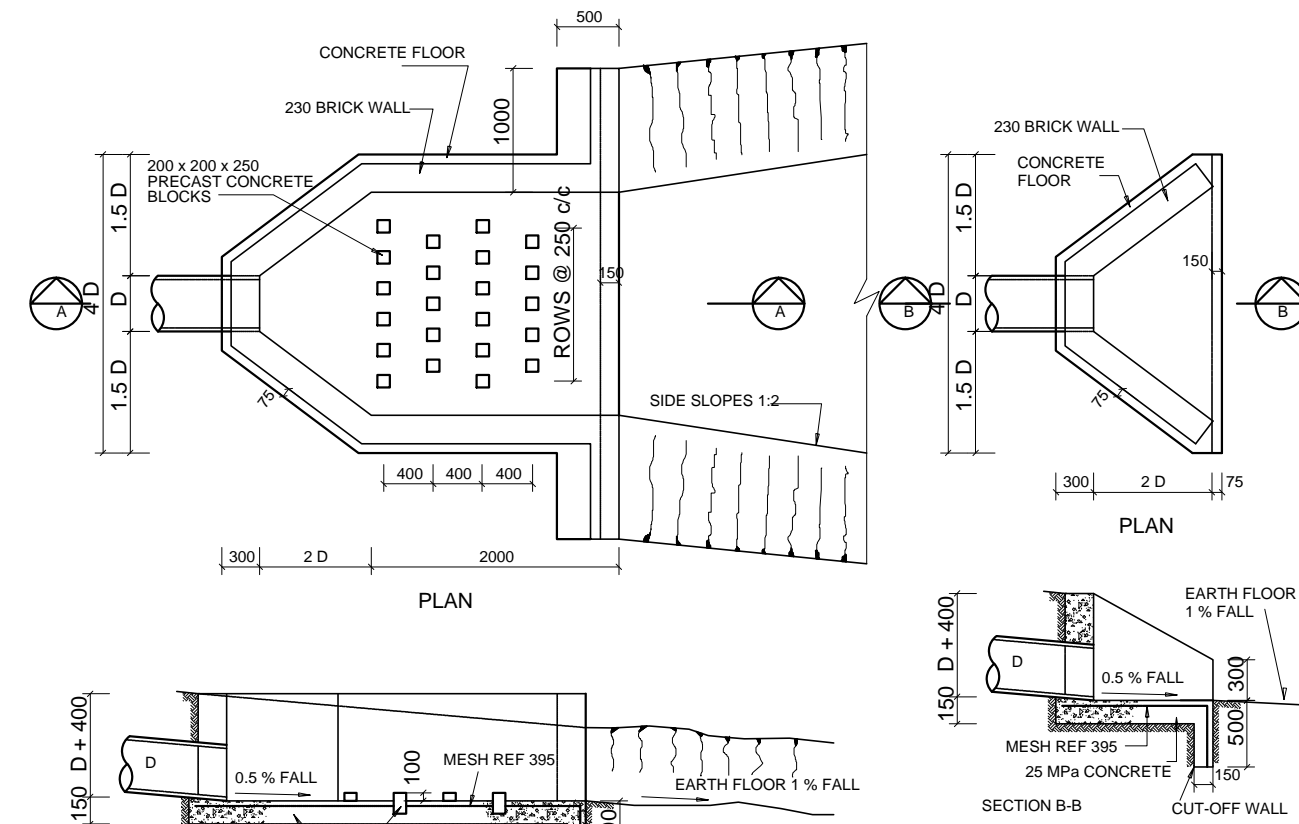


GROUTED STONE PITCHING PLAN



SECTION A-A

EROSION PROTECTION AT OUTLET STRUCTURES



SECTION A-A  
ENERGY DISSIPATION OUTLET

- NOTE:
1. ONE LAYER OF MESH REF 395 TO BE PLACED ON FLOOR AND CUT-OFF WALL AS SHOWN WITH 25mm COVER AND MIN. LAP LENGTH OF 350mm.
  2. PRECAST CONCRETE BLOCKS IN ENERGY DISSIPATING OUTLETS TO BE CHAMFERED ON EXPOSED EDGES.

TYPICAL OUTLET STRUCTURE DETAILS

#### NOTES

1. REFER TO DRG. JRA-SD-S018 OR JRA-SD-S026 FOR DETAILS OF THE OUTLET STRUCTURE.
2. GROUTED STONE PITCHING TO BE DONE ACCORDING TO THE SABS 1200 STANDARDIZED SPECIFICATIONS.
3.  $D_o$  = HEIGHT OF OUTLET PIPE CULVERT/BOX CULVERT.

DIMENSIONS		
FOR SHALLOW STILLING BASIN (SEE NOTE)	DIMENSIONS	FOR DEEP STILLING BASIN (SEE NOTE)
$0.0552 \left( \frac{Q^{1.333}}{D_o^{2.333}} \right)$ (m)	$D_{50}$	$0.0362 \left( \frac{Q^{1.333}}{D_o^{2.333}} \right)$ (m)
$5D_o$ (m)	A	$8D_o$ (m)
$0.5 D_o$ (m)	B	$D_o$ (m)
$6D_o$ (m)	C	$9D_o$ (m)
$2D_{50}$ (m)	D	$2D_{50}$ (m)
NOTE: REFER TO THE "NATIONAL TRANSPORT COMMISSION HANDBOOK FOR ROAD DRAINAGE" FOR THE APPLICABILITY OF THE VARIOUS TYPES OF EROSION PROTECTION		

3	05/2022	TENDER DRAWINGS	TN	
No.	DATE	REVISION	CONSULT	MM

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10/JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

#### APPROVED BY

FOR MM DATE

DESIGN APPROVED

FOR CONSULTING ENGINEER DATE



MOLEMOLÉ MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23

CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM  
INTERNAL STREETS FROM GRAVEL TO SURFACING

DETAILS OF OUTLET STRUCTURES

AS BUILT PLAN  
(FULL SIGNATURE)

For MM DATE

For CONSULTING ENGINEER DATE

CONSULTANTS DWG. No.

0138-MM-011

SHEET 11 OF 15

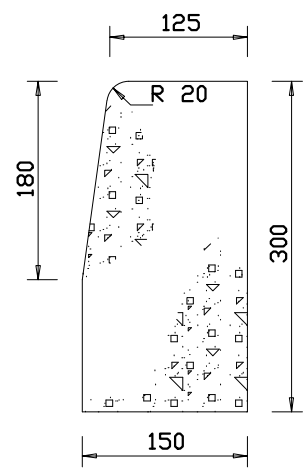
SCALE

A1 AS SHOWN

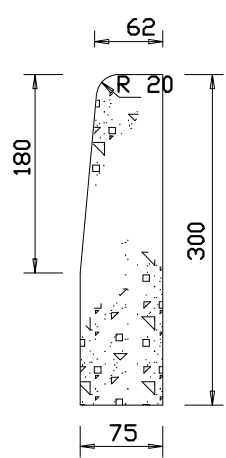
MM DWG. No.

MM-TECH-011

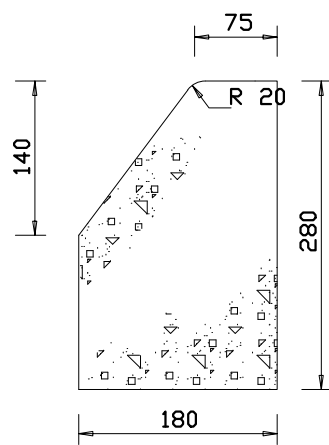




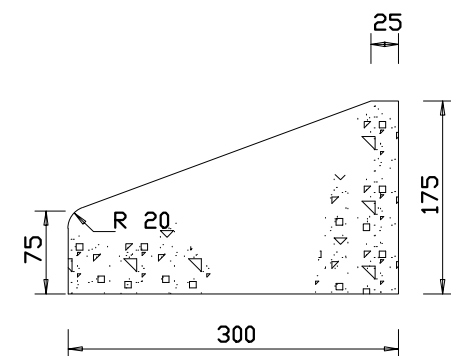
**BARRIER KERB**  
SABS (FIG. 3)  
Can also be used  
as mountable kerbs



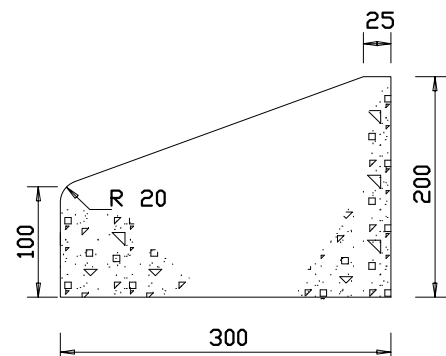
**RECTANGULAR**  
SABS (FIG. 5)



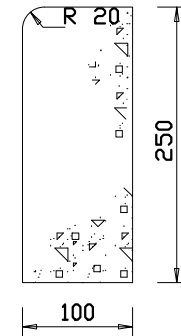
**SEMI-MOUNTABLE KERB**  
SABS (FIG. 7)  
For use in medians only



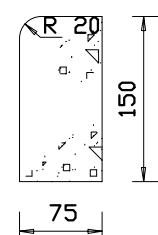
**MOUNTABLE KERB**  
SABS (FIG. 8b)



**MOUNTABLE KERB**  
SABS (FIG. 8c)  
Industrial use



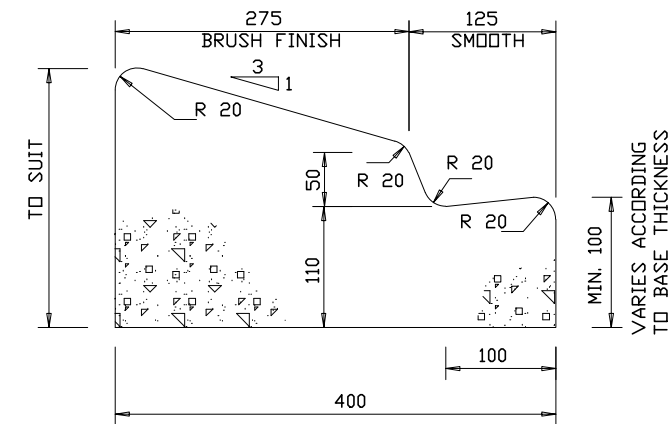
**RECTANGULAR**  
SABS (FIG.10)  
For high side kerbing  
in low cost developments



**RECTANGULAR**  
SABS (FIG.12)  
Edge restraints for  
paving blocks

**NOTES:**

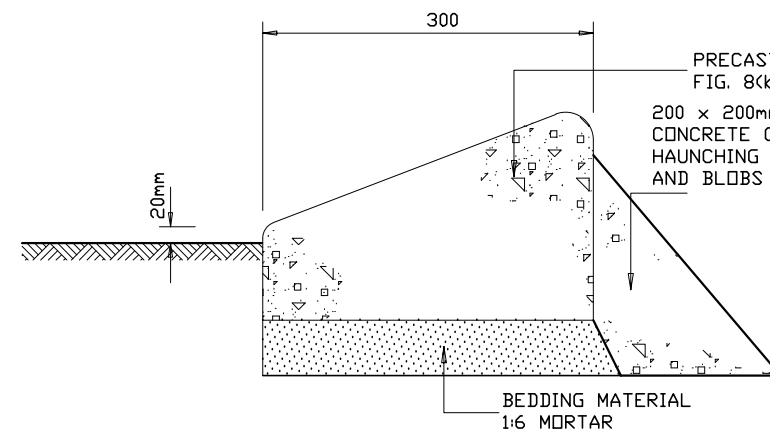
1. MOUNTABLE KERBS TO BE FIG.8B UNLESS OTHERWISE SPECIFIED
2. ALL KERB SHAPES AND STRENGTH TO COMPLY WITH SABS 927.
3. ALL KERBING ON CURVES TO BE CONTINUOUSLY HAUNCHED, KERBS ON STRAIGHT SECTIONS HAUNCHED ONLY AT JOINTS.
4. REFLECTIVE KERBING TO BE USED WHERE EXTRA SAFETY IS REQUIRED



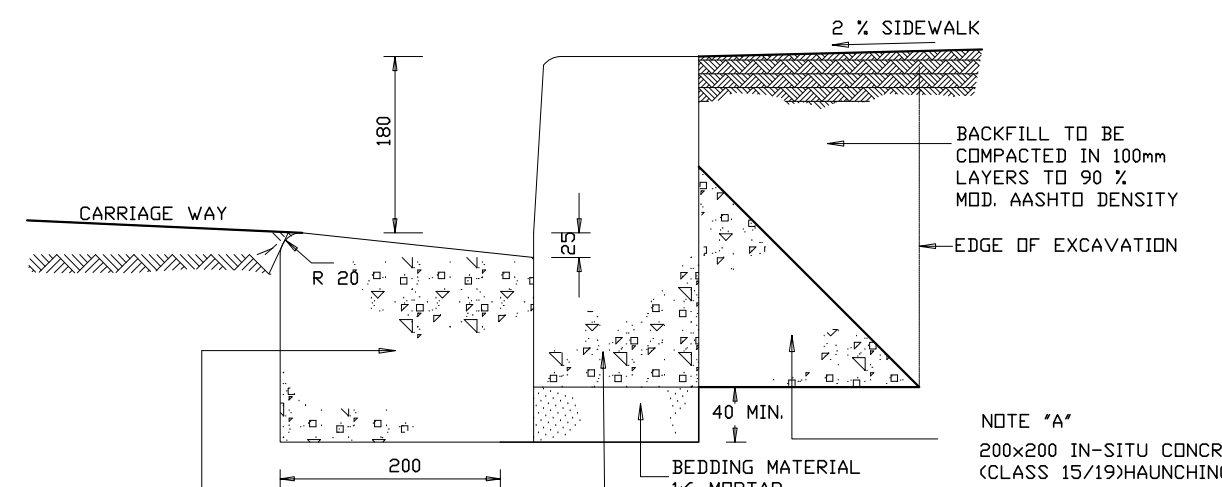
**CAST IN-SITU MOUNTABLE KERB WITH GUTTER**  
Only to be used when no alternative exists

**NOTES**

1. MINIMUM CONCRETE STRENGTH OF ALL CAST IN-SITU KERBS TO BE CLASS 25/19.
2. CONCRETE CUTTER TO HAVE A STEEL TROWEL FINISH

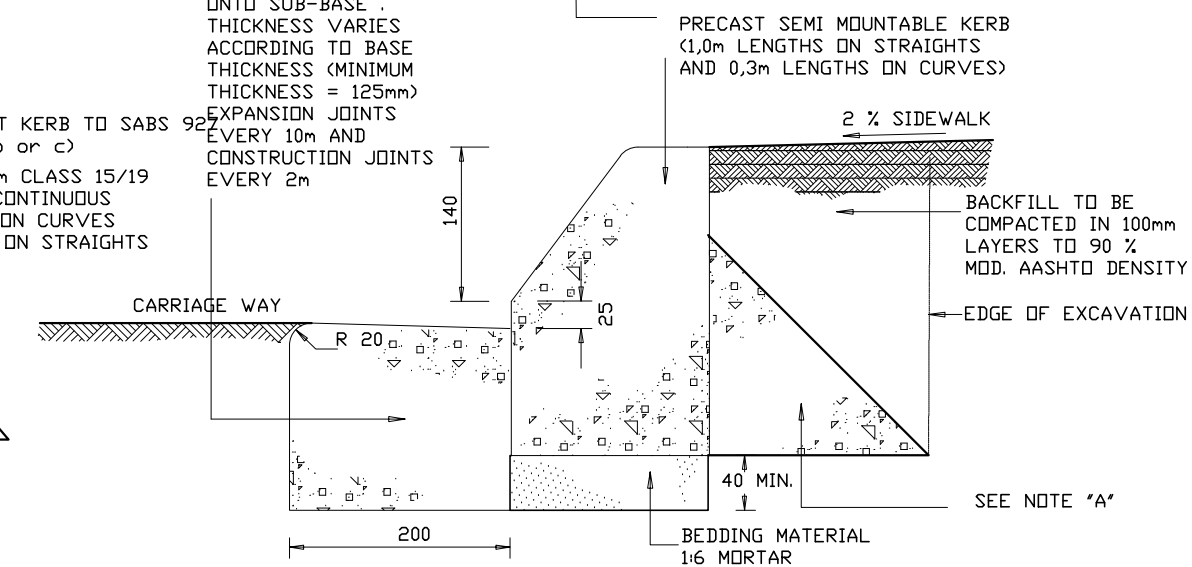


**PRECAST MOUNTABLE KERB (FIG. 8B OR 8C)**



**DETAIL OF BARRIER KERB (FIG. 3)**

CLASS 25/19 CAST IN-SITU CONCRETE GUTTER CAST ONTO SUB-BASE. THICKNESS VARIES ACCORDING TO BASE THICKNESS (MINIMUM THICKNESS = 125mm) EXPANSION JOINTS EVERY 10m AND CONSTRUCTION JOINTS EVERY 2m



**DETAIL OF SEMI-MOUNTABLE KERB (FIG. 7)**

NOTE 'A'  
200x200 IN-SITU CONCRETE (CLASS 15/19) HAUNCHING CONTINUOUS BEHIND KERBING ON CURVES AND ONLY AT JOINTS ON STRAIGHTS

BACKFILL TO BE COMPACTED IN 100mm LAYERS TO 90 % MOD. AASHTO DENSITY

SEE NOTE 'A'

No.	DATE	REVISION	CONSULT.	MM
3	05/2022	TENDER DRAWINGS	TN	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



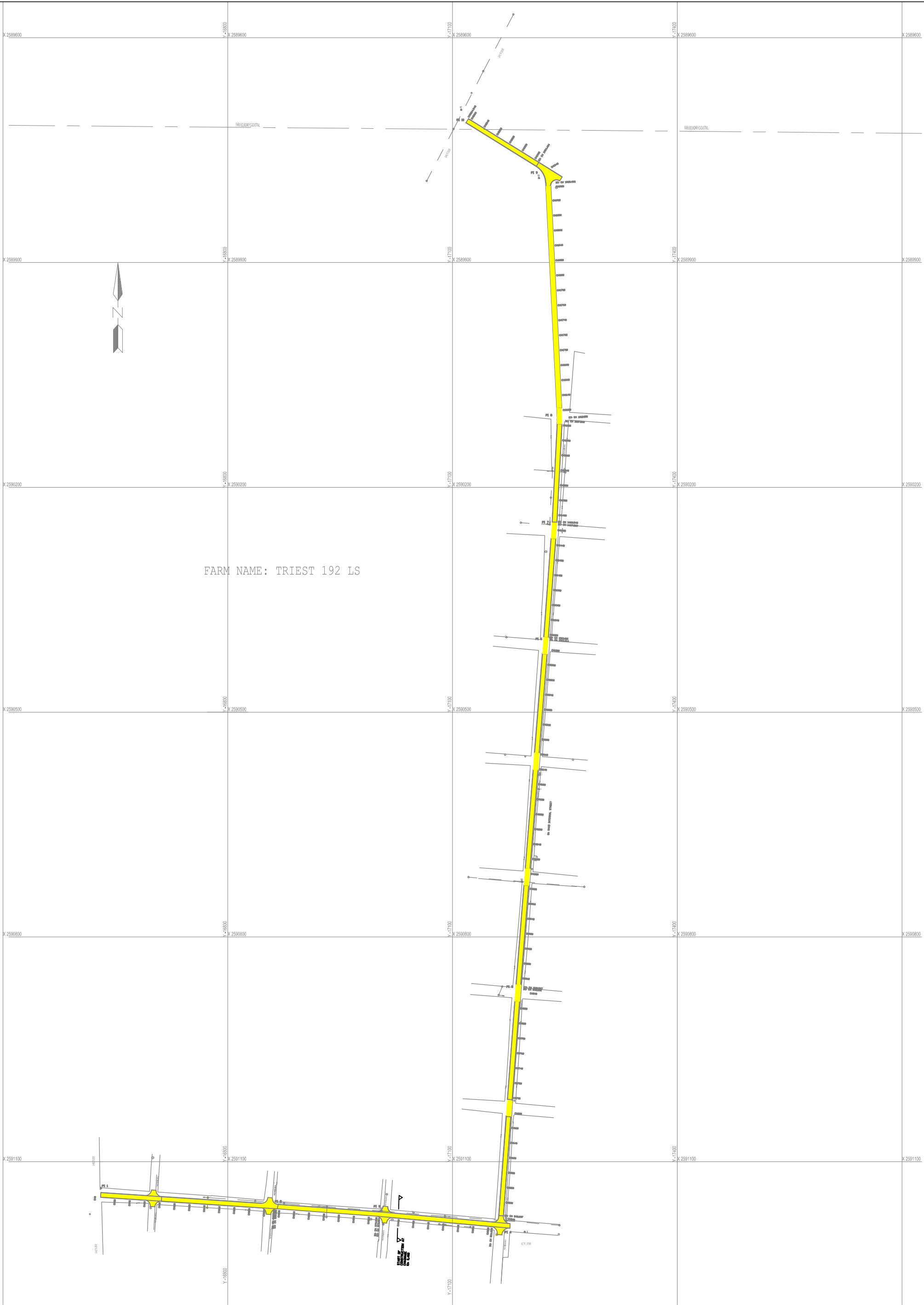
UNIT 10,JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutaku.co.za

APPROVED BY	
FOR MM	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE




MOLEMOLÉ MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	AS BUILT PLAN (FULL SIGNATURE)	SHEET 12 OF 15
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM	SCALE A1 AS SHOWN
TYPICAL KERB DETAILS	For CONSULTING ENGINEER	MM DWG. No.
	0138-MM-012	MM-TECH-012



3	05/2022	TENDER DRAWINGS		TN	
No.	DATE	REVISION	CONSULT	MM	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



NEVHUTALU

CONSULTING ENGINEERS

Reg No. 380700001721

UNIT 10, JCJ LIMPRO BUILDING

6 HANS VAN RENSBURG


POLOKWANE

0700

Tel: (015) 291 3519

Email: admin@nevhutalu.co.za

APPROVED BY	
FOR : MUNICIPAL MANAGER	DATE
DESIGN APPROVED	
FOR : CONSULTING ENGINEER	DATE



MOLEMOLE MUNICIPALITY

303 CHURCH STREET

PRIVATE BAG X44

MOGOWADI

0715

TEL:015 501 2301

FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	
STREETS LAYOUT	

AS BUILT PLAN (FULL SIGNATURE)		SHEET 13 OF 15
For MM	DATE	SCALE
For CONSULTING ENGINEER	DATE	MM DWG. No.
0138-MM-013		MM-TECH-013

NOTES

CONSTRUCTION METHOD:

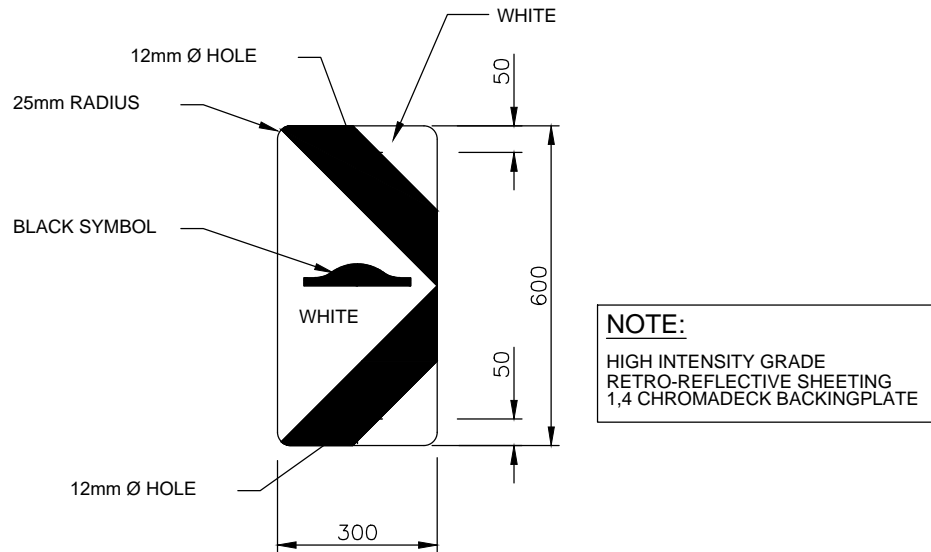
1. Setting out of hump - few days before construction.
2. Saw cuts one to two days before construction.

ON CONSTRUCTION DAY:

3. Remove 500 mm asphalt strips.
4. Start erecting road signs and paint warning road marking.
5. Place asphalt in strips and compact with two passes without vibrator.
6. Place templates - both sides of one lane at a time.
7. Place asphalt and rake till slightly higher than templates.
8. Shape asphalt with straight edge (channel section 6 m long).
9. Remove templates and compact without vibrator (three passes)
10. Measure profile and rectify if necessary.
11. Final compaction with three to four passes with vibrator.
12. Place road studs.
13. Paint speed hump the next day.

NOTE:

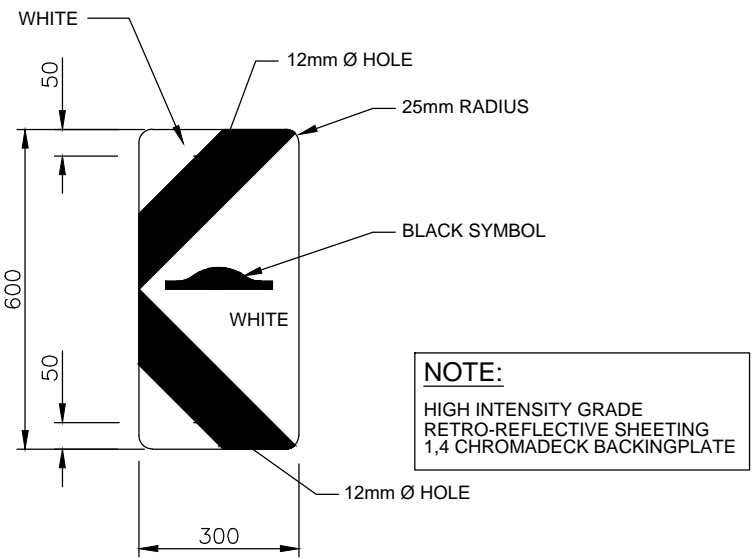
The Traffic Engineering and Operation section must always be consulted to assist with the setting out of raised pedestrian crossings.



DANGER PLATE SPEEDHUMP (LEFT)

W416

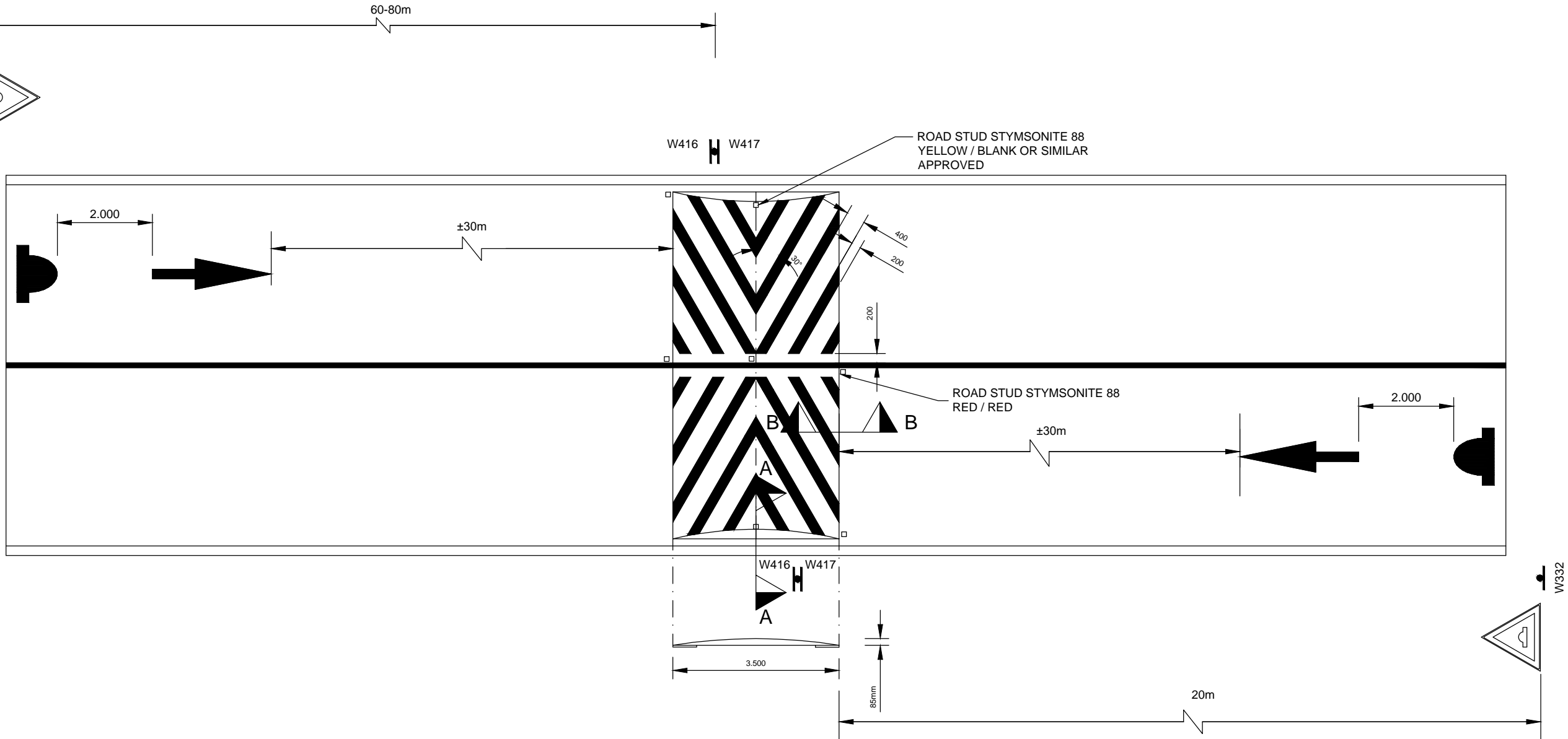
SCALE 1:10



DANGER PLATE SPEEDHUMP (RIGHT)

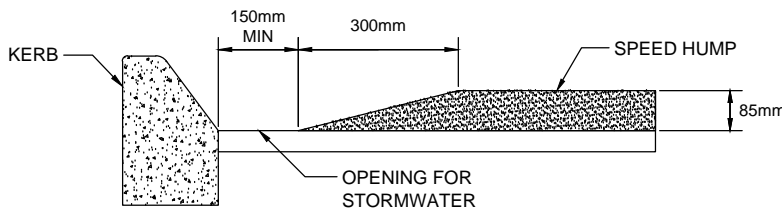
W417

SCALE 1:10



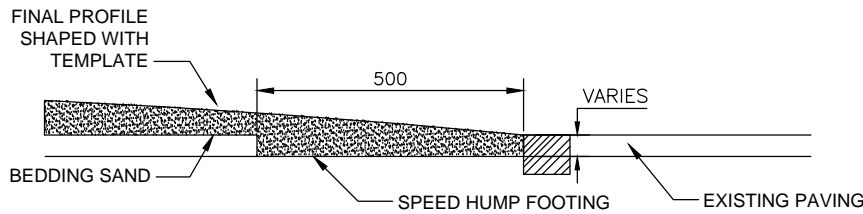
PLAN OF SPEED HUMP

SCALE 1:100

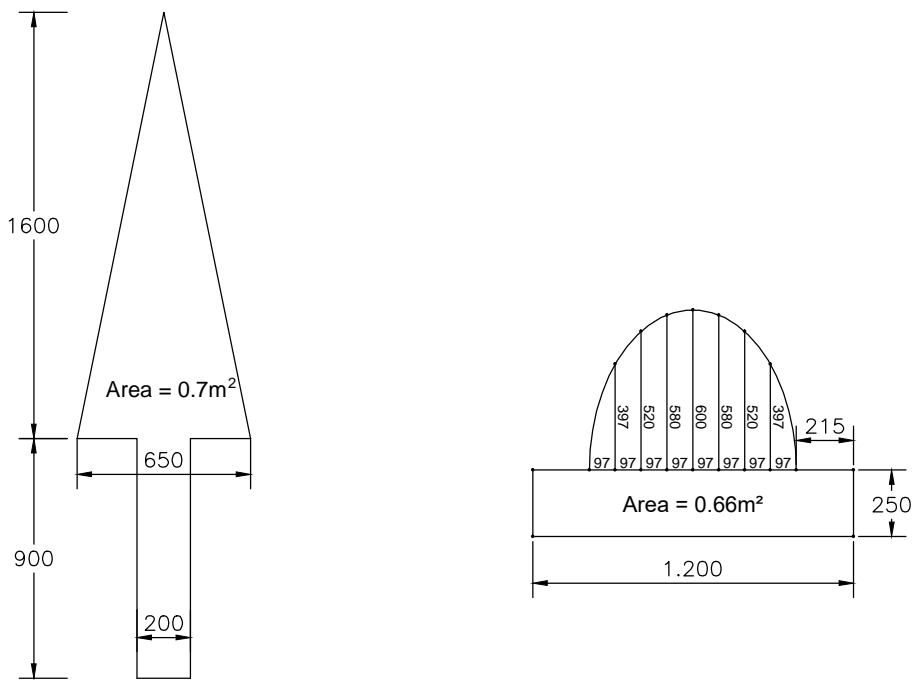


SECTION A-A:  
CONSTRUCTION DETAIL OF SPEED HUMP

SCALE 1: 100

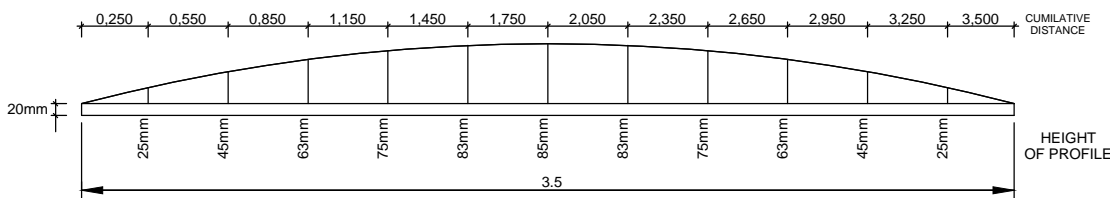


SECTION B-B:  
CONSTRUCTION DETAIL OF SPEED HUMP

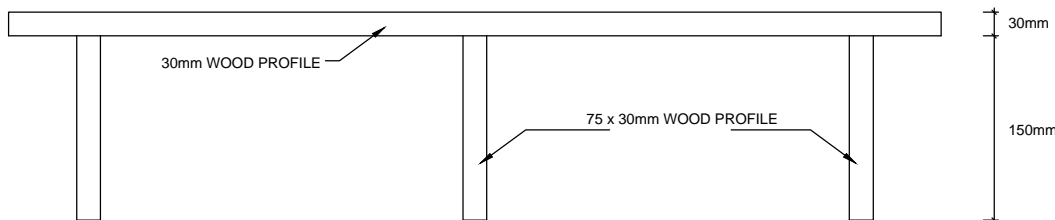


DETAIL OF SPEED HUMP ROAD MARKING

SCALE 1: 20



SIDE ELEVATION

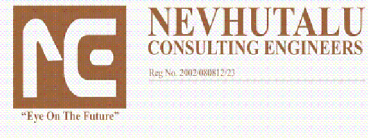


PLAN  
TEMPLATE DETAIL FOR CONSTRUCTION OF SPEED HUMP

SCALE 1: 20

3	05/2022	TENDER DRAWINGS	TN		
No.	DATE	REVISION	CONSULT.	MM	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10, JCI LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

APPROVED BY	
FOR MUNICIPAL MANAGER	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE



MOLEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL: 015 501 2301  
FAX: 015 501 0419

CONTRACT NO.: TECH-006/2022/23

CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM  
INTERNAL STREETS FROM GRAVEL TO SURFACING

TYPICAL SPEED HUMP DETAILS

AS BUILT PLAN  
(FULL SIGNATURE)

SHEET 14 OF 15

For MM

DATE

SCALE

For CONSULTING ENGINEER

DATE

CONSULTANT'S PROJECT No.

MM DWG. No.

0138-MM-014

MM-TECH-014

CONSTRUCTION METHOD:

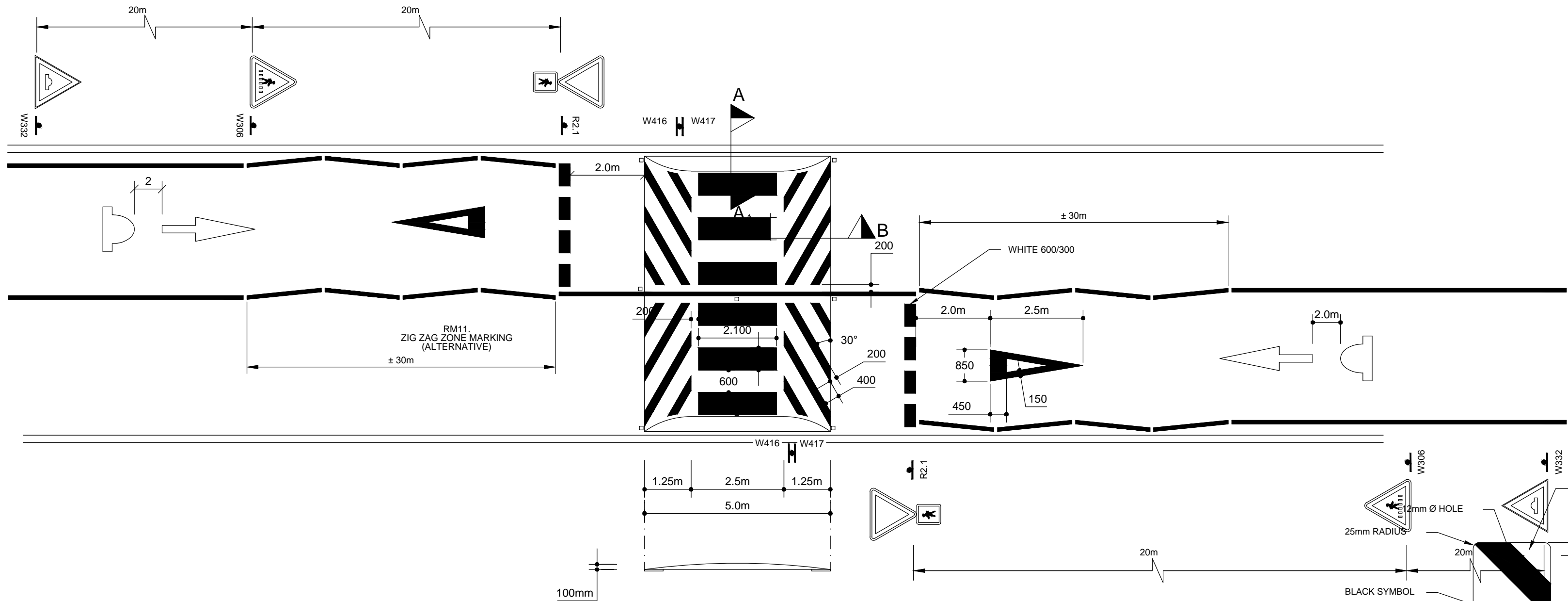
1. Setting out of hump - few days before construction.
2. Saw cuts one to two days before construction.

ON CONSTRUCTION DAY:

3. Remove 500 mm asphalt strips.
4. Start erecting road signs and paint warning road marking.
5. Place asphalt in strips and compact with two passes without vibrator.
6. Place templates - both sides of one lane at a time.
7. Place asphalt and rake till slightly higher than templates.
8. Shape asphalt with straight edge (channel section 6 m long).
9. Remove templates and compact without vibrator (three passes)
10. Measure profile and rectify if necessary.
11. Final compaction with three to four passes with vibrator.
12. Place road studs.
13. Paint speed hump the next day.

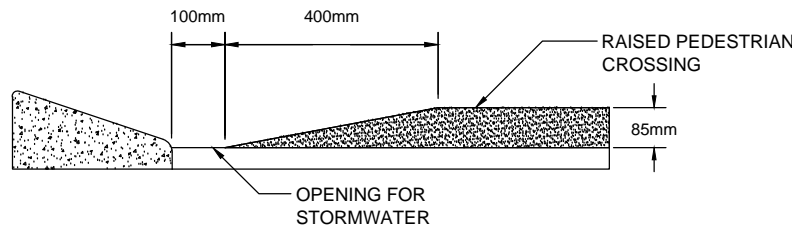
NOTE:

The Traffic Engineering and Operation section must always be consulted to assist with the setting out of raised pedestrian crossings.



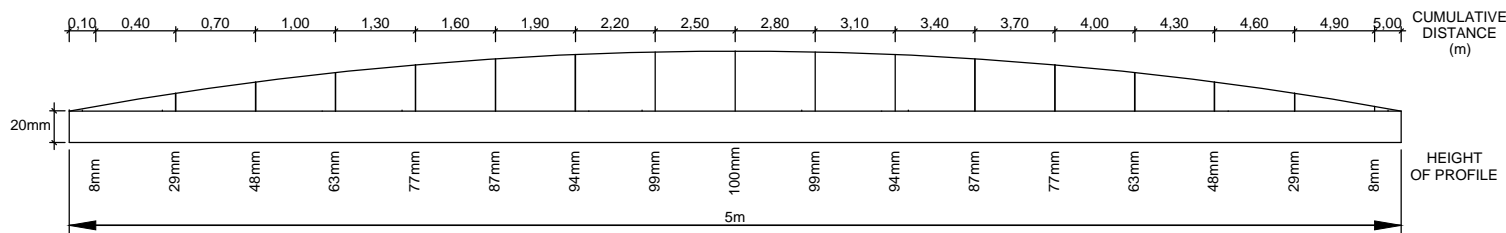
PLAN OF RAISED PEDESTRIAN CROSSING (RPC)

SCALE 1:100

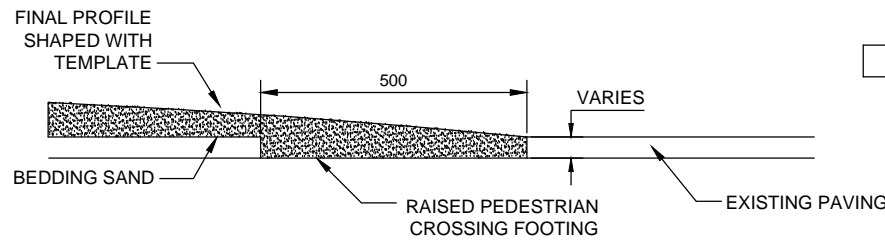


SECTION A-A:  
CONSTRUCTION DETAIL OF RPC

SCALE 1: 100

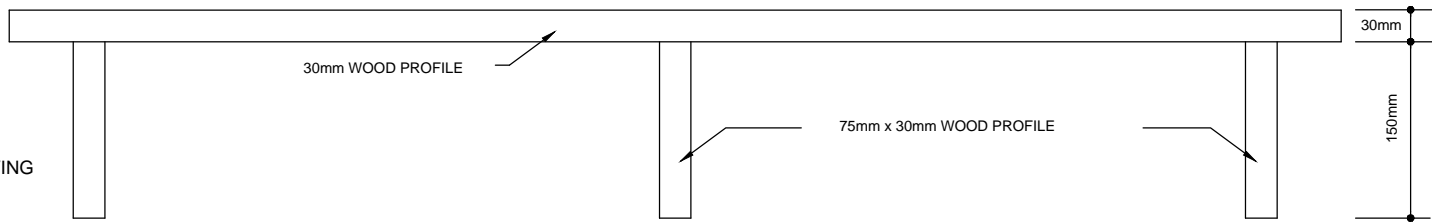


SIDE ELEVATION



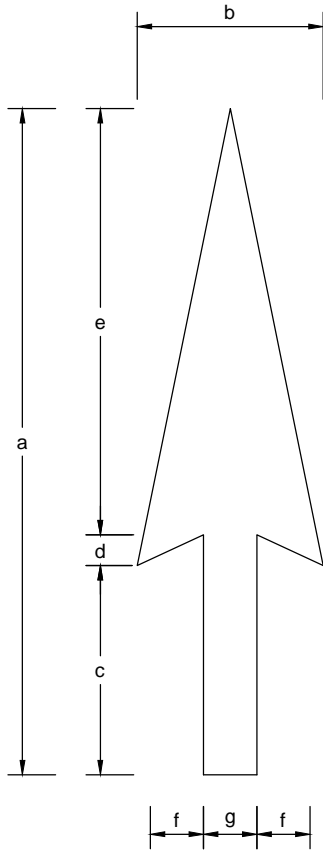
SECTION B-B:  
CONSTRUCTION DETAIL OF RPC

SCALE 1: 100



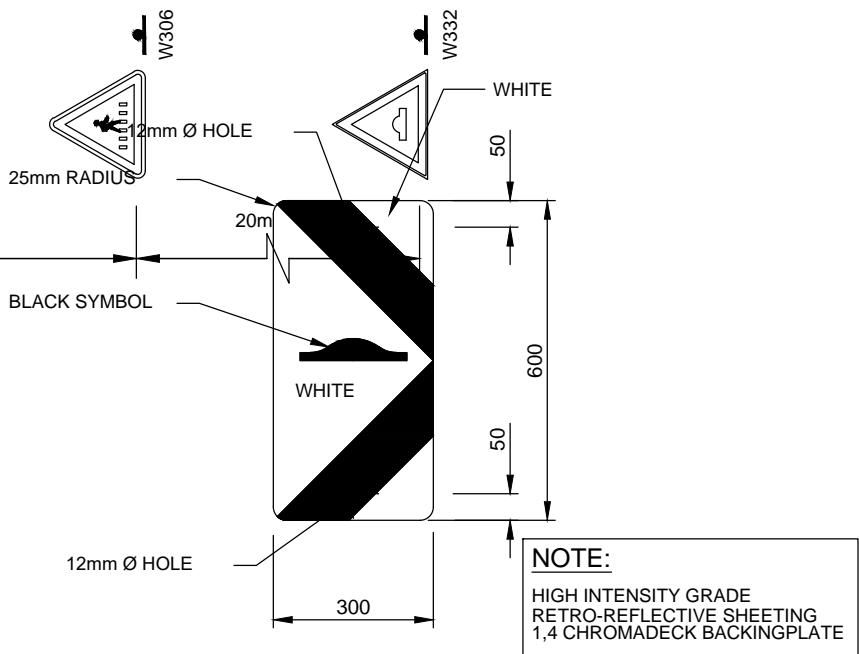
TEMPLATE DETAIL FOR CONSTRUCTION OF RPC

SCALE 1: 20



DIMENSIONS (mm)		a	a'	b	c	c'	d	e	f	g
OPERATING SPEED Km/h	TYPICAL APPLICATIONS									
30 - 40	CITY CENTRE	1250	2000	1250	450	400	50	750	500	250
50 - 80	URBAN	2500	4000	1250	900	800	100	1500	500	250

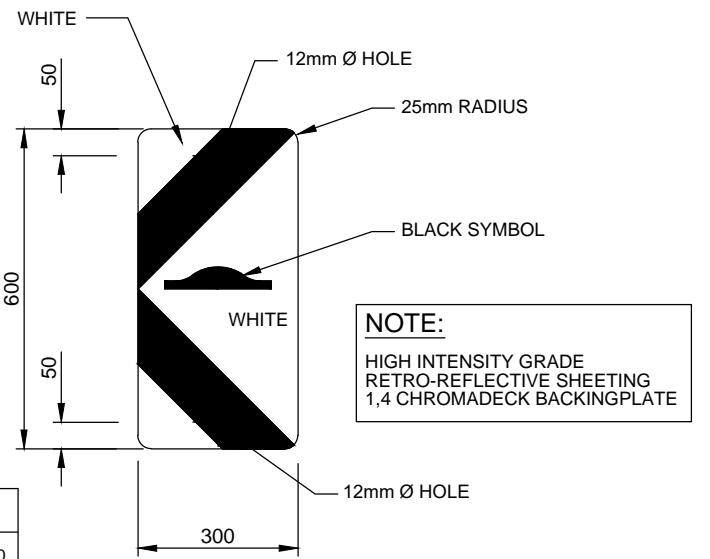
DETAIL OF ROAD MARKING



DANGER PLATE (LEFT)

W416

SCALE 1:10

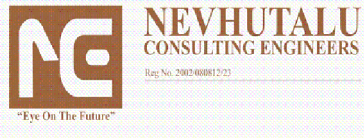


DANGER PLATE (RIGHT)

W417

No.	DATE	REVISION	CONSULT.	MM
3	05/2022	TENDER DRAWINGS	TN	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10 J.C.J LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

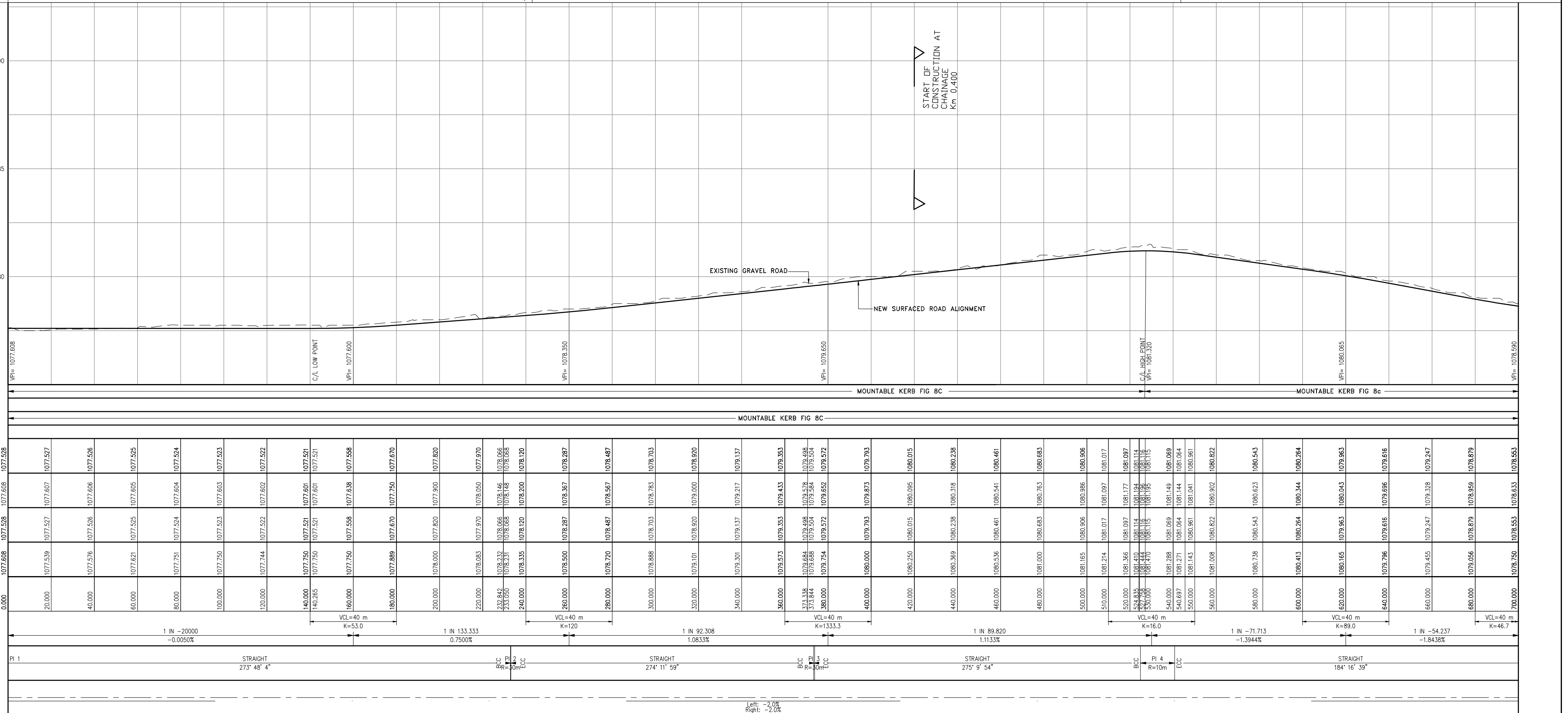
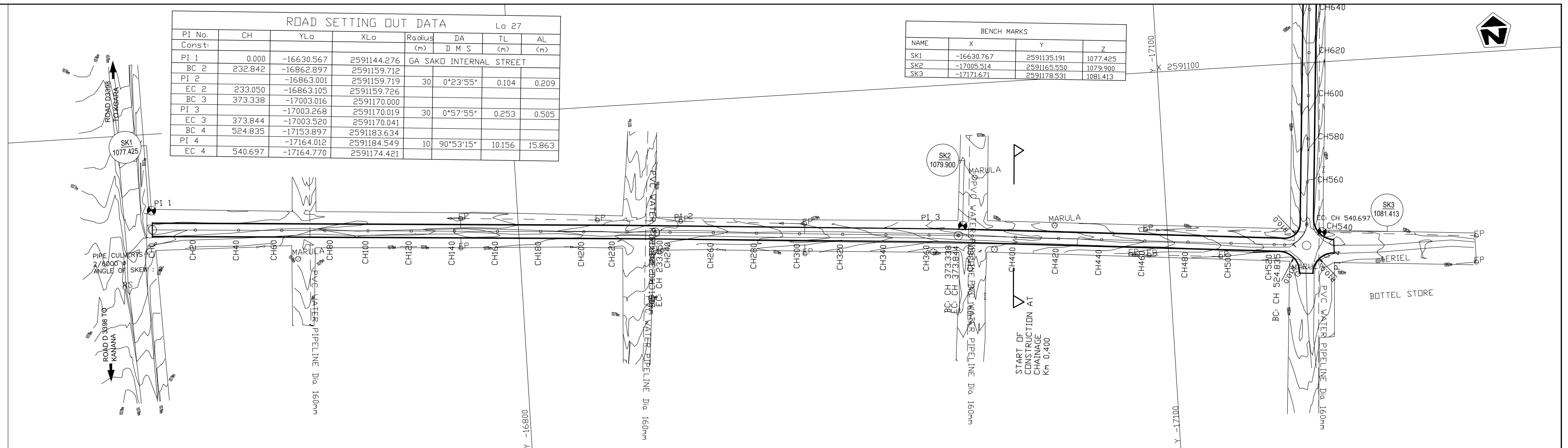
APPROVED BY	
FOR MUNICIPAL MANAGER	DATE
DESIGN APPROVED	
FOR CONSULTING ENGINEER	DATE



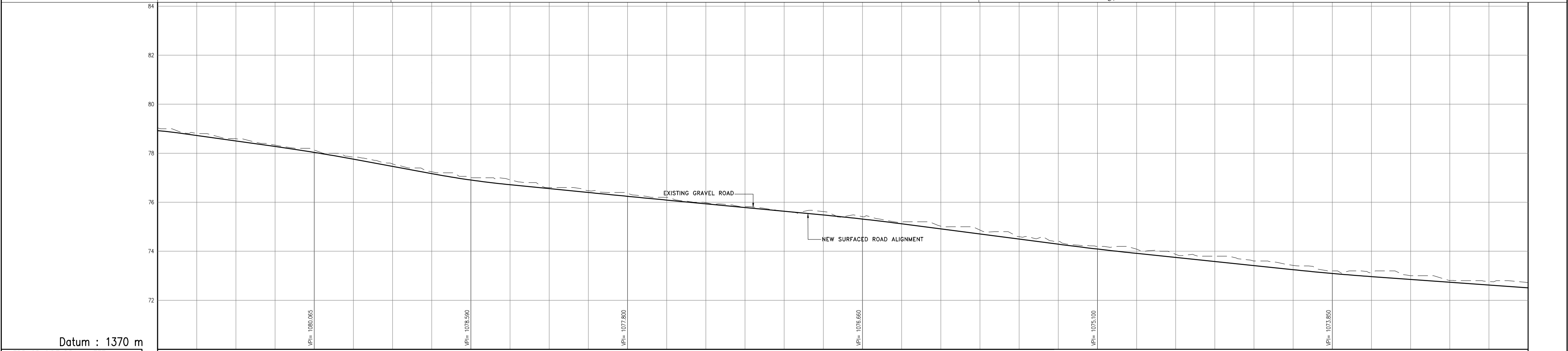
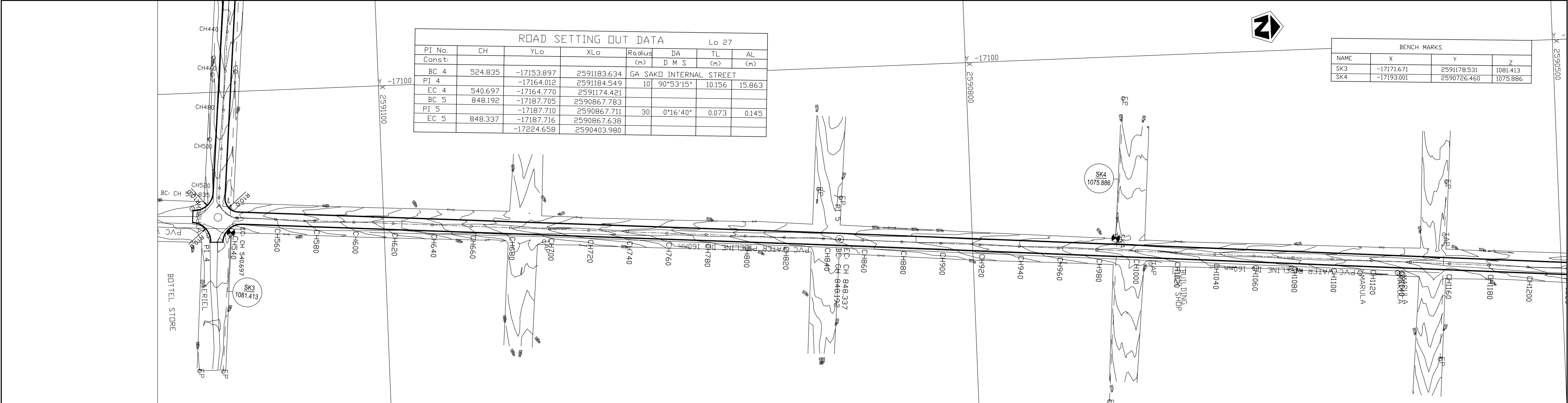
MOLEMOLE MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

CONTRACT NO.:TECH-006/2022/23	AS BUILT PLAN (FULL SIGNATURE)	SHEET 15 OF 15
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING	For MM DATE SCALE	
TYPICAL RAISED PEDESTRIAN CROSSING DETAILS	For CONSULTING ENGINEER DATE	MM DWG. No.
	0138-MM-015	MM-TECH-015





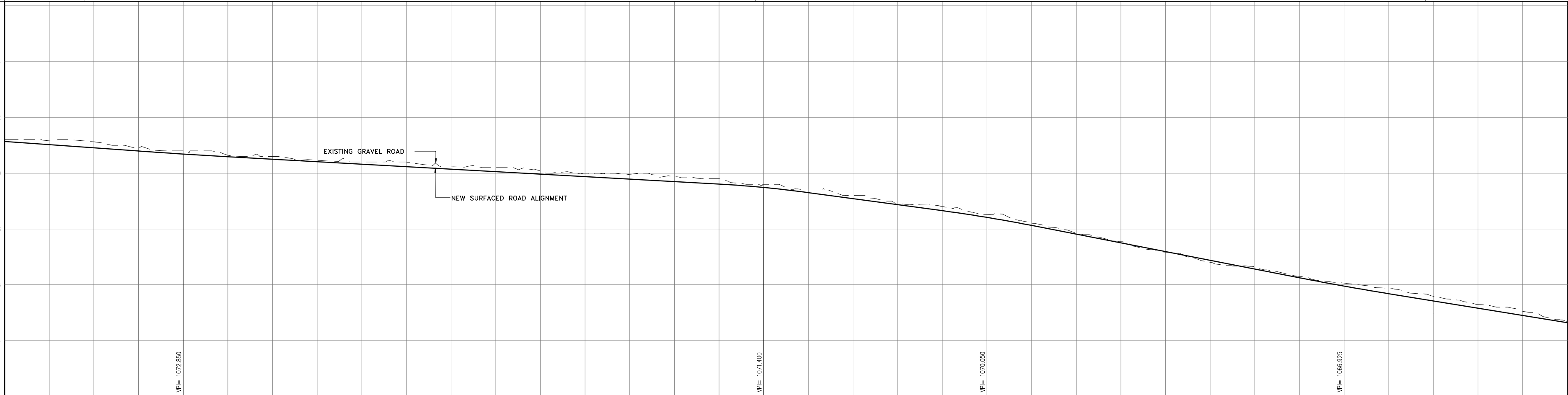
				DESIGNED BY	T NEBOTALO Pr Eng	<div><div><div>NE</div><div>NEVHUTALU CONSULTING ENGINEERS</div><div>Reg No. 24060000122</div></div><div>UNIT 10,JCJ LIMPRO BUILDING 6 HANS VAN RENSBURG POLOKWANE 07000 Tel: (015) 291 3519 Email: admin@nevhutalu.co.za</div></div>	APPROVED BY		<div><div><div><div></div><div></div><div></div></div><div>Molemole Municipality</div><div></div></div><div>MOLEMOLE MUNICIPALITY 303 CHURCH STREET PRIVATE BAG X44 MOGWADI 0715 TEL:015 501 2301 FAX:015 501 0419</div></div>	CONTRACT NO.:TECH-006/2022/23		AS BUILT PLAN (FULL SIGNATURE)	SHEET 1 OF 4	
				CHECKED BY	T NEBOTALO Pr Eng		FOR MUNICIPAL MANAGER			DATE	DATE	SCALE		
				DRAWN BY	R SIKHIPHA		DESIGN APPROVED					AS SHOWN		
				CHECKED BY	T NEBOTALO Pr Eng		FOR CONSULTING ENGINEER			DATE	DATE	MM DWS, No.		
3	05/2022	TENDER DRAWINGS	TN											
No.	DATE	REVISION	CONSULT.	MM										
					CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING									
					LAYOUT PLAN AND LONGITUDINAL SECTION CH 0,400 TO CH 0,540								0138-MM-016	MM-TECH-016





Datum : 1370 m			MOUNTABLE KERB FIG 8C			CONCRETE SIDE DRAIN TYPE F		
KERB OR SIDE DRAIN LEFT			MOUNTABLE KERB FIG 8C			CONCRETE SIDE DRAIN TYPE F		
GUARDRAIL LEFT								
KERB OR SIDE DRAIN RIGHT								
GUARDRAIL RIGHT								
ROAD	LEFT	1081.084	1081.149	1081.084	1081.084	1081.084	1081.084	1081.084
	CENTRELINE	1081.041	1081.041	1081.041	1081.041	1081.041	1081.041	1081.041
	RIGHT	1080.961	1080.961	1080.961	1080.961	1080.961	1080.961	1080.961
C/L GROUND LEVEL			1081.088	1081.088	1081.088	1081.088	1081.088	1081.088
DISTANCE (m)			540.000	540.000	540.000	540.000	540.000	540.000
VERTICAL PROFILE			1081.088	1081.088	1081.088	1081.088	1081.088	1081.088
HORIZONTAL			1081.088	1081.088	1081.088	1081.088	1081.088	1081.088
ROAD PROFILE (%)			1081.088	1081.088	1081.088	1081.088	1081.088	1081.088



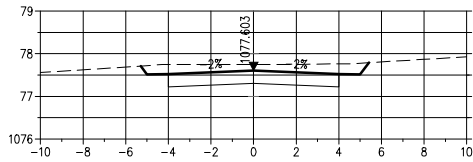
BENCH MARKS			
NAME	X	Y	Z
SK5	-17249.585	2590179.088	1072.186



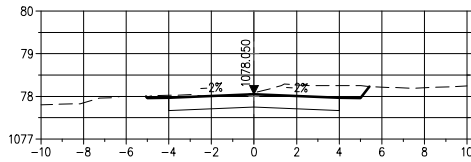
KERB OR SIDE DRAIN LEFT	
GUARDRAIL LEFT	
KERB OR SIDE DRAIN RIGHT	
GUARDRAIL RIGHT	
ROAD	LEFT
	CENTRELINE
	RIGHT
C/L GROUND LEVEL	
DISTANCE (m)	
VERTICAL PROFILE	CURVE INFORMATION GRADES & INT. POINTS
HORIZONTAL	
ROAD PROFILE (%)	

					DESIGNED BY	T NEBOTALO Pt Eng	<div><div></div><div>UNIT 10/JC3 LIMPRO BUILDING 6 HANS VAN RENSBURG POLOKWANE 0700 Tel: (015) 291 3519 Email: admin@nevhutalu.co.za</div></div>	APPROVED BY		<div><div></div><div>MOLEMOLE MUNICIPALITY 303 CHURCH STREET PRIVATE BAG X44 MOGWADI 0715 TEL:015 501 2301 FAX:015 501 0419</div></div>	CONTRACT NO.:TECH-006/2022/23		AS BUILT PLAN (FULL SIGNATURE)	SHEET 3 OF 4
					CHECKED BY	T NEBOTALO Pt Eng		FOR MUNICIPAL MANAGER _____ DATE _____			CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING		For MM _____ DATE _____	SCALE
					DRAWN BY	R SIKHIPHA		DESIGN APPROVED			LAYOUT PLAN AND LONGITUDINAL SECTION CH 1,200 TO CH 1,900		For CONSULTING ENGINEER _____ DATE _____	AS SHOWN
					CHECKED BY	T NEBOTALO Pt Eng		FOR CONSULTING ENGINEER _____ DATE _____					CONSULTANTS PROJECT No.	MM DWG No.
3	05/2022	TENDER DRAWINGS				TN					0138-MM-018	MM-TECH-018		
No.	DATE	REVISION			CONSULT.	MM								

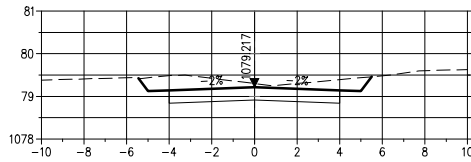




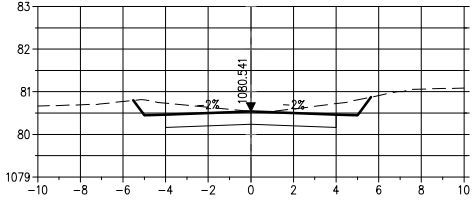
CH 100



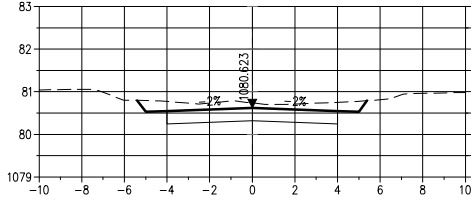
CH 220



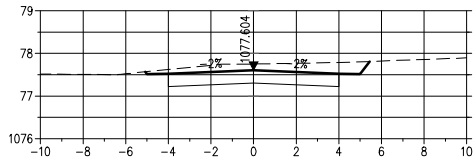
CH 340



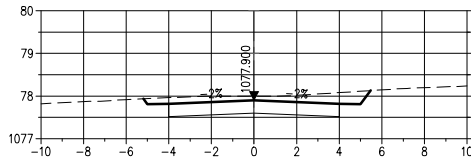
CH 460



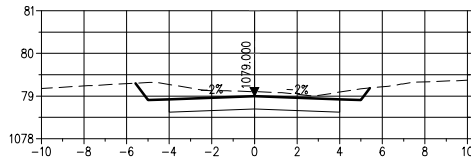
CH 580



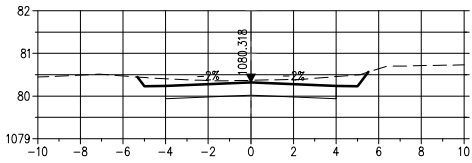
CH 80



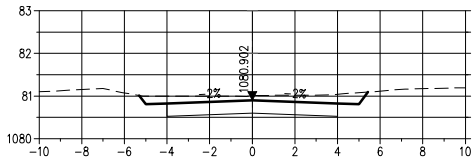
CH 200



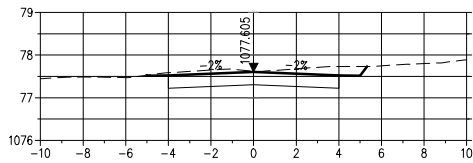
CH 320



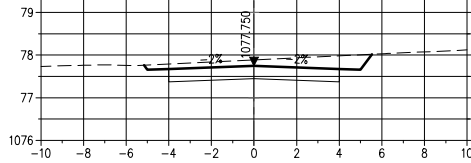
CH 440



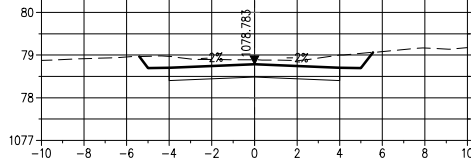
CH 560



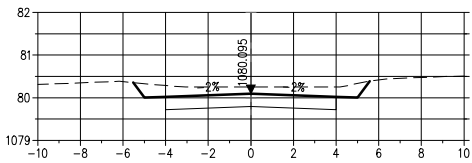
CH 60



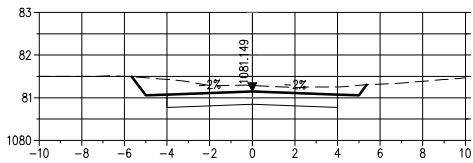
CH 180



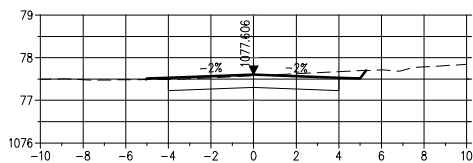
CH 300



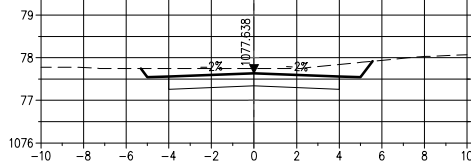
CH 420



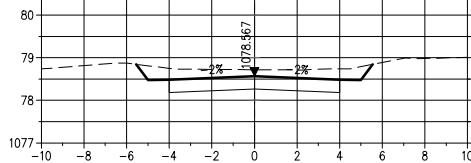
CH 540



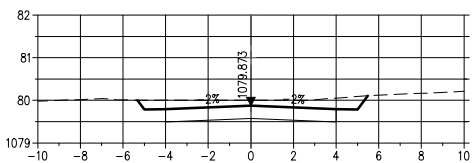
CH 40



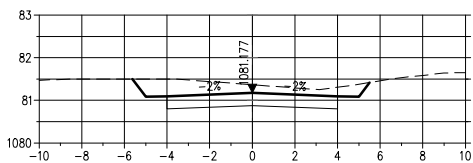
CH 160



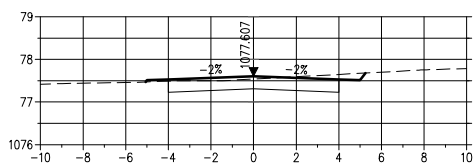
CH 280



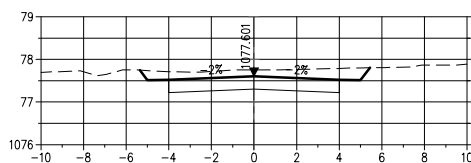
CH 400



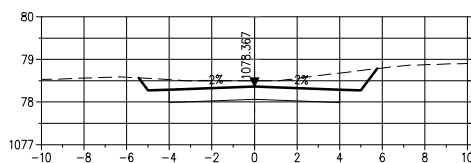
CH 520



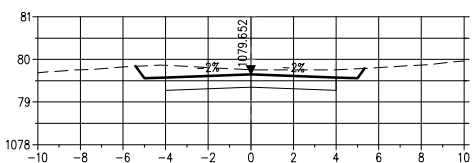
CH 20



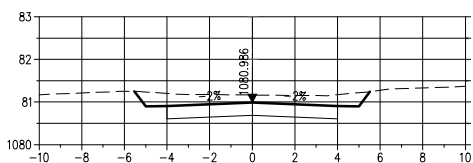
CH 140



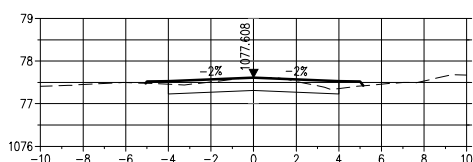
CH 260



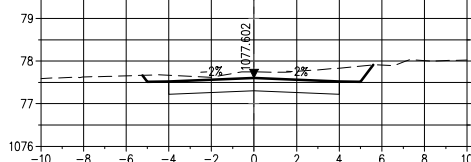
CH 380



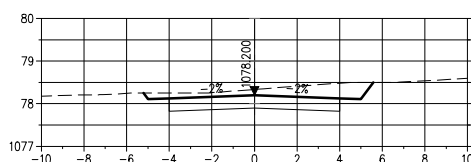
CH 500



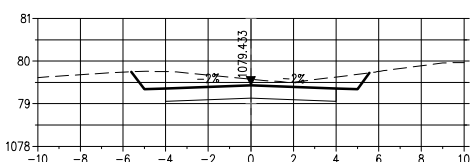
CH 0



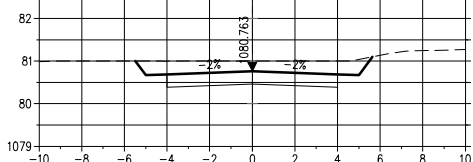
CH 120



CH 240



CH 360



CH 480

No.	DATE	REVISION	CONSULT	MM
3	05/2022	TENDER DRAWINGS	TN	

DESIGNED BY	T NEBOTALO Pr Eng
CHECKED BY	T NEBOTALO Pr Eng
DRAWN BY	R SIKHIPHA
CHECKED BY	T NEBOTALO Pr Eng



UNIT 10 JCJ LIMPRO BUILDING  
6 HANS VAN RENSBURG  
POLOKWANE  
0700  
Tel: (015) 291 3519  
Email: admin@nevhutalu.co.za

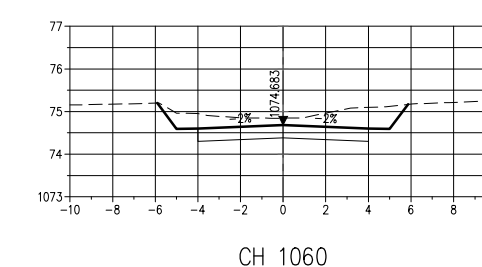
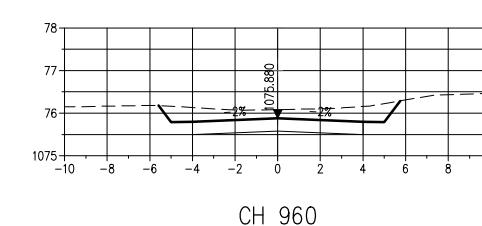
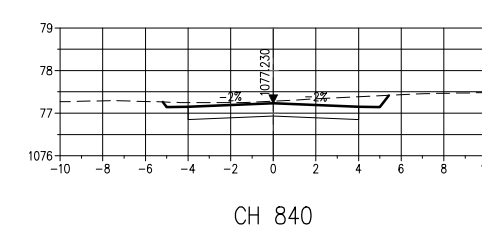
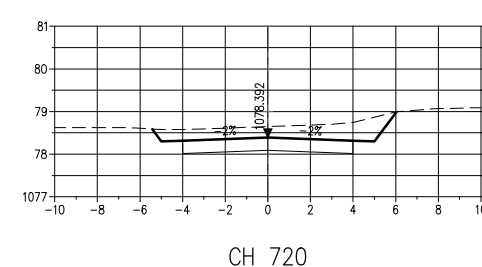
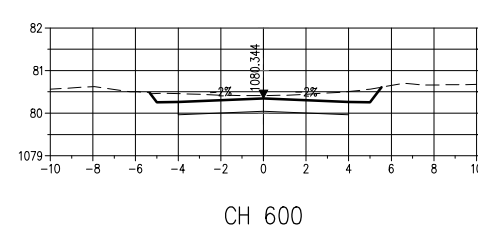
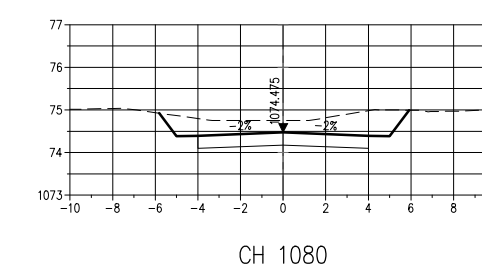
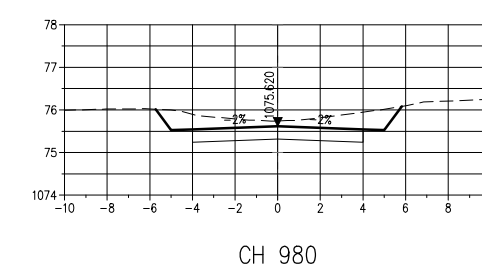
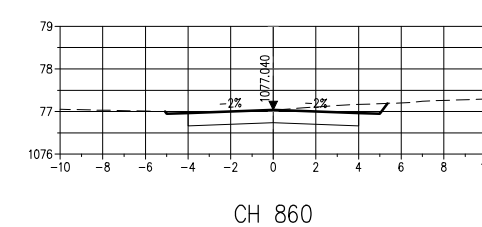
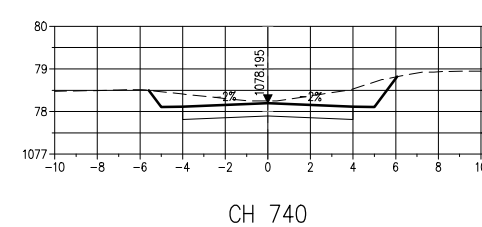
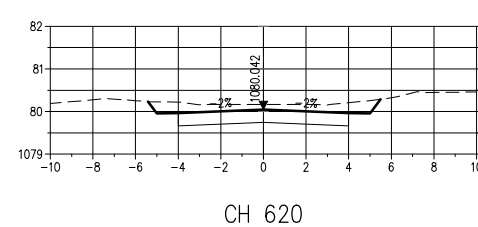
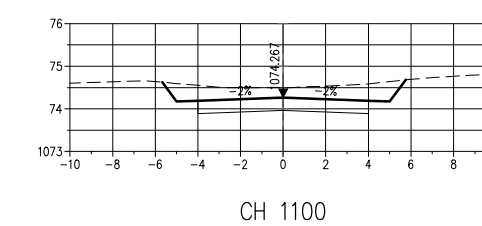
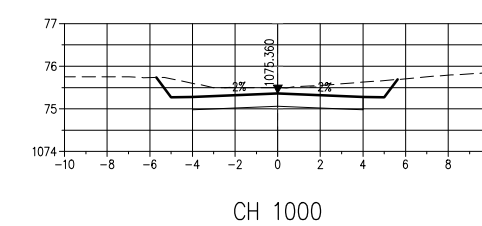
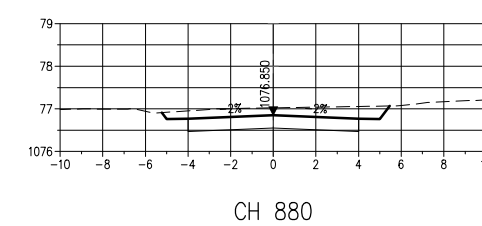
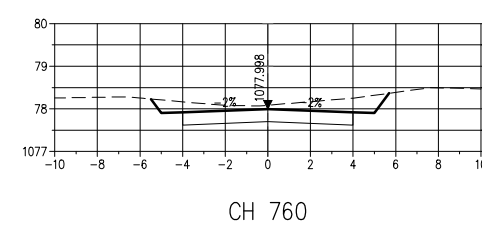
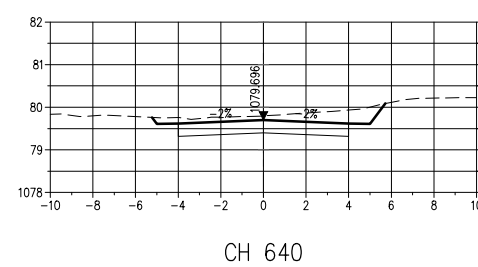
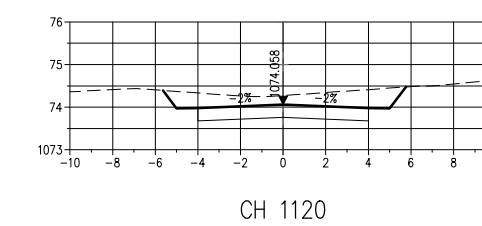
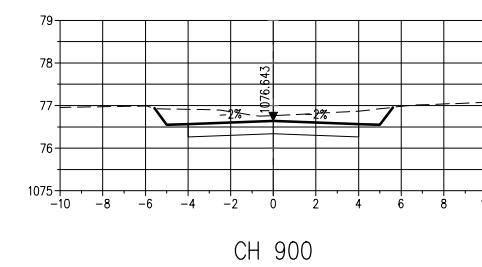
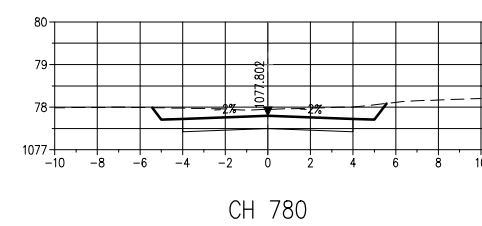
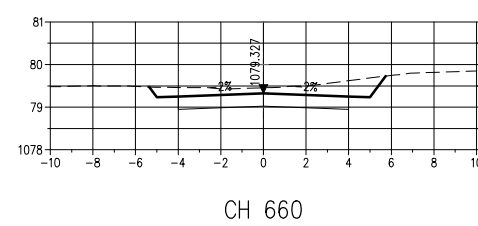
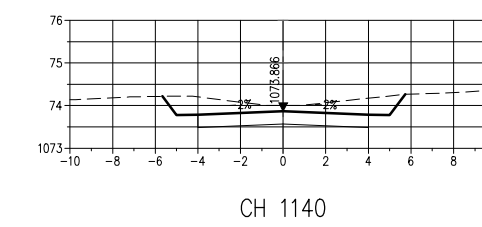
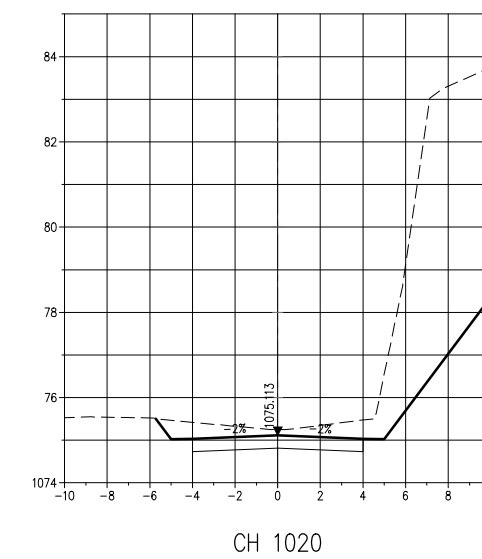
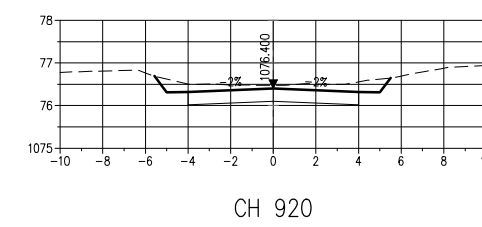
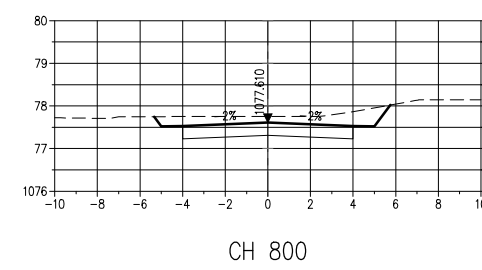
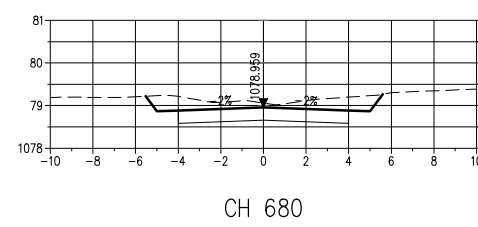
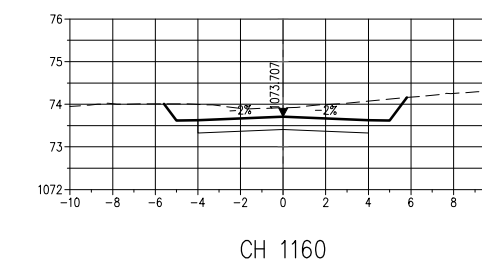
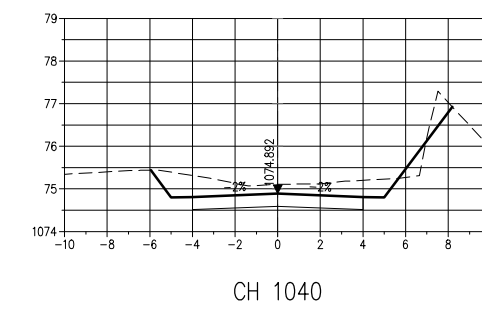
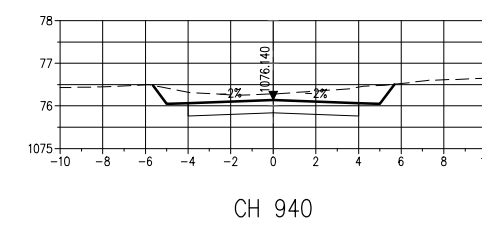
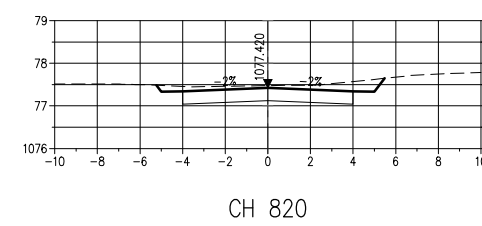
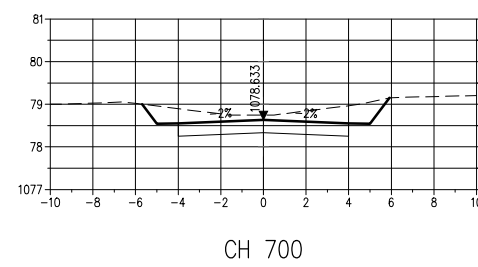
APPROVED BY	
FOR : MUNICIPAL MANAGER	DATE
DESIGN APPROVED	
FOR : CONSULTING ENGINEER	DATE



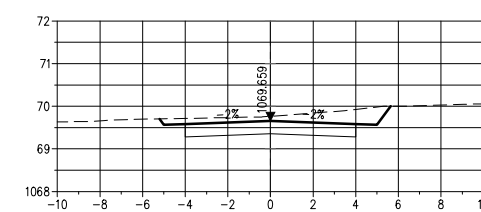
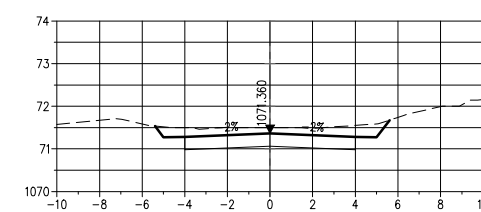
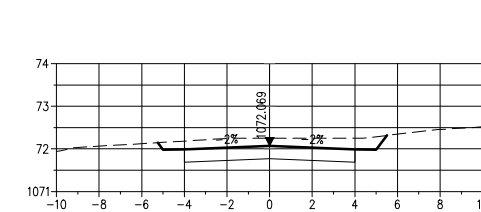
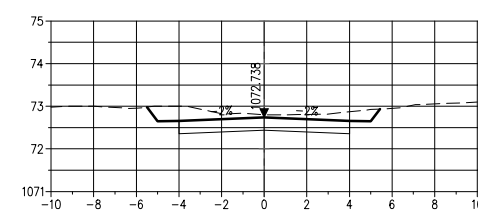
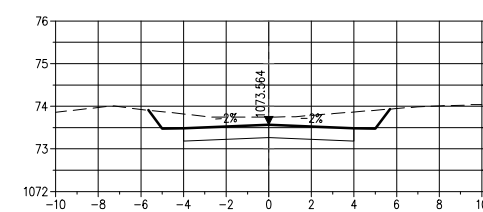
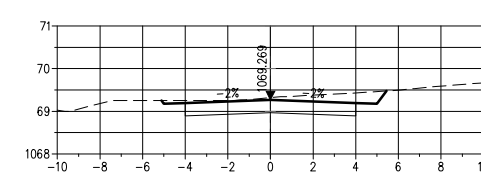
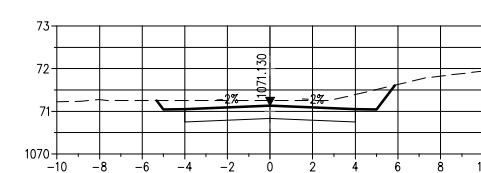
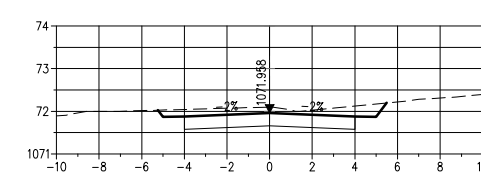
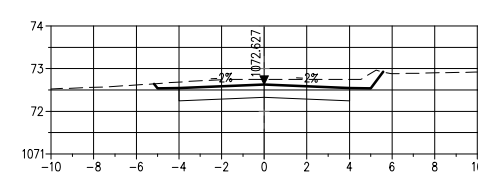
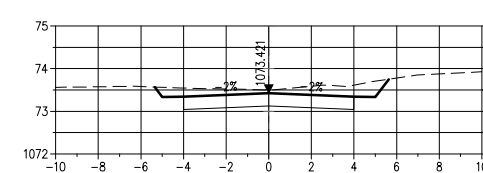
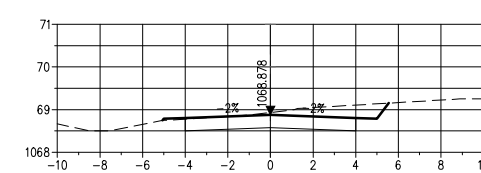
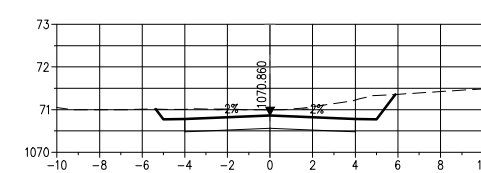
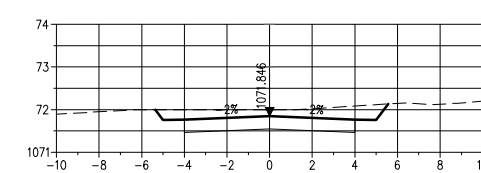
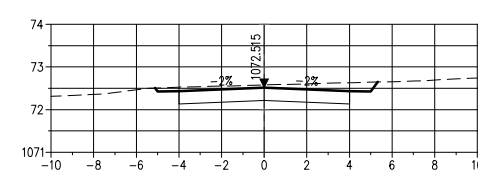
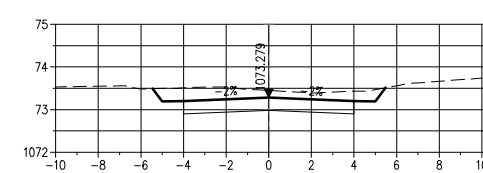
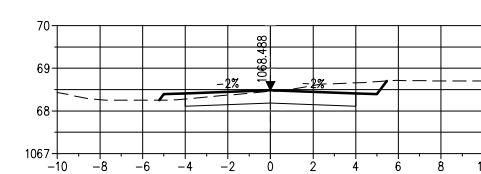
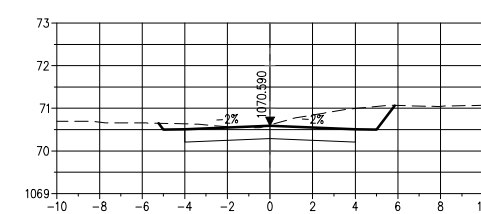
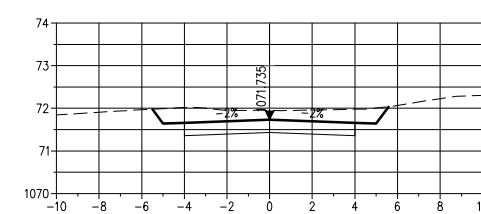
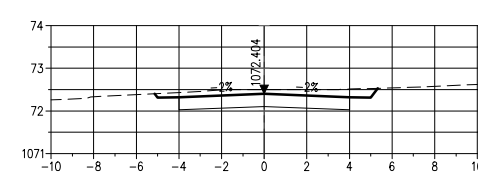
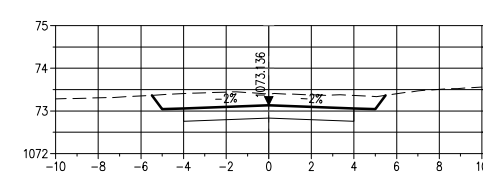
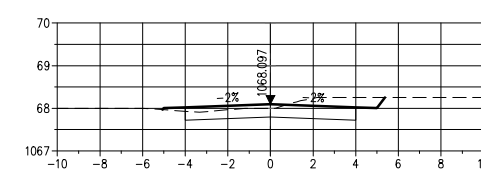
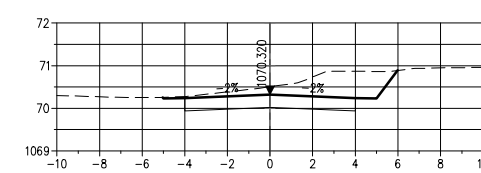
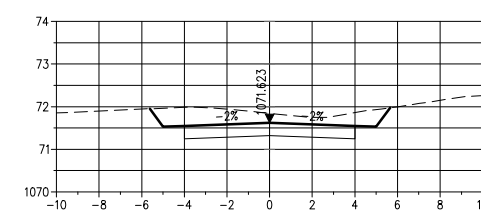
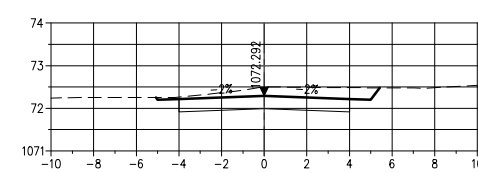
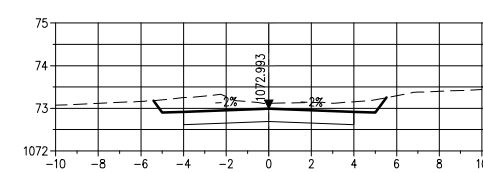
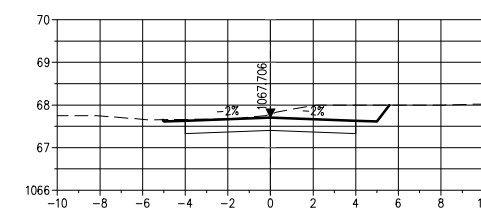
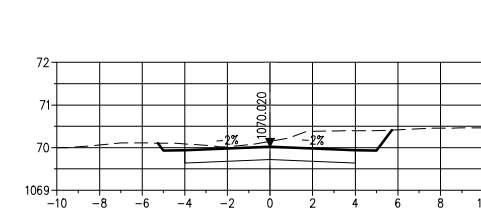
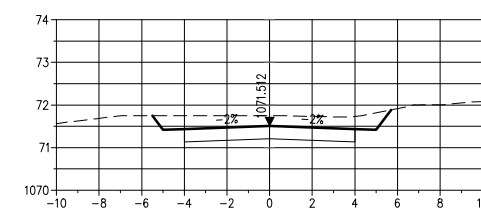
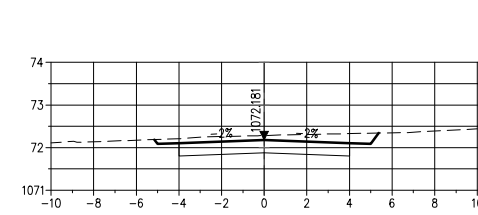
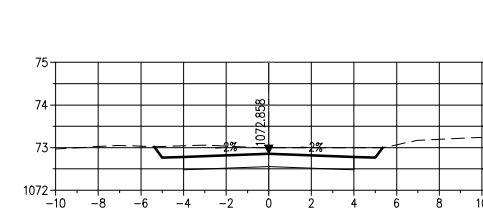
MOLEMOLÉ MUNICIPALITY  
303 CHURCH STREET  
PRIVATE BAG X44  
MOGWADI  
0715  
TEL:015 501 2301  
FAX:015 501 0419

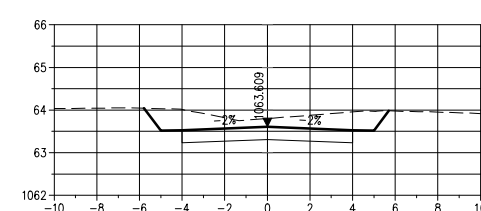
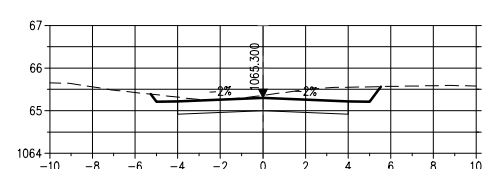
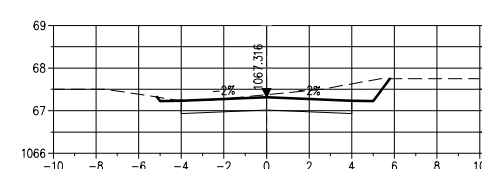
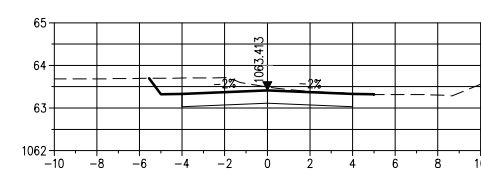
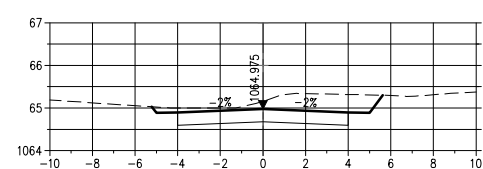
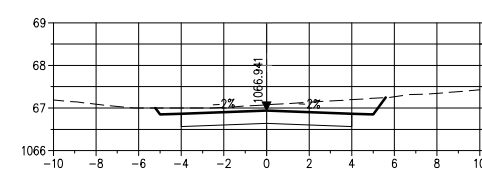
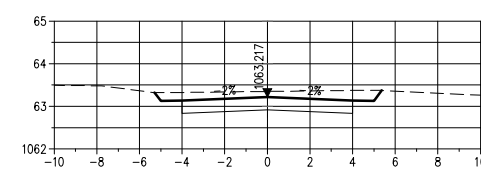
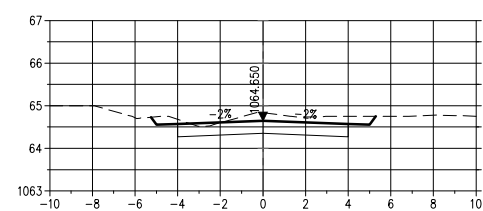
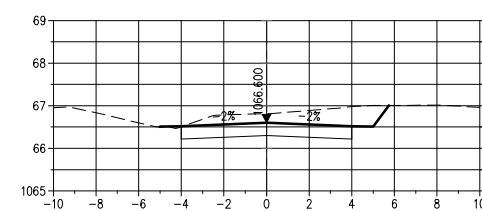
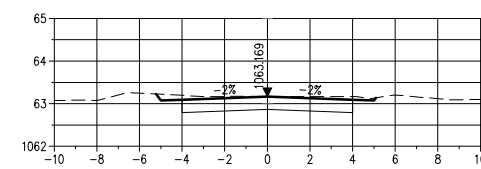
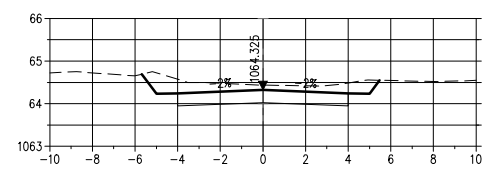
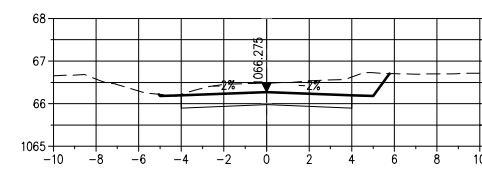
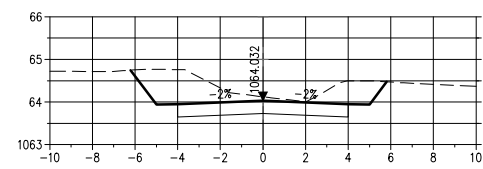
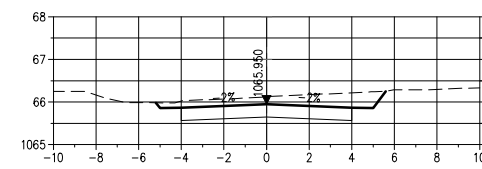
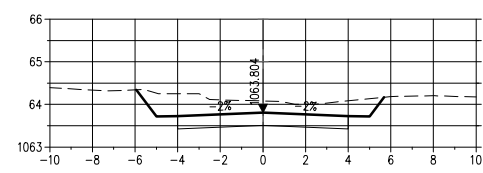
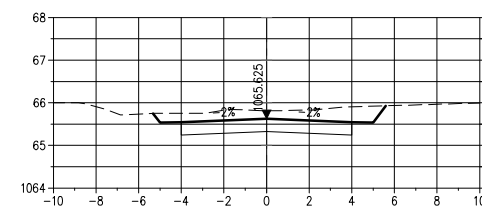
CONTRACT NO.:TECH-006/2022/23
CONSTRUCTION OF GAS-SAKO UPGRADING OF 1.7KM INTERNAL STREETS FROM GRAVEL TO SURFACING
CROSSECTIONS Km 0.400 TO Km 0.580

AS BUILT PLAN (FULL SIGNATURE)	SHEET 1 OF 4
For MM DATE	SCALE
For CONSULTING ENGINEER DATE	MM DWG. No.
0138-MM-020	MLM-TECH-020

[illegible]



[illegible]

[illegible]