BLOUBERG MUNICIPALITY

# BLOUBERG LOCAL MUNCIPALITY

## CIDB Class Grading 7CE or Higher

**CONTRACT NO: BM01/25/26**

**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**PROCUREMENT DOCUMENT**

**JUNE 2025**

**NAME OF TENDERER :** .....

**TENDER PRICE:** .....


**PREPARED BY:**

**Dolmen Engineers cc**
**P.O. Box 468**
**Bendor Park**
**0718**

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

**Tel: (015) 295 4885**
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**ISSUED BY:**

**The Municipal Manager**
**BLOUBERG LOCAL MUNCIPALITY**
**P.O. Box 1593**
**Senwabarwana**
**0790**

**Tel: (015) 505 7100**
**Email: info@blouberg.gov.za**

EXPANDED PUBLIC WORKS PROGRAMME

**Manager Supply chain : Ms M. Monyemangena** **(015) 505 7100**

**Manager PMU : M Rabumbulu** **(015) 505 7177**

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## COLOUR CODING

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# THE TENDER

## PART T1 : TENDERING PROCEDURES

## PART T2 : RETURNABLE DOCUMENTS

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# PART T1 : TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER ..... T.3

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## T1.1 TENDER NOTICE AND INVITATION TO TENDER

| Project Number | Project Name and Description | Evaluation Criteria | CIDB Grading | Compulsory Briefing | Closing Date | Contact Person |
|---|---|---|---|---|---|---|
| **BM01/25/26** | Construction Of Kobe Access Road And Internal Streets | 80/20 Preference Points<br>Functionality =80<br>Specific goal =20 (refer to HDI table) | **GRADE:**<br>**7CE or higher** | 27 June 2025<br>Time :11h00<br>Venue:<br>Ga-Kobe (23°10' 7,72"S<br>28°53' 12,44"E) | 30 July 2025<br>Time: 11h00<br>Venue: Municipal West wing boardroom | **Monyemangena MM for SCM Related issues on** (015) 505 7100<br>**And**<br>**Rabumbulu MH for Technical issues on**<br>(015) 505 7100 |

**The bidders who get less than stipulated threshold (70%) will not be evaluated further on 80/20 preference point system.**

**Mandatory and Compulsory Attachments Required:** Company Registration certificate, Certified copies of ID Documents for members/ Directors of Company, Company Profile with list of experience projects and traceable references, Valid Proof of registration with the Construction Industry Development Board (CIDB), Joint Venture Agreement in cases of a Joint Venture, Certified Copies of Appointment Letter(s) and Completion Certificate(s) of Relevant Projects. Valid Proof of registration with the Compensation for Occupational Injuries and Diseases Act (COIDA). Tax Compliance Pin from SARS, Proof of insurance of works and Public liability, Proof of Registration on the National Treasury Website (Summary of Central Supplier Database/CSD report), Authority to Sign, fully completed and signed MBD1 to MBD9 forms (attached on the tender document).

**The following conditions and rules will apply for these projects:**
The Municipality adheres to all the acts relevant to procurement of Goods and/ or Services and its Supply Chain Management Policy.

No bid will be accepted from persons in the service of the state

The prescriptions of the Construction Industry Development Board (CIDB) will apply

Tender Documents for all of the above projects are downloadable from Blouberg website: www.blouberg.gov.za or E-tender (www.e-tenders.gov.za) at No fee.

Tender closure is as per the table above. Tender Documents must be deposited in the tender box at the reception area of our Municipal Office in Senwabarwana, in a sealed envelope clearly marked with Project Name and Number.

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Certified copy of the latest Municipal Account with Municipal rates & service charges for both the Director/s and company ;( NB Bidders may not be in arrears for more than 3 months with these rates and charges.)/Lease agreement for lessee and Municipal rates and taxes statement for the lessor as proof of the existence of the property and Tribal Office letter for rural area.

Bids must only be submitted on the documentation provided by SCM unit of Blouberg Municipality

Telegraphic, Telephonic, facsimile, e-mailed, incomplete, pencilled and unsigned and late Tenders will not be accepted. The Municipality is not obliged to accept the lowest or any bidder.

**NB: Failure to comply with these conditions will result with immediate disqualification of your bid.**

**Channels to be followed in the instance wherein the bidder is aggrieved by the decision taken by the BLM in the implementation of its SCM system, any matter arising from a contract awarded in the course of its SCM system or any matter arising from the contract. (Regulation 49 & 50 of MFMA 56 of 2003)- Should a dispute arise, complain be lodged within 14 days of decision to the BLM and attention to Mr. Makwela MM**

**(015 505 7100).**

- The dispute, objection, complaint or query may be referred to the relevant provincial treasury if it is not resolved within 60 days or no response is received from the municipality within 60 days.
- If the provincial treasury does not or cannot resolve the matter, the dispute, objection, complaint or query may be referred to the National Treasury for resolution.

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**MBD 1**

## INVITATION TO BID

| **YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*BLOUBERG LOCALMUNICIPALITY*)** | | | | | |
|---|---|---|---|---|---|
| BID NUMBER: | BM01/25/26 | CLOSING DATE: | 30 July 2025 | CLOSING TIME: | 11h00 |
| DESCRIPTION | CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS | | | | |
| COMPULSORY BRIEFING | Date: 27 June 2025<br>Briefing time: 11h00<br>Venue: Ga-Kobe (23°10' 7,72"S 28°53' 12,44"E) | | | | |
| CIDB | 7CE or higher | | | | |
| **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).** | | | | | |

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT

| |
|---|
| **2nd Building** |
| **Mogwadi/ Senwabarwana Road** |

| **SUPPLIER INFORMATION** | | | | | | |
|---|---|---|---|---|---|---|
| NAME OF BIDDER | | | | | | |
| POSTAL ADDRESS | | | | | | |
| STREET ADDRESS | | | | | | |
| TELEPHONE NUMBER | CODE | | NUMBER | | | |
| CELLPHONE NUMBER | | | | | | |
| FACSIMILE NUMBER | CODE | | NUMBER | | | |
| E-MAIL ADDRESS | | | | | | |
| VAT REGISTRATION NUMBER | | | | | | |
| TAX COMPLIANCE STATUS | TCS PIN: | | **OR** | CSD No: | | |
| B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX] | ☐ Yes<br>☐ No | | B-BBEE STATUS LEVEL SWORN AFFIDAVIT | ☐ Yes<br>☐ No | | |

***[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]***

| | | | |
|---|---|---|---|
| **1.** ARE YOU THE ACCREDITED REPRESENTATIVE **IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?** | ☐Yes ☐No<br>[IF YES ENCLOSE PROOF] | **2.** ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?** | ☐Yes ☐No<br>[IF YES, ANSWER PART B:3 ] |
| **3. TOTAL NUMBER OF ITEMS OFFERED** | | **4. TOTAL BID PRICE** | **R** |
| **5. SIGNATURE OF BIDDER** | …… | **6. DATE** | |
| **7. CAPACITY UNDER WHICH THIS BID IS SIGNED** | | | |

| **BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:** | | **TECHNICAL INFORMATION MAY BE DIRECTED TO:** | |
|---|---|---|---|
| DEPARTMENT | | CONTACT PERSON | |
| CONTACT PERSON | | TELEPHONE NUMBER | |
| TELEPHONE NUMBER | | FACSIMILE NUMBER | |
| FACSIMILE NUMBER | | E-MAIL ADDRESS | |
| E-MAIL ADDRESS | | | |

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## PART B
## TERMS AND CONDITIONS FOR BIDDING

| | |
|---|---|
| **1.** | **BID SUBMISSION:** |
| 1.1. | BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION. |
| 1.2. | **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE** |
| 1.3. | THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT. |
| **2.** | **TAX COMPLIANCE REQUIREMENTS** |
| 2.1 | BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS. |
| 2.2 | BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS. |
| 2.3 | APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA. |
| 2.4 | FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3. |
| 2.5 | BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID. |
| 2.6 | IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER. |
| 2.7 | WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED. |
| **3.** | **QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS** |
| 3.1. | IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO |
| 3.2. | DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO |
| 3.3. | DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO |
| 3.4. | DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO |
| 3.5. | IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO |
| | **IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.** |

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

SIGNATURE OF BIDDER :……

CAPACITY UNDER WHICH THIS BID IS SIGNED :……

DATE :……..

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## T1.2 TENDER DATA

This standard is issued in terms of sections 4(f), 5(3)(c) and 5(4)(b) of the Construction Industry Development Board Act 38 of 2000 read with Regulation 24 of the Construction Industry Development Regulations, (as amended) issued in terms of section 33.

The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 27831 of 22 July 2005, Board Notice 99 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice 9 of 2008 in Government Gazette No 30692 of 1 February 2008, Board Notice 11 of 2009 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010 and Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and August 2019, Vol. 650 of 2019 in Government Gazette No 42622 of 08 August 2019 - See www.cidb.org.za.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. In the interpretation of any ambiguity or inconsistency between the Tender Data and the Standard Conditions of Tender, the Tender Data shall have precedence.

Each item of Tender Data given below is cross-referenced to the relevant clause in the standard Conditions of Tender.

| Subclause | Tender Data |
|---|---|
| **EMPLOYER C.1.1** | The "Employer" for this Contract is: The **BLOUBERG LOCALMUNICIPALITY**<br><br>The Employer's domicilium citandi et executandi and address for communication relating to this project is:<br><br>**POSTAL** **OR** **PHYSICAL**<br>P. O. BOX 1593 2nd Building<br>Senwabarwana Mogwadi/ Senwabarwana Road<br>0790 Senwabarwana, 0790<br><br>**Contact**<br>**Acting Manager Supply chain : Ms M Monyemangena (015) 505 7100**<br>**Manager PMU : M Rabumbulu (015) 505 7177** |
| **TENDER DOCUMENTS C.1.2** | **"The following documents form part of this Tender:**<br><br>Part T1: Tendering procedures:<br>T1.1 Tender notice and invitation to tender<br>T1.2 Tender data<br><br>Part T2<br>T2.1 List of returnable documents<br>T2.2 Returnable schedules<br>T2.3 Returnable Schedules that will be incorporated into the Contract |

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| Subclause | Tender Data |
|---|---|
| | T2.4 Other Schedules and Documents that will be Incorporated into the Contract. |
| | **THE CONTRACT** |
| | Part C1: Agreements and contract data<br>C1.1 Form of offer and acceptance<br>C1.2 Agreement in terms of the Occupational Health and Safety Act<br>C1.3 Form of guarantee<br>C1.4 Form Agreement in terms of the Mine Health and Safety Act<br>C1.5 Appointment in terms of Section 3(1) of the Mine Health and Safety Act<br>C1.6 Abstracts of the Mine Health and Safety Act No 29<br>C1.7 Contract data<br>Part C2: Pricing data<br>C2.1 Pricing instructions<br>C2.2 Bills of quantities<br>C2.3 Summary of Bills of Quantities<br>C2.4 Calculation of Tender Sum<br>Part C3: Scope of work<br>C3.1 Description of Works<br>C3.2 Engineering<br>C3.3 Procurement<br>C3.4 Construction<br>C4.5 Management<br>Part C4: Site information<br>C4.1 Site Information<br>C4.2 Locality Plan<br>Part C5: Annexures<br>C5.1: Proforma Documents<br>C5.2: Drawings<br>C5.3: Guidelines for the Implementation of Labour-Intensive Infrastructure Projects Under the Expanded Public Works Programme (EPWP)<br>C5.4: Blouberg Local Municipality Supply Chain Management Policy |
| **EMPLOYER'S AGENT C1.4** | **The Employer's agent is:**<br>Name : **Dolmen Engineers CC**<br>Address : 22A Pres Paul Kruger Street<br>Polokwane<br>0699<br>Name : M.P. Sematla<br>Telephone : (015) 295 4885 Fax: (015) 295 8384<br>E-Mail : polokwane@dolmenengineers.co.za / dolmeneng@gmail.com |

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| Subclause | Tender Data |
|---|---|
| **TENDERER'S OBLIGATIONS**<br><br>**Eligibility C.2.1** | Only those Tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submission, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with regulation 25 (1B) OR 25(7A) of the Construction Industry Development Regulations, for a **7CE or Higher** Class of construction work, are eligible to have their Tender evaluated. |
| | Joint ventures are eligible to submit tenders provided that:<br>1. Every member of the joint venture is registered with the CIDB;<br>2. The lead partner has a contractor grading designation in the **Grade 7CE or Higher** class of construction work; or not lower than one level below the required grading designation in the class of construction works under considerations and possess the required recognition status.<br>3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **Grade 7CE or Higher** class of construction work or value determined in accordance with regulation 25 (1B) OR 25(7A) of the Construction Industry Development Regulations. |
| **Site Visit and Clarification Meeting C.2.7** | The arrangements for the compulsory clarification meeting are as follows:<br><br>**Location: Ga-Kobe (23°10' 7,72"S 28°53' 12,44"E)**<br><br>**Date: Friday, 27 June 2025** **Starting Time: 11H00**<br><br>Failure to sign the site clarification meeting register will invalidate the Tender. Addenda will be issued to, and tenders will be received only from, those tendering entities appearing on the attendance list.<br><br>The onus rests with the tenderer to ensure that the representative attending the clarification meeting is appropriately qualified to understand all directives and clarifications given at that meeting.<br><br>The clarification meeting shall start strictly at the time advertised. Only then will the Employer's Representative circulate the attendance register for completion by those present. During this time latecomers may enter and complete the register. On completion by all present the Employer's Representative will:<br><br>(a) read out the names of the tenderers' representative(s) from the collected lists calling for confirmation that all have signed; and<br><br>(b) close the area off or establish boundaries around meeting area and inform latecomers that their tenders will not be accepted.<br><br>**NO DOCUMENTS WILL BE AVAILABLE FOR ISSUE AT THE CLARIFICATION MEETING.** |
| **Insurance C.2.9** | No insurance cover will be provided by the Employer |
| **C.2.10** | **Pricing the** Tender **offer** |

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| Subclause | Tender Data |
|---|---|
| | (a) Value Added Tax<br>• The Valued Added Tax (VAT) rate shall be 15% or as otherwise provided for by legislation.<br>• The successful Tenderer shall be required to produce a VAT invoice that shall only be prepared once measurements and valuations for work done in terms of the contract offer have been agreed with the Employers agent and a certificate of payment issued.<br>• Payment of VAT to non-VAT vendors shall be processed from the month in which the Tenderer's liability with the South African Revenue Services is effective. |
| **C.2.11** | **Alterations to document**<br>A Tender offer shall not be considered if alterations have been made to the forms of Tender data or contract data (unless such alterations have been duly authenticated by the Tenderer) or if any particulars required therein have not been completed in all respects.<br>If the Tenderer considers that any of the Tender documents are deficient in any respect and require clarification, or if any words or figures are indistinct or ambiguous, or should Tenderers have any queries regarding this document they may contact by e-mail only to the Employer indicated in C1.1 above.<br>Telephone discussions shall only be permitted in order to clarify written queries.<br>No unauthorized alteration, addition or note entered by Tenderer in Tender documents shall modify the printed text. |
| **Alternative Tender Offers C. 2.12** | If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the employer's standards and requirements, the details of which may be obtained from the Employer's Agent.<br><br>Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.<br><br>Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contractor for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the employer's standards and requirements.<br>The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the employer's costs of confirming the acceptability of the detailed design before it is constructed. |
| **Submitting a Tender Offer C2.13**<br><br>**C.2.13.1** | Whole of the Works<br>Tenderers shall offer to provide for the whole of the Works identified. |
| **C.2.13.2** | Original Tender documents<br><br>The original Tender document, issued to the Tenderer, shall be submitted in its entirety. No copies are required. |

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| Subclause | Tender Data |
|---|---|
| | All returnable documents clearly marked with the Project number and the name of the Tenderer must be in a separate file, clearly indexed and separated by marked sheets. |
| **C.2.13.5** | Marking of Tender Submissions<br><br>The complete Tender documents shall be enclosed and sealed in a single envelope, marked: **"CONTRACT No. BM01/25/26 FOR: CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS."**<br>The Employer's address for delivery of Tender offers to be shown on each tender submission package is the **Tender box located atat the reception area of Municipal office in Senwabarwana**. |
| **C.2.13.6** | **Two envelope system**<br><br>A two-envelope procedure will not be followed |
| **C.2.15** | Closing Time<br><br>**Closing time for submission of tender offers is: 11H00 on 30 July 2025.Telephonic, telegraphic, telex, facsimile, e-mailed or postal tender offers will not be accepted.** |
| **C.2.16** | **Tender offer validity**<br><br>The Tender Offer validity period is 90 (Ninety days) days from the closing date for submission of tenders. |
| **C.2.18.1** | **Provide other Material**<br><br>Upon request by the Employer, the Tender shall promptly supply any other material that has a bearing on the tender offer, the Tenderer's commercial position (including, where applicable, notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the Employer for the purpose of a full and fair assessment. Should the Tenderer not provide the information or material called for, by the time for submission stated in the Employer's request, the Employer will regard the tender offer as being non-responsive. |
| **C.2.19** | **Inspections, tests and analysis**<br><br>Access shall be provided for inspections and testing by personnel acting on behalf of the Employer. |
| **C.2.22** | **Return of Tender documents**<br><br>Not applicable. |
| **C.2.23** | **Certificates** |
| | The tenderer is required to submit with his tender: |
| | (1) Tax Clearance Certificate issued by the South African Revenue Services; and<br>(2) an original or certified copy of the Company / CC Registration. In case of Joint Venture – both companies / cc to submit registration documentation.<br>(3) In case of Joint Venture – the Joint Venture Agreement. |
| **Opening of Tender Submissions C.3.4** | The time and location for opening of tender offers:<br>Time **11h00 on 30 July 2025**<br>Location: **Blouberg Local Municipality 2nd Building, Mogwadi/ Senwabarwana Road. Municipal West wing boardroom** |

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| Subclause | Tender Data |
|---|---|
| **C.3.5** | **Two-envelope system**<br><br>The two-envelope system will not apply to this Tender |
| **Arithmetical Errors C.3.9.1** | Delete paragraphs (b) and (c) of C.3.9.1 and replace with:<br><br>b) If bills of quantities (or schedule of quantities or schedule of rates) apply and there is an error in the line-item total resulting from the product of the unit rate and the quantity, the line-item total shall govern, and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line-item total as quoted shall govern, and the unit rate shall be corrected.<br><br>c) Where there is an error in addition, either as a result of other corrections required by this checking process or in the Tenderer's addition of prices, such error will be corrected by the Employer in determining the Contract Price.<br><br>d) The Contract Price for the completed Contract shall be computed from the actual quantities of authorized work done and compliant with the Contract Data, valued at rates contracted against the respective items in the bill of quantities, schedule of Quantities or schedule of rates and shall include such authorized Provisional Sums and items of extra work as have become payable in terms of the Contract Data. |
| **C.3.11** | **Evaluation of Tender Offers**<br><br>Tenders will be evaluated on quality, price and preference. It is important that the relevant information is included to enable the Technical Proposal to be evaluated in accordance with the procedure outlined below. All information must be submitted in a separate file. Tampering with the original tender document will render the tender non-responsive. Failure to comply with the above requirements will result in the Tender being disqualified.<br><br>The Tender evaluation will be conducted as follows:<br><br>Responsive tenders will be evaluated according to the Preferential procurement Regulations, 2022 as published in Government Gazette 47452 dated 04th November 2022.<br><br>**First stage –Compliance with Tender Conditions and other Requirements**<br>The tender will be checked to ensure that they comply with the Tender Conditions and all other requirements of the project document. In particular, the following documentation must be completed, signed and included in the tender:<br>a Proof of a valid SARS TCS PIN<br>b Company Registration Certificate (CK)<br>c Bounded Tender Document as per specified Colour Coding<br>d Attendance of compulsory Briefing Session<br>e Certified Copies of Company Owner's ID Book(s) not older than 6 months<br>f Original or certified copy of up-to-date statement of municipal rates & taxes and municipal service charges for company and company owners (not more than three months and not in arrears), if renting a lease agreement. If a bidder is operating where municipal rates are not applicable, a certified copy of residence from traditional authority must be submitted<br>g Relevant CIDB Grading (7CE OR HIGHER)<br>h B-BBEE Certificate issued by SANAS registered service provider<br>i Signed Audited Annual Financial Statements for 3 consecutive years 22/23 to 24/25<br>j Letter of intent to sub-contract<br>k Authority for Signatory<br>l Completion of Form of Offer<br>m Completion and Compliance with Addendum<br>n Joint Venture Agreement (if applicable) |

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| Subclause | Tender Data |
|---|---|

o Valid Letter of Good standing issued by Department of Labour (COIDA) relevant to the works
p Completion of Schedule of Quantities
q Letter of Intent of contract performance guarantee from a registered service provider with NCR and/or FSP
r Letter of intent of Insurance of works and public liability issued by a registered service provider with FSP
s Completion of MBD Forms (MBD 1, 2, 4, 6, 7, 8 & 9)
t The Central Supplier Data Base (CSD), printed within 5 days before closing date

Failure to comply with the Tender Conditions or to supply the necessary information at tender closure **WILL** result in the tender being rejected. Non submission of any of the forms listed above will result in the Tender being rejected as non-responsive.

**Second Stage in Evaluation: Quality or Functionality: Points System**

A brief description of the scoring system is given below. A tabulated score sheet which will be used in the evaluation is as shown below.

The tenderer must be able to demonstrate that he understands the project and the various tasks required. Innovative solutions will be viewed favorably. For a definition of all terms, refer to Scope of Works. Tenderers' submissions will be evaluated based on compliance with the following criteria to determine the responsiveness to the Tender requirements:

i. Capability statement of the company with regard to this type of work in BLM, and the specifications of this bid in particular. Provide project descriptions of similar completed projects, highlighting similarities between the completed projects and the specifications of this project. Highlight experience with similar projects in South in the past 10 years. Provide contact details of employers for these projects. Points will be awarded for each project completed that is at least one grading lower than the CIDB grading called for this project.
ii. Organogram and CV's for key personnel
iii. Bank rating
iv. Plant and equipment: Indicate own and hired equipment, clearly indicating equipment to be used specifically for this project.

It is important that the tenderer provides information as requested as this information will be used for functionality in which a **minimum of 70 points** must be scored to move to the next stage of evaluation. The scoring will be according to the table below:

**Scoring of Functionality:**

Functionality will be as follows

| No. | Summary of tables | Max | Score |
|---|---|---|---|
| 1. | Experience & References | 60 | |
| 2. | Representative experience | 10 | |
| 3. | Banking rating | 10 | |
| 4. | Representative Qualification | 10 | |
| 5. | Plants & Equipment | 10 | |
| **Sub-Total** | | **100** | |

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| Subclause | Tender Data |
|---|---|

**COMPANY EXPERIENCE & REFERENCES**
**SCORING CRITERIA**

| No | Target goals<br>Five (05) largest completed road construction or rehabilitation projects with final completion certificate attached (and construction appointment letters, will be assessed as follows: | Weighting (point of each project) |
|---|---|---|
| 1. | Completed projects with value of > R 10 Million | 12 |
| 2. | Completed projects with value of R 5 Million to less than R 10 Million | 5 |
| 3. | Completed projects with value of less than R 5 Million to R 3 Million | 4 |
| 4. | Completed projects with value of < R 3 Million | 1 |
| Max Points | | **60** |

**Note: Bidders must complete company experience and add certified supporting documentation.**

**Failure to submit required FINAL COMPLETION CERTIFICATE and reference letter will result in the bidder getting zero points.**

**NB: Final Completion certificates must be signed by all parties namely: the employer, Engineer and the contractor (certificates that is not signed by ALL relevant parties will result in the bidder forfeiting points)**

**REPRESENTATIVE EXPERIENCE**

| No | Target goal<br>(attach Valid Certified copy of Qualifications, professional registration and SAPS affidavit confirming that the employee is employed by the tendering entity). | Weight | Score |
|---|---|---|---|
| 1. | **CONTRACT MANAGER**<br>Contract manager in projects involving roads & stormwater projects<br>10 years and above = 4<br>8 years = 3<br>6 years = 2<br>4 years = 1 | **4** | |
| 2. | **SITE AGENT**<br>Construction manager (Site agent) in projects involving roads & stormwater projects<br>10 years and above = 2<br>4-8 years = 1 | **2** | |
| 3. | **FOREMAN**<br>Foreman in projects involving roads & stormwater projects<br>10 years and above = 2<br>6-8 years = 1 | **2** | |
| 4. | **HEALTH AND SAFETY**<br>Health and Safety officers years' of experience as OHS Safety officer in projects involving roads & stormwater projects<br>10 years and above = 2<br>5 years and below =1 | **2** | |
| **SUBTOTAL: Representative experience** | | **10** | |

**Note: Project organogram of the project team must be attached. Curriculum vitae with certified copies of qualifications and contact details should be attached to the tender document for verification by the clients.**

**NB foreign qualifications certified copies from SAQA must also be attached.**

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| Subclause | Tender Data |
|---|---|

**Banking Rating**

| No | Target goals | Max Points |
|---|---|---|
| 1 | **Banking rating "A" or B = 10**<br>**Banking rating C = 5**<br>**Banking rating D = 2**<br>**Non submission = 0** | **10** |

**REPRESENTATIVE QUALIFICATION**

| No. | Target goals | Weighting | Score |
|---|---|---|---|
| 1. | **CONTRACT MANAGER**<br>BSc/B-Tech or higher in Civil Engineering Post Graduate Qualification including NQF7 – Labour Intensive (LIC) with valid Professional Registration with ECSA as Professional Engineer / Technologist (Pr. Eng./Pr.Tech) = 3<br><br>BSc/B-Tech or Higher in Civil Engineering Post Graduate Qualification, NQF5 Labour Intensive (LIC) with Professional Registration with ECSA as Professional Engineer / Technologist (Pr. Eng./Pr.Tech) = 2<br><br>National Diploma Civil Engineering with Professional Registration including NQF5 or above Labour Intensive (LIC) Professional Registration with ECSA as Professional Engineer / Technologist (Pr.Techni) =1<br><br>**Note: None submission of NQF 5/7 LIC and Pr. Registration will result to 0 points obtained.** | **3** | |
| 2. | **CONSTRUCTION MANAGER** (CR14 Regulation 8(1)<br>**National Diploma Civil or Higher including**<br>NQF5 -Labour Intensive (LIC) = 3<br><br>**N6 Certificate in Civil** including NQF5 Labour Intensive (LIC) = 2<br><br>**Note: None submission of NQF 5/7 LIC will result to 0 points obtained.** | **3** | |
| 3. | **Construction supervisor** (Foreman) (CR14 Regulation 8(7)<br><br>N6 Certificate or above in Civil Engineering = 2<br>Matric Certificate = 1 | **2** | |

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| Subclause | Tender Data |
|---|---|

| | | | |
|---|---|---|---|
| 4. | **Safety Officer (CR14 Regulation 8(5))**<br>B-Tech in Safety Management and Registration with SACPCMP as a Professional Safety Officer (Pr. CSHO) = 5<br>National Diploma in Safety Management SAMTRAC or NOSA Registration with SACPCMP as safety officer (Pr. CSHO) = 3<br>National Diploma in Safety Management without registration with SACPCMP as Safety Officer (Pr. CSHO) = 2<br>NOSA SAMTRAC or NEBOSH without Registration with SACPCMP as a Professional Safety Officer (Pr. CSHO) = 1 | **2** | |
| **SUBTOTAL: Representative Qualification** | | **10** | |

**Note:**
**Project organogram of the project team should be attached. Curriculum vitae with certified copies of qualifications and contact details should be attached to the tender document for verification by the clients.**

**NB foreign qualifications certified copies from SAQA must also be attached.**

| **Plant and equipment** | | | |
|---|---|---|---|
| **No** | **Target goals** | **weight** | **Score** |
| 1. | At least 2 X Tractor Loader Backhoe | **1** | |
| 2. | At Least 2 X 10m$^3$ Tipper Truck | **2** | |
| 3. | At Least 1 X 30 Ton Excavator | **2** | |
| 4. | At Least 2 X 18000l Water Tanker or above | **1** | |
| 5. | Atlest 1x Grader | **2** | |
| 6. | At Least 1 x Smoot and 1x Padfoot Roller | **2** | |
| **Maximum points** | | **10** | |

**Please Note:**

a) Proof of ownership to be submitted with tender. If plant will be hired, a signed letter from plant Hire Company confirming availability to the service provider for this particular contract and the proof of valid hirer ownership documents showing that the company intending to hire the machine to the tenderer owns the machines.
b) Should the bidder submit 50% of the required quantity they will obtain half of the points per item on respective plant.
c) Should the bidder submit less capacity of plant required were applicable will obtain zero points.
d) For the Excavator and walk behind rollers, a proof of purchase invoice in the name of the tenderer accompanied by the SAPS affidavit confirming that such excavator is still under the tenderer ownership is mandatory to score the points.
e) The proof of ownership for item 1-6 should be accompanied by the copy of traffic department annual renewal certificate with the disc in order for the tenderer to score points.

**Third stage – Evaluation in terms of the 80/20 Preference Point System:**

**Step 1: Calculation of points for Price**

**The following must be completed in full**

* The pricing schedules

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<table>
<tr><th>Subclause</th><th>Tender Data</th></tr>
<tr><td></td><td>
* The form of offer. No alterations, subtractions or additions may be made to the items in the pricing schedule. All items must be priced or calculated.<br><br>
A total of 80 points will be awarded to the Tender with the lowest balanced price. The other Tenderers will be awarded points based on the ratio of the price under consideration to the lowest price.<br>
$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$$
where<br>
Ps = Points scored for comparative price of Tender under consideration<br>
Pt = Comparative price of Tender under consideration<br>
$P_{min}$ = Comparative price of lowest acceptable Tender<br><br>
<u>Step 2: Calculation of points for Specific goals</u>
<table>
<tr><th>Preferential Elements</th><th>20 Points</th><th rowspan="2">Points claimed</th></tr>
<tr><th>Historical Disadvantage Individual - Contributor</th><th>Number of Points (80/20 system)</th></tr>
<tr><td>1.Locality = [(Limpopo = 6, / Out site = 1)]</td><td>6 = (attach certified proof of address in the form of municipal statement account of services}. If residing in rural area please attached a tradition authority with an affidavit supporting proof of address)</td><td></td></tr>
<tr><td>2.Gender [(Women = 4, Men = 3)]</td><td>4 = (attach certified copies of identity documents)</td><td></td></tr>
<tr><td>3.Youth = [18 35] = (Youth =1 ; outside rage =0)</td><td>1 = (attach certified copies of identity documents)</td><td></td></tr>
<tr><td>4.Race [African = 8, White = 1, Coloured = 1]</td><td>8 = (attach certified copies of identity documents)</td><td></td></tr>
<tr><td>5.Disability [Any] = 1</td><td>1 = (form of proof / letter / medical report signed and certified by a qualified/registered medical practitioner)</td><td></td></tr>
<tr><td>6.Non-compliant contributor</td><td>0</td><td></td></tr>
</table>
Note to tenderers: The tenderer must indicate how they claim points for each preference point system.
</td></tr>
<tr><td><u>ACCEPTANCE OF TENDER OFFER</u><br>C.3.13</td><td>Tender offers will only be accepted on condition that:</td></tr>
</table>

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| Subclause | Tender Data |
|---|---|
| | a) Tenderers have met all Tender conditions and administrative responsiveness requirements. (Refer Clause C3.11 2(a).)<br><br>b) tenderer has obtained at least sixty (60) percentage points for Functionality. (Refer to Clause C3.11. 2(b))<br><br>**c)** Parties to the Contract (i.e., Employer and the tenderer) agreeing on mutually acceptable contractual terms and conditions failure which the Employer reserves the right to appoint an alternative tender. |
| **PROVIDE COPIES OF THE CONTRACT DOCUMENT C.3.17** | The number of paper copies of the signed Contract to be provided by the Employer to the successful Tender is **one** |
| **BLM Special No.1 SMME's:** | **SMME's:**<br><br>**It is a requirement of this contract that participation in the contract must be granted to local SMME companies. Local** is defined as "having their head office within the Limpopo Province boundaries". A SMME company should be a registered company, but not necessarily be registered with CIDB, although it is preferred. **The Contractor must show his intension for subcontracting in the form of letter and this is mandatory and will be used as an evaluation criteria.** |
| **BLM Special No.2 Labour Content:** | The minimum Labour content for this project shall be 50 Local Labour. |
| **EPWP** | Only those tenderers who can demonstrate that they will have in their employ management and supervisory staff satisfying the requirement of the scope of work for labour-intensive competencies for supervisory and management staff during the validity of the contract are eligible to submit tenders.<br><br>The tenderer 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 eligibility requirements. |

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# PART T2: LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:

T2.1 LIST OF RETURNABLE SCHEDULES ..... T.20

T2.2 OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION ..... T.74

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## T2.1 LIST OF RETURNABLE SCHEDULES


T2.1 A DECLARATION OF GOOD STANDING REGARDING TAX ..... T.22

T2.1 B TAX CLEARANCE REQUIREMENTS MBD 2 ..... T.23

T2.1 C CSD ..... T.25

T2.1 D CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATIONT.26

T2.1 E COMPANY REGISTRATION ..... T.27

T2.1 F CERTIFICATE OF AUTHORITY ..... T.28

T2.1 G CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING (THE ATTENDACE REGISTER WILL BE SIGNED AT THE CLARIFICATION MEETING) ..... T.31

T2.1 H RECORD OF ADDENDA TO TENDER DOCUMENTS ..... T.32

T2.1 I CERTIFICATE OF NON-COLLUSIVE TENDER ..... T.33

T2.1 J CERTIFICATE OF INDEPENDENT DETERMINATION ..... T.35

T2.1 K COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND CONSTRUCTION REGULATIONS, 2014 ..... T.37

T2.1 L FINANCIAL DETAILS,STATEMENTS AND BANK REFERENCES ..... T.38

T2.1 M COMPULSORY ENTERPRISE QUESTIONNAIRE ..... T.39

T2.1 N PRICING SCHEDULE – FIRM PRICES MBD 3.1 ..... T.42

T2.1 O PRICING SCHEDULE – NON-FIRM PRICES MBD 3.2 ..... T.43

T2.1 P DECLARATION OF INTEREST MBD 4 ..... T.46

T2.1 Q DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED) MBD 5 ..... T.50

T2.1 R PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022 MBD 6.1 ..... T.52

T2.1 S DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENTT.57

T2.1 T CONTRACT FORM - PURCHASE OF GOODS/WORKS MBD 7.1 ..... T.60

T2.1 U CONTRACT FORM - RENDERING OF SERVICES MBD 7.2 .... T.62

**T2.1 V** DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENTPRACTICES MBD 8 ..... T.64

T2.1 W CERTIFICATE OF INDEPENDENT BID DETERMINATION MBD 9 ..... T.66

T2.1 X CURRICULUM VITAE OF THE SITE AGENT ..... T.69

T2.1 Y REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION ANDT.70

T2.1 Z EMPLOYMENT OF SMME'S ..... T.73

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## CHECKLIST:

| No. | Requirements Checklist (Bids will be disqualified if the following is not provided) | Tick | Comment if not Attached |
|---|---|---|---|
| **COMPULSORY** | | | |
| 1. | Proof of SARS TCS PIN (for all companies in case of a Joint Venture) | | |
| 2. | Company Registration Certificate (for all companies in case of a Joint Venture) | | |
| 3. | Document printed in colour coding | | |
| 4. | Attendance of compulsory Briefing Session | | |
| 5. | Certified ID copies of all directors/member/shareholders of the company not older than 6 months (for all companies in case of a Joint Venture) | | |
| 6. | The latest Municipal Account with Municipal rates & Services charges for both company and directors must be attached,(NB: Bidders may not be in arreas for more than 3 months with these rates and charges).Lease agreement for Lessee and Municipal rates and taxes statement for the lessor as proof of the existence of the property and Tribal office letter for rural area | | |
| 7. | Copy of relevant CIDB Grading | | |
| 8. | Signed Audited Annual Financial Statements for 3 consecutive years | | |
| 9. | Letter of intent to sub-contract | | |
| 10. | Authority for Signatory | | |
| 11. | Completion of Form of Offer | | |
| 12. | Completion and Compliance with Addendum | | |
| 13. | COIDA | | |
| 14. | Completion of Schedule of Quantities | | |
| 15. | Insurance Statement | | |
| 16. | Completion of MBD Forms (MBD 1, 2, 4, 6, 7, 8 & 9) | | |
| 17. | The bidder must submit master registration number (CSD registration no.) to enable the municipality to verify bidder's tax compliance and other information | | |
| | **IF APPLICABLE** | | |
| 15. | In case of a Joint Venture, Association or Consortium a formal contract agreement must be signed by both parties and be attached | | |
| | **REQUIRED FOR POINTS SCORING** | | |
| 16. | Curriculum Vitae of key personnel with **original** certified copies of qualifications, years of relevant experience on similar projects and projects names. | | |
| 17. | Schedule of company experience (appointment letters and completion certificates) | | |
| 18. | Schedule of plants | | |
| 19. | Bank rating letter not older than 3 months | | |
| 20. | Original /certified copy of B-BBEE certificate issued by SANAS (Consolidated B-BBEE certificate in case of a Joint Venture) | | |

**Note: This is just a guide to assist you and is not necessarily all the information required. The BLM indemnifies itself and retain the rights to evaluate the full documentation.**

_____ _____

**Service provider / representative** **Signature**

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## T2.1 A DECLARATION OF GOOD STANDING REGARDING TAX

**The Contractor shall attach in this page the SARS Tax Compliance Status certificate with Pin.**

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## T2.1 B TAX CLEARANCE REQUIREMENTS MBD 2

IT IS A CONDITION OF BIDDING THAT

1. The taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with the Receiver of Revenue to meet his / her tax obligations.

2. The attached form “Application for Tax Clearance Certificate (in respect of bidders)”, must be completed in all respects and submitted to the Receiver of Revenue where the bidder is registered for tax purposes. The Receiver of Revenue will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of twelve (12) months from date of issue. This Tax Clearance Certificate must be submitted in the original together with the bid. Failure to submit the original and valid Tax Clearance Certificate may invalidate the bid.

3. In bids where Consortia / Joint Ventures / Sub-contractors are involved each party must submit a separate Tax Clearance Certificate. Copies of the Application for Tax Compliance Status Certificates are available at any Receiver’s Office.

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# APPLICATION FOR TAX CLEARANCE CERTIFICATE

## (IN RESPECT OF BIDDERS)

1. Name of taxpayer / bidder:.....

2. Trade name: .....

3. Identification number: | | | | | | | | | | | | | |

4. Company / Close Corporation registration number: | | | | | | | | | |

5. Income tax reference number: | | | | | | | | | | |

6. VAT registration number (if applicable): | | | | | | | | | | |

7. PAYE employer's registration number (if applicable): | | | | | | | | | | |

ignature of contact person requiring Tax Clearance Certificate: .....

Name: .....

Telephone number: Code……Number .....

Address: .....

.....

……...

DATE: 20_____ / _____ / _____

PLEASE NOTE THAT THE COMMISSIONER FOR THE SOUTH AFRICAN REVENUE SERVICE (SARS) WILL NOT EXERCISE HIS DISCRETIONARY POWERS IN FAVOUR OF ANY PERSON WITH REGARD TO ANY INTEREST, PENALTIES AND / OR ADDITIONAL TAX LEVIABLE DUE TO THE LATE- OR UNDERPAYMENT OF TAXES, DUTIES OR LEVIES OR THE RENDITION RETURNS BY ANY PERSON AS A RESULT OF ANY SYSTEM NOT BEING YEAR 2000 COMPLIANT.

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## T2.1 C CSD

**The bidder must submit master registration number (CSD registration no.) to enable the municipality to verify bidder's tax compliance and other information. Attach CSD printed within 5 days before closing date.**

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## T2.1 D CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATION

Copy of relevant CIDB Grading downloadable from the CIDB website.

Note:

1. Failure to attach such documentation as prescribed on this page shall result in this tender not being further considered for the award of the contract.

2. Should this tender be considered for award of the contract, based on proof of submission of application for registration in the appropriate category with the CIDB, and should proof of such subsequent registration not be forthcoming to the employer by the time of award of the contract, then this tender will no longer be considered for the award of the contract.

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

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## T2.1 E COMPANY REGISTRATION

**Bidders to attach the company registration document.Incase of Joint Venture all bidders to submit.**

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

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## T2.1 F CERTIFICATE OF AUTHORITY

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

| A<br>Company | B<br>Partnership | C<br>Joint Venture | D<br>Sole Proprietor | E<br>Close Corporation |
|---|---|---|---|---|
| | | | | |

### A. Certificate for company

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

As witness

1…….  ……

.  Chairman

2……  ……..

### B. Certificate of partnership

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

authorize Mr/Ms……, acting in the capacity of……to sign all documents in connection with the bid for Contract……and any contract resulting from it on our behalf.

| NAME | ADDRESS | SIGNATURE | DATE |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

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

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## C. Certificate for Joint Venture

We, the undersigned, are submitting this bid offer in Joint Venture and hereby authorize Mr/Ms……..,authorized signatory of the company……,

acting in the capacity of lead partner, to sign all documents in connection with the bid offer for Contract……and any other contract resulting from it on our behalf.

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

| NAME OF FIRM | ADDRESS | AUTHORISINGSIGNATURE, NAME &CAPACITY |
|---|---|---|
| Lead partner | | |
| | | |
| | | |
| | | |

## D. Certificate for sole proprietor

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

As Witness:

1…….. ……
Signature: Sole owner

2……. ……
Date

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## E. Certificate for Close Corporation

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

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

| NAME | ADDRESS | SIGNATURE | DATE |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

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

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## T2.1 G CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING (THE ATTENDACE REGISTER WILL BE SIGNED AT THE CLARIFICATION MEETING)

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## T2.1 H RECORD OF ADDENDA TO TENDER DOCUMENTS

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

| | Date | Title of Details |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |
| 6. | | |
| 7. | | |
| 8. | | |
| 9. | | |
| 10. | | |

Attach additional pages if more space is required.

Signed…… Date ……..

Name……... Position……..

Tenderer……..

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## T2.1 I CERTIFICATE OF NON-COLLUSIVE TENDER

## 1 IN THE CASE OF A SINGLE CONSTRUCTION CONCERN:

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

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

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

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

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

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

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

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

SIGNED ON BEHALF OF TENDERER: .....

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## I: CERTIFICATE OF NON-COLLUSIVE TENDER (continued)

### 2 IN THE CASE OF A CONSORTIUM OF CONSTRUCTION CONCERNS:

We certify that this is a bona fide tender.

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

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

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

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

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

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

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

SIGNED ON BEHALF OF TENDERER: .....

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## T2.1 J CERTIFICATE OF INDEPENDENT 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_____that: (Name of Bidder)

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

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

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

   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no

   consultation, communication, agreement or arrangement with any competitor regarding:

   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit, a bid;
   (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
   (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

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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.

**[3] 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 an d contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

..... .....

Signature Date

..... .....

Position Name of Bidder

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## T2.1 K COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND CONSTRUCTION REGULATIONS, 2014

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

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

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

**Note to tenderer:**

**Discovery that the tenderer has failed to make proper disclosure may result in BLOUBERG LOCAL MUNICIPALITY terminating a contract that flows from this tender on the ground that it has been rendered invalid by the tenderer's misrepresentation.**

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## T2.1 L FINANCIAL DETAILS,STATEMENTS AND BANK REFERENCES

Furnish an audited copy of the latest set of financial statements together with Directors' and Auditors' report for consideration by the Client.

## DETAILS OF TENDERERS BANKING INFORMATION

I/We hereby authorise the Client/Employer's Agent to approach all or any of the following banks for the purposes of obtaining a financial reference: you are also required to

a) Account Holder Name:.....

b) Name of Bank: .....

c) Branch of Bank .....

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

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

f) Telephone number of Bank: Code: …… Number: ……

g) Account Number: .....

h) Bank rating:..... .....

SIGNED ON BEHALF OF THE BANK

NAME OF BANK OFFICIAL:.....

DESIGNATION: .....

SIGNATURE: .....

DATE: .....

BANK STAMP

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

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

DATE: .....

**NB: ANY OTHER DOCUMENT WILL NOT BE ACCEPTED**

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## T2.1 M COMPULSORY ENTERPRISE QUESTIONNAIRE

**THE FOLLOWING PARTICULARS MUST BE FURNISHED, IN THE CASE OF A JOINT VENTURE SEPARATE ENTERPRISE QUESTIONNAIRES IN RESPECT OF EACH PARTNER MUST BE COMPLETED AND**

**SUBMITTED** OTHERWISE THE TENDER WILL BE DECLARED NON-RESPONSIVE

**Section 1:** **Name of enterprise:** .....

**Section 2:** **VAT registration number, if any:** .....

**Section 3:** **CIDB registration number, if any:** .....

**Section 4:** **Particulars of sole proprietors and partners in partnerships**

| Name* | Identity Number * | Personal income tax number* |
|---|---|---|
| | | |
| | | |
| | | |

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

**Section 5:** **Particulars of companies and close corporations**

Company registration number .....

Close corporation number .....

Tax reference number .....

**Section 6:** **Record in the service of the state**

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stake holder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- ☐ a member of any municipal council
- ☐ A member of any provincial legislature
- ☐ A member of the National Assembly or the National Council of Province
- ☐ A member of the board of directors of any municipal entity
- ☐ An official of any municipal or municipal entity
- ☐ An employee of any provincial department, national or provincial public entity or constitutional institution within the meeting of the Public Finance Management Act, 1999 (Act 1 of 1999)
- ☐ A member of an accounting authority of any national or provincial public entity
- ☐ An employee of Parliament or a provincial legislature

**If any of the above boxes are marked, disclose the following:**

| Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder | Name of institution, public office, board or organ of state and position held | Status of service (tick appropriate column) | |
|---|---|---|---|
| | | Current | Within last 12 months |
| | | | |
| | | | |
| | | | |

- Insert separate page if necessary

**Section 7: Record of spouses, children and parents in the service of the state**

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stake holder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

☐ a member of any municipal council
☐ a member of any provincial legislature
☐ a member of the National Assembly or the National Council of Province
☐ a member of the board of directors of any municipal entity
☐ an official of any municipal or municipal entity
☐ an employee of any provincial department, national or provincial public entity or constitutional institution within the meeting of the Public Finance Management Act, 1999 (Act 1 of 1999)
☐ a member of an accounting authority of any national or provincial public entity
☐ an employee of Parliament or a provincial legislature

| Name of spouse, child or parent | Name of institution, public office, board or organ of state and position held | Status of service (tick appropriate column) | |
|---|---|---|---|
| | | Current | Within last 12 months |
| | | | |
| | | | |
| | | | |
| | | | |

- Insert separate page if necessary

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

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

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

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| | |
|---|---|
| iii) | confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption; |
| iv) | confirms that I/we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and |
| v) | confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct. |

Signed …….. Date ……..

Name …….. Position ……..

Enterprise name ……

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## T2.1 N PRICING SCHEDULE – FIRM PRICES MBD 3.1

**(PURCHASES)**

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

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

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

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

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

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

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

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

*Delete if not applicable

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## T2.1 O PRICING SCHEDULE – NON-FIRM PRICES MBD 3.2

## (PURCHASES)

**NOTE: PRICE ADJUSTMENTS WILL BE ALLOWED AT THE PERIODS AND TIMES SPECIFIED IN THE BIDDING DOCUMENTS.**

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

| | |
|---|---|
| **Name of Bidder……** | **Bid number……** |
| **Closing Time ……** | **Closing Date ……** |

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

---

**ITEM QUANTITY DESCRIPTION BID PRICE IN RSA CURRENCY NO.**

**** ( ALL APPLICABLE TAXES INCUDED)**

---

- **Required by:** ……
- **At:** ……

- **Brand and model** ……
-
- **Country of origin** ……

- **Does the offer comply with the specification(s)?** ***YES/NO**
- **If not to specification, indicate deviation(s)** ……
- **Period required for delivery** ……
- **Delivery:** ***Firm/Not firm**

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

***Delete if not applicable**

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## PRICE ADJUSTMENTS

### A NON-FIRM PRICES SUBJECT TO ESCALATION

1. IN CASES OF PERIOD CONTRACTS, NON FIRM PRICES WILL BE ADJUSTED (LOADED) WITH THE ASSESSED CONTRACT PRICE ADJUSTMENTS IMPLICIT IN NON FIRM PRICES WHEN CALCULATING THE COMPARATIVE PRICES

2. IN THIS CATEGORY PRICE ESCALATIONS WILL ONLY BE CONSIDERED IN TERMS OF THE FOLLOWING FORMULA:

$$Pa = (1 - V)Pt\left( D1\frac{R1t}{R1o} + D2\frac{R2t}{R2o} + D3\frac{R3t}{R3o} + D4\frac{R4t}{R4o} \right) + VPt$$

Where:

| | | |
|---|---|---|
| Pa | = | The new escalated price to be calculated. |
| (1-V) Pt | = | 85% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.** |
| D1, D2.. | = | Each factor of the bid price eg. labour, transport, clothing, footwear, etc. The total of the various factors D1,D2…etc. must add up to 100%. |
| R1t, R2t… | = | Index figure obtained from new index (depends on the number of factors used). |
| R1o, R2o | = | Index figure at time of bidding. |
| VPt | = | 15% of the original bid price. This portion of the bid price remains firm i.e. It is not subject to any price escalations. |

3. The following index/indices must be used to calculate your bid price:

Index……. Dated……. Index……. Dated……. Index……. Dated…….

Index……. Dated……. Index……. Dated……. Index……. Dated…….

4. FURNISH A BREAKDOWN OF YOUR PRICE IN TERMS OF ABOVE-MENTIONED FORMULA. THE TOTAL OF THE VARIOUS FACTORS MUST ADD UP TO 100%.

| FACTOR (D1, D2 etc. eg. Labour, transport etc.) | PERCENTAGE OF BID PRICE |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

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## B PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

1. Please furnish full particulars of your financial institution, state the currencies used in the Conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

| PARTICULARS OF FINANCIAL INSTITUTION | ITEM NO | PRICE | CURRENCY | RATE | PORTION OF PRICE SUBJECT TO ROE | AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD |
|---|---|---|---|---|---|---|
| | | | | ZAR= | | |
| | | | | ZAR= | | |
| | | | | ZAR= | | |
| | | | | ZAR= | | |
| | | | | ZAR= | | |
| | | | | ZAR= | | |

2. Adjustments for rate of exchange variations during the contract period will be calculated by using The average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

| AVERAGE MONTHLY EXCHANGE RATES FOR THE PERIOD: | DATE DOCUMENTATION MUST BE SUBMITTED TO THIS OFFICE | DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE | DATE UNTIL WHICH NEW CALCULATED PRICE WILL BE EFFECTIVE |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

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## T2.1 P DECLARATION OF INTEREST MBD 4

**1.** 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.

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

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

2.2 Identity Number: ……..

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

2.4 Company Registration Number: ……

2.5 Tax Reference Number……

2.6 VAT Registration Number: ……

2.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 3 below.

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

2.8.1 If yes, furnish particulars……

……..

[1]MSCM Regulations: "in the service of the state" means to be –
(a) a member of –
(i) any municipal council;
(ii) any provincial legislature; or
(iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional
(e) institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
(f) a member of the accounting authority of any national or provincial public entity; or
(g) an employee of Parliament or a provincial legislature.

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

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

2.9.1 If yes, furnish particulars……

……

2.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with

the evaluation and or adjudication of this bid? **YES / NO**

2.10.1 If yes, furnish particulars.....
.....

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

2.11.1 If yes, furnish particulars.....
.....

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

2.12.1 If yes, furnish particulars. .....
.....

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

2.13.1 If yes, furnish particulars. . .....
.....

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

2.14.1 If yes, furnish particulars: . . .....
.....

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

| Full Name | Identity Number | State Employee Number |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

……..
**Signature**

……..
**Date**

……..
**Capacity**

……..
**Name of Bidder**

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## DECLARATION

I, THE UNDERSIGNED (NAME)……

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

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

| | |
|---|---|
| …… | …….. |
| signature | date |
| …… | …… |
| position | name of bidder |

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## T2.1 Q DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED) MBD 5

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?

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. ***YES / NO**

2.2 If yes, provide particulars.
……

……

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

3.1 If yes, furnish particulars
……

……

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

4.1 If yes, furnish particulars

……..

……..

* Delete if not applicable

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## 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

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## T2.1 R PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022 MBD 6.1

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Specific goal of Contribution

**NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022.**

---

## 1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

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

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) Specific goal of Contributor.

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

| | POINTS |
|---|---|
| **PRICE** | 80 |
| **SPECIFIC GOAL OF CONTRIBUTOR** | 20 |
| **Total points for Price and Specific Goal must not exceed** | **100** |

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

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

## 2. DEFINITIONS

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

b) "prices" includes all applicable taxes less all unconditional discounts;

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

d) **"tender/did for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to,

leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

## 3. POINTS AWARDED FOR PRICE

### 3.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

**80/20** **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right) \quad \text{or} \quad Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

| | | |
|---|---|---|
| Ps | = | Points scored for price of bid under consideration |
| Pt | = | Price of bid under consideration |
| Pmin | = | Price of lowest acceptable bid |

## 4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system, then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

**Table 1: Specific goals for the tender and points claimed are indicated per the table below.**

**(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.**

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| The specific goals allocated points in terms of this tender | MEANS OF VERIFICATION DOCUMENTS REQUIRED | Number of points allocated (80/20 system) (To be completed by the organ of state) | Number of points claimed (80/20 system) (To be completed by the tenderer) |
|---|---|---|---|
| Locality = [(Limpopo = 6, / Out site = 1)] | CSD/Company registration copy and ID Copies of directors | 6 | |
| Gender [(Women = 4, Men = 3)] | CSD/Company registration copy and ID Copies of directors | 4 | |
| Youth = [18 35] = (Youth =1 ; outside rage =0) | Medical report indicating disability | 1 | |
| Race [African = 8, White = 1, Coloured = 1] | CSD/Company registration copy and ID Copies of directors | 8 | |
| Disability [Any] = 1 | municipal rates and taxes statement of account/ signed valid leasing agreement/Letter from tribal authority | 1 | |
| Non-compliant contributor | | 0 | |
| **Total points claimed** | | **20** | |

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

5.1 Name of company/firm :……

5.2 VAT registration number :……

5.3 Company registration number ……

5.4 TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

5.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

……

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**FOR**

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…… .....

…….. .....

5.6 COMPANY CLASSIFICATION

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

[TICK APPLICABLE BOX]

5.7 MUNICIPAL INFORMATION

Municipality where business is situated……

Registered Account Number…….

Stand Number …….

5.8 TOTAL NUMBER OF YEARS THE COMPANY/FIRM HAS BEEN IN BUSINESS? ……

5.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 4.2 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

i) The information furnished is true and correct;
ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding process;

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

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

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

**BLOUBERG LOCAL MUNCIPALITY**

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**FOR**
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| | |
|---|---|
| WITNESSES<br><br>1. ……..<br><br>2. …… | ……<br><br>SIGNATURE(S) OF BIDDERS(S)<br><br>DATE:<br>…….. |

**CONTRACT NO.: BM01/25/26**
**FOR**

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## T2.1 S DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT

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

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2011 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:201x.

**1. General Conditions**

1.1. Preferential Procurement Regulations, 2011 (Regulation 9.(1) and 9.(3) make provision for the promotion of local production and content.

1.2. Regulation 9. (1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Regulation 9.(3) prescribes that where there is no designated sector, a specific bidding condition may be included, that only locally produced services, works or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.

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

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

1.6. The local content (LC) as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 201x as follows:

$$LC = 1 - \left(\frac{x}{y}\right) \times 100$$

Where

x imported content

y bid price excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by the South African Reserve Bank (SARB) at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid as required in paragraph 4.1 below.

1.7. A bid will be disqualified if:

- the bidder fails to achieve the stipulated minimum threshold for local production and content indicated in paragraph 3 below; and.
- this declaration certificate is not submitted as part of the bid documentation.

**2. Definitions**

2.1. **"bid"** includes advertised competitive bids, written price quotations or proposals;

2.2. **"bid price"** price offered by the bidder, excluding value added tax (VAT);

2.3. **"contract"** means the agreement that results from the acceptance of a bid by an organ of state;

2.4. **"designated sector"** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local

production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;

2.5. **"duly sign"** means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility(close corporation, partnership or individual).

2.6. **"imported content"** means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;

2.7. **"local content"** means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;

2.8. **"stipulated minimum threshold"** means that portion of local production and content as determined by the Department of Trade and Industry; and

2.9. **"sub-contract"** means the primary contractor's assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.

**3. The stipulated minimum threshold(s) for local production and content for this bid is/are as follows:**

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

4. Does any portion of the services, works or goods offered have any imported content? YES / NO

4.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.6 of the general conditions must be the rate(s) published by the SARB for the specific currency at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid.

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

Indicate the rate(s )of exchange against the appropriate currency in the table below:

| **Currency** | **Rates of exchange** |
|---|---|
| US Dollar | |
| Pound Sterling | |
| Euro | |
| Yen | |
| Other | |

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

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

**IN RESPECT OF BID No.** .....
**ISSUED BY**: (Procurement Authority / Name of Municipality / Municipal Entity):
.....

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

I, the undersigned, ..... (full names),
do hereby declare, in my capacity as ..... .....
of .....(name of bidder entity), the following:

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

(b) I have satisfied myself that the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286.

(c) The local content has been calculated using the formula given in clause 3 of SATS 1286, the rates of exchange indicated in paragraph 4.1 above and the following figures:

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

If the bid is for more than one product, a schedule of the local content by product shall be attached.
(d) I accept that the Procurement Authority / Municipality /Municipal Entity has the right to request that the local content be verified in terms of the requirements of SATS 1286.
(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

**SIGNATURE:** _____ **DATE:** _____

**WITNESS No. 1** _____ **DATE:** _____

**WITNESS No. 2** _____ **DATE:** _____

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## T2.1 T CONTRACT FORM - PURCHASE OF GOODS/WORKS MBD 7.1

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

## PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution)…….. in accordance with the requirements and specifications stipulated in bid number…….. at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2017;
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and
   (iii) Other (specify)

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

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……

DATE ……

WITNESSES

1 ……

2. ……

DATE: ……

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

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**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## CONTRACT FORM - PURCHASE OF GOODS/WORKS MBD 7.1

## PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I…… in my capacity as……..…..accept your bid under reference number ……dated……for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.

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

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

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

SIGNED AT ……ON……..

NAME (PRINT) ……

SIGNATURE ……

OFFICIAL STAMP

WITNESSES
1. ……
2. ……
DATE……

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
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## T2.1 U CONTRACT FORM - RENDERING OF SERVICES MBD 7.2

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

### PART 1 (TO BE FILLED IN BY THE SERVICE PROVIDER)

1. I hereby undertake to render services described in the attached bidding documents to (name of the institution)…… in accordance with the requirements and task directives / proposals specifications stipulated in Bid Number…….. at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the Purchaser during the validity period indicated and calculated from the closing date of the bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (iv) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Filled in task directive/proposal;
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
   - Declaration of interest;
   - Declaration of Bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (v) General Conditions of Contract; and
   (vi) Other (specify)

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

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……

DATE ……

WITNESSES

1 ……

2

3 ……

DATE: ……

BLOUBERG LOCAL MUNCIPALITY

**CONTRACT NO.: BM01/25/26**
**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## CONTRACT FORM - RENDERING OF SERVICES MBD 7.2

## PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I…… in my capacity as……..…… accept your bid under reference number ……dated……for the rendering of services indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating service delivery instructions is forthcoming.

3. I undertake to make payment for the services rendered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice.

| DESCRIPTION OF SERVICE | PRICE (ALL APPLICABLE TAXES INCLUDED) | COMPLETION DATE | B-BBEE STATUS LEVEL OF CONTRIBUTION | MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable) |
|---|---|---|---|---|
| | | | | |

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

SIGNED AT …… ON ……..

NAME (PRINT) ……

SIGNATURE ……

OFFICIAL STAMP

WITNESSES

1 ……

2 ……

DATE: ……..

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## T2.1 V DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENTPRACTICES

**MBD 8**

**(Note that in this document, the words bid and tender, bidder and tenderer; bidders and tenderers should be used interchangeably)**

1. The bid of any bidder may be disregarded if the bidder, or any of its directors have-
   a. abused the Blouberg Local Municipality's supply chain management system;
   b. committed fraud or any other improper conduct in relation to such system, or
   c. Failed to perform on any previous contract.
2. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

| Item | Question | Yes | No |
|---|---|---|---|
| 2.1 | Is the bidder or any of its directors listed on the National Treasury's database as companies or persons prohibited from doing business with the public sector?<br>(Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the audi alteram partem rule was applied). | Yes ☐ | No ☐ |
| 2.1.1 | If so, furnish particulars: | | |
| 2.2 | Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?<br>To access this Register enter the National Treasury's website, **www.treasury.gov.za**, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445. | Yes ☐ | No ☐ |
| 2.2.1 | If so, furnish particulars: | | |
| 2.3 | Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years? | Yes ☐ | No ☐ |
| 2.3.1 | If so, furnish particulars: | | |
| 2.4 | Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract? | Yes ☐ | No ☐ |
| 2.4.1 | If so, furnish particulars: | | |

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

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**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**CERTIFICATION**

I, THE UNDERSIGNED (FULL NAME) ----------CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

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

---------- ----------

Signature Date

---------- _____

Position Name of Bidder

**CONTRACT NO.: BM01/25/26**
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## T2.1 W CERTIFICATE OF INDEPENDENT BID DETERMINATION MBD 9

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 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).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;

b. rejects the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4 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.

5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

**[1] Includes price quotations, advertised competitive bids, limited bids and proposals.**

**[2] 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.**

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

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**FOR**

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## CERTIFICATE OF INDEPENDENT BID DETERMINATION (CONTINUE)

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of: _____ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate.

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect.

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder.

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder.

5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

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

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

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

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation);
   (c) methods, factors or formulas used to calculate prices;

(d) the intention or decision to submit or not to submit a bid;
(e) the submission of a bid which does not meet the specifications and conditions of the bid; or
(f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

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

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

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

| | |
|---|---|
| ..... | ..... |
| Signature | Date |
| ..... | ..... |
| Position | Name of Bidder |

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## T2.1 X CURRICULUM VITAE OF THE SITE AGENT

Tenderer to supply curriculum Vitae of the Site Agent. This curricula vita shall provide evidence of relevant experience of the Site Agent. The personnel included here shall be used on the project unless otherwise agreed to by the Employer's Agent.

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## T2.1 Y REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION AND DEVELOPMENT PROGRAMME

### K1 General

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

Forms RDP 1 (E) to RDP 2 (E) applies to this section and must be completed and submitted with the tender.

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

### K2 Definitions

K2.1 Contract Participation Goal (CPG)

The value of goods, services and works, including VAT, for which the contractor proposes to engage labour and EME OR QSEs.

K2.2 Local Labour Maximisation

It is a requirement of this contract that participation in the contract must be granted to labour in order to maximize job creation as well as to maximize expenditure towards the unemployed.

The specified target value for local labour is 50 Labour paid at R180/day. This labour content shall be from the LOCAL COMMUNITY where Local Community means those in the immediate vicinity of the project. Labour is defined as hourly paid personnel including the CLO.

It is a requirement that the Contractor plan for achieving these targets and that a planned programme for achieving each of the targets is submitted at the start of the project together with the clause 12 programme of construction.

K2.3 EME OR QSE

1. **"EME"** means an exempted micro enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the BroadBased Black Economic Empowerment Act;

2. **"QSE"** means a qualifying small business enterprise in terms of a code of good practice non black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

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K2.4 Target values

The values of the targets (including VAT) are expressed as follows:

- At Tender stage: As a percentage of the Tender Sum (i.e. excluding Contingencies, CPA and Rise and Fall, but inclusive of VAT) as proposed by the tenderer in his tender
- After Award: As a percentage of the certified work done (i.e. excluding savings, but inclusive of variation orders and VAT)

The monetary total of these values shall be the CPG.

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

**Local Labour Maximisation (wages) : Minimum of 50 Local Labour at R180/Day**

The tender of a tenderer whose proposed target values are below the minimum set by the employer may be disqualified.

**K3 Contract Participation Performance (CPP)**

K3.1

The Contractor's Participation Performance will be measured monthly in order to monitor the extent to which he is striving to reach the Contract Participation Goal (CPG) he proposed in his tender. Failure to reach the CPG will make the Contractor liable for penalties as described above.

K3.2

Monitoring of CPG

Regular returns will be required from the contractor, to be submitted with each payment certificate. The format should be confirmed with the Social Division of **Blouberg Local Municipality** at the time of site handover.

**K4 Training**

Provision will be made in the **SCHEDULE OF QUANTITIES** for structured training to be provided by the contractor.

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## RDP1(E) SCHEDULE OF LOCAL LABOUR CONTENT

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

The specified target value is **50 Labour.**

**Note: This labour content shall be from the LOCAL COMMUNITY where Local Community means those in the immediate vicinity of the project. The minimum targets are tabled below:**

| | |
|---|---|
| **Number of Local Labour offered** | **50** |

**Notes to Tenderer:**

**(1)** **Labour is defined as hourly paid personnel including the CLO.**

**(2)** **The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.6.5.**

**(3)** **Rates for labour must R180/day as determined by the Municipal Council of Blouberg Local Municipality**

Signed…….. Date…….

Name…….. Position……

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## T2.1 Z EMPLOYMENT OF SMME'S

**It is encouraged of this contract that participation in the contract must be granted to local SMME companies.** Local is defined as "having their head office within the Limpopo Province boundaries, however preference will be given to local businesses within the vicinity of the project". **The**

Signed…….  Date…….

Name……..  Position……

## T2.2 OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION

T2.2 A SCHEDULE OF PLANT AND EQUIPMENT ..... T.75
T2.2 B SCHEDULE OF THE TENDERER'S EXPERIENCE ..... T.76
T2.2 C DEVIATIONS OR QUALIFICATIONS BY THE TENDERER ..... T.77
T2.2 D PROJECT PROGRAMME AND METHOD STATEMENT ..... T.78
T2.2 E SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE ..... T.79
T2.2 F BROAD BASED BLACK ECONOMIC EMPOWERMENT ..... T.80
T2.2 G TENDER QUALIFICATIONS ..... T.81

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## T2.2 A SCHEDULE OF PLANT AND EQUIPMENT

The following are lists of major items of relevant equipment that I/we presently own or lease and is required for this contract or will acquire or hire for this contract if my/our tender is accepted.

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

| Quantity | Description, size, capacity, etc. |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

Attach additional pages if more space is required.

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

| Quantity | Description, size, capacity, etc. |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

Attach additional pages if more space is required

Signed…….. Date……

Name…… Position……..

Tenderer……...

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

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## T2.2 B SCHEDULE OF THE TENDERER'S EXPERIENCE

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

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

**NB.: Completion certificates and appointment letters MUST be attached**

Signed…… Date ……..

Name……... Position…….

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## T2.2 C DEVIATIONS OR QUALIFICATIONS BY THE TENDERER

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

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

b) change the employer's or the tenderer's risks and responsibilities under the contract, or

c) affect the competitive position of other tenderers presenting responsive Bidders, if it were to be rectified.

| PAGE | DESCRIPTION |
|---|---|
| | |
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| | |
| | |
| | |

SIGNED ON BEHALF OF TENDERER: .....

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## T2.2 D PROJECT PROGRAMME AND METHOD STATEMENT

Tenderer to supply project programme, using acceptable software, in sufficient detail to cover the various facets of the work.

SIGNED ON BEHALF OF TENDERER: .....

**Note to Tenderer**

**If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall be attached to the bill of quantities for the alternative proposal**.

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## T2.2 E SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

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

| **MONTH** | **VALUE (INCLUDING VAT)** |
|---|---|
| 1 | R …… |
| 2 | R …… |
| 3 | R …… |
| 4 | R …… |
| 5 | R …… |
| 6 | R …… |
| 7 (FINAL) | R …… |
| **TOTAL: R……**<br><br>**(EXCLUDING CONTINGENCIES AND CONTRACT PRICE ADJUSTMENT (CPA))** | |

SIGNED ON BEHALF OF TENDERER: .....

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## T2.2 F BROAD BASED BLACK ECONOMIC EMPOWERMENT

The tenderer shall furnish BLM with the necessary information to enable BLM to evaluate the submission for Specific goal Contribution.

It is a requirement to attach a Broad Based Black Empowerment Verification Certificate (issued by a service provider accredited to SANAS), indicating amongst others the following information:

- Company name
- Company Registration Number
- VAT Number
- Issue Date
- Expiry Date
- Level Contributor
- Name of Accredited Service Provider

SIGNED ON BEHALF OF THE TENDERER.....

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## T2.2 G TENDER QUALIFICATIONS

Should the Tenderer wish to make any departure from the Conditions of Contract, Scope of Professional Services or Pricing Schedule, or to qualify his Tender in any way, he shall set out his proposals clearly in the table below. Alternatively the Tenderer may state the qualifications in a covering letter attached to his Tender and referred to below.

If there is no entry or reference made in the table below, then the Tender will be deemed to have no qualifications. A copy of this form shall be included in the Technical Proposal.

| PAGE | DESCRIPTION |
|---|---|
| | |

SIGNED ON BEHALF OF THE TENDERER: ……

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# THE CONTRACT

| | |
|---|---|
| PART C1 | AGREEMENT AND CONTRACT DATA |
| PART C2 | PRICING DATA |
| PART C3 | SCOPE OF WORKS |
| PART C4 | SITE INFORMATION |






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# PART C1: AGREEMENT AND CONTRACT DATA


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

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

C1.3 PERFORMANCE GUARANTEE .....C.10

C1.4 ABSTRACTS OF THE MINE HEALTH AND SAFETY ACT NO. 29 OF 1996 AND AMENDMENT ACT NO. 72 OF 1997.....C.16

C1.5 CONTRACT DATA .....C.17

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## C1.1 FORM OF OFFER AND ACCEPTANCE

### Offer

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

**CONTRACT No. BM01/25/26 FOR: CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

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

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

**THE OFFERED TOTAL OF THE PRICE INCLUSIVE OF VALUE ADDED TAX IS (CONTRACT PRICE)**

.....

Rand (in words); R ..... (in figures)

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

Signature(s) ..... .....

Name(s) ..... .....

Capacity ..... .....

for the tenderer .....
(Name and address of organization)

Name of Witness ..... Signature .....

Date .....

### Acceptance

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

The terms of the contract are contained in:

PART C1 Agreements and contract data, (which includes this agreement)

PART C2 Pricing data

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PART C3 Scope of work

PART C4 Site information

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

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule, which must be signed by the authorised representative(s) of both parties.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one copy of the fully signed original document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signature(s) ..... .....

Name(s) ..... .....

Capacity ..... .....

for the Employer .....
(Name and address or organization)

Name of Witness ..... Signature .....

Date .....

**For the Contractor:**

Signature(s) ..... .....

Name(s) ..... .....

Capacity ..... .....

.....
(Name and address of organization)

Name of Witness ..... Signature .....

Date .....

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**Schedule of Deviations**

| Item | Deviation Details |
|---|---|
| | |
| | |
| | |

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

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

**For the Contractor:**

Signature(s) ..... .....

Name(s) ..... .....

Capacity ..... .....

.....

(Name and address of organization)

Name of Witness ..... Signature .....

Date .....

**For the Employer:**

Signature(s) ..... .....

Name(s) ..... .....

Capacity ..... .....

.....

(Name and address of organization)

Name of Witness ..... Signature .....

Date .....

**Confirmation of Receipt**

The Tenderer, (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

the …… (day) of …… (month) 20….. (year)

at …… (place)

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**BLOUBERG LOCAL MUNCIPALITY**

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**For the Contractor:**

……
Signature

……..
Name

……
Capacity

**Signature and name of witness:**

……
Signature

……..
Name

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

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

WHEREAS the Employer is desirous that certain works be constructed, as stated for in Contract No **BLM 06/22/23** For **CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

in the Blouberg LocalMunicipality of Limpopo Province and has accepted a tender by the Principal Contractor for the construction, completion and maintenance of such works and whereas the Employer and the Principal Contractor have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Principal Contractor with the provisions of the Occupational Health and Safety Act 1993(Act 85 of 1993 and the Construction Regulation, February 2014):

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

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

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

   a) the date of the final certificate issued in terms of clause 5.14 of the General Conditions of Contract for Construction Works 2015 (3rd Edition) as issued by the South African Institution of Civil Employer's Agenting (hereinafter referred to as "the GCC 2015"), as contained in the contract documents pertaining to this contract, or

   b) the date of termination of the contract in terms of clause 9.1, 9.2 or 9.3 of the GCC 2015.

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

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

      i. Section 7: duties of Principal contractor and Contractor.
      ii. Section 8: Management and supervision of construction work
      iii. Section 37: Acts or omissions by employees or mandatories and
      iv. Sub-section 37(2) relating to the purpose and meaning of this Agreement.
      v. Construction Regulations 2014, and other safety regulations, as applicable.

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

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

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

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

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

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

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

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

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

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

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

i) Control, manage and direct employees at the Mine (borrow pit or quarry).
ii) Take all reasonable measures to ensure the health and safety of employees and proper discipline at the Mine.
iii) Take all reasonable measures to ensure that the provisions of the Mine Health and Safety Act and its regulations (as may be amended from time to time) are implemented and adhered to at the Mine.
iv) Ensure and maintain a healthy and safe mine environment for all persons.
v) Ensure an adequate supply of health and safety equipment and facilities.
vi) Staff the Mine, with due regard to health and safety.
vii) Provide health and safety training as far as reasonably practicable to all employees.
viii) Initiate, prepare and implement codes of practice, relating to health and safety.
ix) Maintain an effective risk identification and management system.
x) Ensure the effective maintenance of hazard identification and medical monitoring records.
xi) Prepare and or review the Health and Safety Policy for the Mine.

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xii) Ensure that an annual medical report is compiled at the Mine, and forwarded to the owner or the appointed owner representative of the Mine.
xiii) Ensure compliance with relevant environmental legislation.
xiv) Assist with implementation and maintenance of the SHE Management Standards, the Contractor's Compliance Pack and operational procedures.
xv) Enhance a culture of high performance in safety and health.

You are to appoint the prescribed persons to assist you in your duties and functions, and you are hereby authorised and obliged to take all reasonable measures to comply with legislative requirements. You are to ensure that an acting mine manager is appointed when you are to be absent, or on leave for a period longer than five (5) days.
Instructions and procedures are from time to time issued by the Council, and it will be your responsibility to ensure the implementation and adherence to these instructions and procedures at the Mine.
You are further responsible to ensure that relevant environmental legislative requirements are complied with, including the implementation of all internal procedures and systems to ensure compliance with such legislation.

It would be the responsibility of yourself to report any shortcomings, in relation to the implementation of applicable legislation which you are unable to rectify, immediately in writing to the appointed owner representative.

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

**SIGNED FOR ON BEHALF OF THE EMPLOYER/SECTION 4.1 APPOINTEE**

**……**

**WITNESS: 1…… 2……**

**NAME(IN CAPITALS) 1…… 2……**

**DATE: ……**

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

**WITNESS: 1…… 2……**

**NAME(IN CAPITALS) 1…… 2……..**

**DATE: ……**

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

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## C1.3 PERFORMANCE GUARANTEE

In accordance with clause 6.2.1 of General Conditions of Contract, 3rd Edition 2015

Contract No: ----------

Description of Contract: ----------

---

**GUARANTOR DETAILS AND DEFINITIONS**

"Guarantor" means: ----------

---------- (Please put name of firm)

Physical address: ----------

---

Postal address: ----------

---

Tel:----------

Fax: ----------

"Employer" means: **Blouberg LocalMunicipality**.

"Contractor" means: ----------

---------- (Please put name of firm)

"Guarantee sum" means: 10% of the contract amount

"**Employer's Agent"** means: ----------

"**Works"** means: Permanent works together with temporary works

"**Site"** means: The land and other places, made available by the Employer for the purpose of the contract, on under over in or through which the works are to be executed or carried out.

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

"**Contract Sum**" means: The accepted amount inclusive for tax of R----------

Amount in words: ----------

---

"**Expiry Date**" This Guarantee shall expire upon the issue of the **Completion Certificate** issued by Blouberg LocalMunicipality signed by the Director of Engieering Services, as such date is advised to the Guarantor in writing confirmed by the Employer.

**CONTRACT DETAILS**

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Works as defined in the Contract.

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**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**PERFORMANCE GUARANTEE**

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
2. Expiry Date" This Guarantee shall expire upon the issue of the certificate of completion issued by Blouberg LocalMunicipality signed by the Director of EMPLOYER'S AGENTING Services, as such date is advised to the Guarantor in writing confirmed by the Employer.
   The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on the Certificate of the works has been issued.

3. The Guarantor hereby acknowledges that:

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

3.2 Its obligation under this Performance Guarantee is restricted to the payment of money.

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

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

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

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract sum certified in 4.

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

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

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

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

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

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13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at ……..

Date ……..

Guarantor's signatory (1) ……...

Capacity……

Guarantor's signatory (2) ……..

Capacity ……

Witness signatory (1) ……

Witness signatory (2) ……

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

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

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

I, …….. in my capacity as ……., having been appointed in terms of **Section 3(1)** of the Act (as amended), by the Municipal Manager: The Municipality who is our client, 'Blouberg LocalMunicipality' and owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of **Regulation 2.6.1** of the Act as amended, appoint …….. as Sub-Ordinate Manager of the Contractor, …….. of address, …….. And contact number, on contract no **CONTRACT No. BM01/25/26 FOR: CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

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

1. You must identify the hazards, assess the risk and record the hazards to health and safety to which employees may be exposed while they are at work, and

2. To the extent that is reasonable, you must ensure that every employee is properly trained:

   a. In the measures necessary to eliminate, control and minimise those risks to health and safety.

   b. In the procedures to be followed to perform the employee's work.

3. To the extent that is reasonably practical, you must:-

   Ensure that every employee becomes familiar with the work-related hazards and risk and the measures that must be taken to eliminate, control and minimise those hazards and risks.

4. To the extent that is reasonably practical, you must:-

   Ensure that every employee under your control complies with the requirements of the Act.

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

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

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

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

**CONTRACT NO.: BM01/25/26**
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**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

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

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

SIGNED:.....
.....

DATE:.....
.....

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

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

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

SIGNED:.....
.....

DATE:.....
.....

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

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

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

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

**APPOINTMENT AS COMPETANT PERSON IN CHARGE OF MACHINERY IN TERMS OF REGULATION 2.13.2 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT (ACT NO. 29 OF 1996) AS AMENDED BY THE HEALTH AND SAFETY AMENDEMENT ACT (ACT NO. 72 OF 1997)**

I, …… in my capacity as ……, having been appointed in terms of **Section 3(1)** of the Act (as amended), by the Municipal Manger: The Municipality, who is our client, 'Blouberg LocalMunicipality' and owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of **Regulations 2.13.2** of the Act as amended, appoint …….. as Competent Person in charge of machinery for the Contractor, …… ……..…….. of address …….. and contact number, …… on all contracts in the Limpopo Province that are undertaken by the contractor.

You are to report any accident to the mine manager immediately and personally visit the scene of the accident without delay.

You must familiarise yourself with the Mine Health and Safety Act and the Minerals Act and the Regulations and ensure that you have a copy in your possession and you must take all reasonable measures to ensure that the provisions of this Act are complied with.

Your attention are further drawn to Regulation 2.13.4.1 as well as the requirements of Chapter 18,20 and 21.

Please confirm this appointment by signing at the bottom.

SIGNED:..... ..... DATE: .....

NAME: .....

SIGNED:..... ..... DATE: .....

NAME: .....

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**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C1.4 ABSTRACTS OF THE MINE HEALTH AND SAFETY ACT No. 29 OF 1996 AND AMENDMENT ACT No. 72 OF 1997

**DEFINITIONS:**

Section 102 of the Mine Health and Safety Act refers.

"mine" means, when –

(a) "used as a noun-

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

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

(iii) a works; and

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

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

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

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

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

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

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

b)Training at any central rescue station, or

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

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

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## C1.5 CONTRACT DATA

### C1.5.1 GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works - (3rd edition 2015)", issued by the South African Institution of Civil Engineering (Short title: **"General Conditions of Contract 2015**") and can be obtained from:

**SAICE**
Waterfall Park
Howick Gardens
Vorna Valley Half way House
Becker Street
MIDRAND
1685
Gauteng Province
Tel: (011) 805-5947/8
Fax: (011) 805-5971.

It is agreed that the only variations from the General Conditions of Contract 2015 are those set out hereafter under "Special Conditions of Contract".

**SPECIAL CONDITIONS OF CONTRACT**

**1. GENERAL**

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or sub clause in the General Conditions of Conditions 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

**2. ADDITIONAL SPECIAL CONDITIONS OR AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT**

**2.1 General**

The following clauses add to, vary or otherwise amend the General Conditions of Contract:

2.1.1 Cession (CL 2.5.1)
Delete the words "without the written consent of the other".

2.1.2 Contractor's Superintendence (CL 4.12)

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Add the following sub-clause 4.12.4 to Clause 4.12:

"Where a form is included in the Appendix to the Contract Data for this purpose, the Bidder shall fill in the name of the person he proposes to entrust with the post of Contractor's Site Agent on this Contract in the space provided therefor. Previous experience of this person on work of a similar nature during the past five (5) years is to be entered in the list.

The Contractor's Site Agent shall be on Site at all times when work is being performed.

The person as approved of by the Employers Agent in writing shall not be replaced or removed from Site without the written approval of the Employers Agent."

2.1.3 Programme (CL 5.6)
Add the following sub-clause 5.6.6 to Clause 5.6:

"Failure on the part of the Contractor to deliver to the Employers Agent, the

- programme of the Works in terms of Clause 5.6.1 and
- supporting documents in terms of Clause 5.6.2

Within the period stated in the Contract Data, shall be sufficient cause for the Employers Agent to retain 25 per centum of the value of the Fixed Charge and Value-related items in assessment of amounts due to the Contractor, until the Contractor has submitted aforementioned first Programme of the Works and Supporting Documents".

2.1.4 Contractor's Designs and Drawings (CL 5.9.7)
"All designs, calculations, drawings and operation and maintenance manuals shall be fully endorsed by a third party registered Employers Agent, accomplished in such specific field of practice and the cost thereof shall be borne solely by the Contractor.
Once the alternative design has been approved, the Contractor shall indemnify and hold harmless the Employers Agent, the Employer, their agents and assigns, against all claims howsoever arising out of the said design, whether in contract or delict"

2.1.5 Suspension of the Works (CL 5.11)
Add the following sub-clause 5.11.6 to Clause 5.11:

"If the Contractor does not receive from the Employer the amount due under an Interim Payment Certificate within 28 days after expiry of the time stated in sub-clause 6.10.4 within which payment is to be made (except for deductions in accordance with sub-clauses 6.10.1.6 and 6.10.1.7), the Contractor may, after giving 14 days' notice to the Employer, suspend the progress of the Works.

The Contractor's action shall not prejudice his entitlements to a claim in terms of Clause 10.1 and to cancellation of the Contract in terms of Clause 9.3.
If the Contractor subsequently receives full payment of the amount due under such Interim Payment Certificate before giving a notice of cancellation of the Contract, the Contractor shall resume normal working as soon as is reasonably practicable."

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2.1.6 Extension of Time Arising from Abnormal Rainfall (CL 5.12)

Add the following to sub-clause 5.12.2.2:
"The extension of time to be allowed due to abnormal rainfall shall be calculated separately for each calendar month or part thereof in accordance with the following formula:

$$V = (Nw - Nn) + \left(\frac{Rw - Rn}{x}\right)$$

V = Extension of time in calendar days for the calendar month under consideration
Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded
Nn = Average number of days for the calendar month on which a rainfall of 10 mm or more has been recorded, as derived from existing rainfall records
Rw = Actual recorded rainfall for the calendar month
Rn = Average rainfall for the calendar month, as derived from existing rainfall records
x = 20
The rainfall records which shall provisionally be accepted for calculation purposes are:

**Based on records taken at: Rainfall Station: Buffelshoek**

**Average No of Days with Rainfall exceeding 10mm: 30 days/year**

**Average Rainfall : 292.6 mm/year**

| MONTH | AVERAGE RAINFALL (mm) | RAIN DAYS (per month) |
|---|---|---|
| January | 71.2 | 7 |
| February | 50.7 | 6 |
| March | 29.6 | 5 |
| April | 17.1 | 3 |
| May | 5 | 1 |
| June | 1.4 | 0 |
| July | 1.2 | 0 |
| August | 1.6 | 1 |
| September | 6.4 | 1 |
| October | 16.7 | 3 |
| November | 35.7 | 6 |
| December | 56 | 8 |
| **Total per annum** | **292.6** | 41 |

The factor (Nw - Nn) shall be considered to represent a fair allowance for days during which rainfall exceeds 10 mm and the factor (Rw - Rn)/x shall be considered to represent a fair allowance for those days when rainfall does not exceed 10 mm but wet conditions prevent or disrupt work.

The total extension of time shall be the algebraic sum of all monthly totals for the contract period, but if the algebraic sum is negative the time for completion shall not be reduced due to

subnormal rainfall. Extensions of time for a part of a month shall be calculated using pro rata values of Nn and Rn."

2.1.7 Guarantee (Security) (CL 6.2)

Delete the contents of the first paragraph of Clause 6.2.1 and insert:

"The Contractor shall deliver to the Employer within such time as may be stated in the Contract Data a Demand Guarantee, of Insurance Company registered in terms of the Short-term Insurance Act (Act 53 of 1998) or registered Commercial Bank, in a sum equal to the amount stated in the Contract Data. The Demand Guarantee shall be issued by an entity approved by the Employer, and shall conform in all respects to the format contained in the Appendix to the Contract Data.

Wherever a joint venture constitutes the contracting party, the Demand Guarantee shall be issued on behalf of the joint venture.

Failure to produce an acceptable Demand Guarantee within the period stated in Clause 2.2.8 of the Contract Data is a fundamental breach of Contract, entitling the Employer to cancel the Contract by due notice in terms of Clause 9.2 with specific reference to sub-clause 9.2.2.5 as amended in the Special Conditions of Contract."

2.1.8 Variations (CL 6.3)

Omit the words "Provided that" under Clause 6.3.2 and omit Clause 6.3.2.1.

2.1.9 Interim Payments (CL 6.10.1)

Add to the end of Clause 6.10.1 the following paragraph:

"The Contractor shall complete the 'Contractor's Monthly Report Schedule', which pro forma documentation is obtainable from the Employers Agent. Pursuant to Sub-Clause (1), these, duly signed by all concerned, together with the Contractor's statement and a VAT invoice in original format are to be submitted to the Employers Agent. Issue by the Employers Agent to the Employer and Contractor of any signed payment certificate is conditional to this information being fully endorsed, accurately and timeously submitted to the Employers Agent".

Add to the end of Clause 6.10.1.5 the following paragraph:

"All documentary evidence of such materials shall be unambiguous with respect to ownership having fully passed to the Contractor on or before the date of submittal of the Contractor's monthly statement.

Should the Contractor fail to supply unambiguous documentary evidence, he shall, prior to submittal of his monthly statement, deliver to the Employer a Guarantor Guarantee in the form contained in the Appendices to the Contract Data."

2.1.10 Variations Exceeding 15 Per Cent (CL 6.11)

In sub-clause 6.11.1.3 omit the words "15 per cent" and replace with "'20 per cent".

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2.1.11 Insurances (CL 8.6)

2.1.11.1 Contractor to produce proof of payment

Delete sub-clause 8.6.6 and substitute with:

"The Contractor shall before commencement of the Works produce to the Employers Agent:

8.6.6.1 The policies by which the insurances are effected,

1.6.6.1 Proof that due payment of all premiums there under, covering the full required period has been made, and

8.6.6.3 Proof of continuity of the policies for the required period.

Should, during the currency of the Contract, the required period of insurance be extended for any reason, the Contractor shall timeously extend (so as to maintain) the said insurances for the full extended duration.

The Employers Agent shall be empowered to withhold all payment certificates until the Contractor has complied with his obligations in terms of this Clause 8.6."

2.1.11.2 Remedy of Contractor's failure to insure

Delete sub-clause 8.6.7 and substitute with:

"Failure on the part of the Contractor to effect and keep in force any of the insurances referred to in Clause 8.6.1 and its sub-clauses, is a fundamental breach of Contract, entitling the Employer to cancel the Contract by due notice in terms of Clause 9.2 and with specific reference to sub-clause 9.2.2.5, as amended, in the Special Conditions of Contract."

2.1.12 Termination of the Contract (CL 9.1)

Alter the numbering of:

Clause 9.1.5 to 9.1.6,
Clause 9.1.6 to 9.1.7 and

insert the following new clause 9.1.5:

"The Employer shall be entitled to cancel the Contract, at any time for the Employer's convenience, by giving written notice of such cancellation to the Contractor. The termination shall take effect 28 days after the later of the dates which the Contractor receives this written notice or the Employer returns the Demand Guarantee. The Employer shall not cancel the Contract under this sub-clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor.
This restriction on the Employer shall lapse 18 months after the date of receipt by the Contractor of cancellation in terms of this sub-clause".

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2.1.13 Termination by Employer (CL 9.2)
Delete the contents of Clause 9.2 and substitute with:

"9.2.1 The Employer may terminate the Contract by written notice to the Contractor if:

9.2.1.1 Sequestration of the Contractor's estate is ordered by a Court with due jurisdiction, or

9.2.1.2 The Contractor publishes a notice of surrender or presents a petition for the surrender of his estate as insolvent, or makes a compromise with his creditors, or assigns in favour of his creditors, or agrees to carry out the Contract under the supervision of a committee representing his creditors, or (being a company) goes into liquidation, whether provisionally or finally (other than a voluntary liquidation for the purpose of amalgamation or reconstruction), or if the Contractor assigns the Contract without having first obtained the Employer's consent in writing, or if execution is levied on his goods, or

9.2.1.3 The Contractor, or anyone on his behalf, or in his employ, offers to any person in the employ of the Employer or the Employers Agent, a gratuity or reward or commission, or

9.2.1.4 The Contractor furnished materially inaccurate information in his Bid, which had a bearing on the award of the Contract, or

9.2.1.5 The Contractor has abandoned the Contract

9.2.2 If the Contractor:

9.2.2.1 Has failed to commence the Works in terms of Clause 5.3 hereof, or has suspended the progress of the Works for fourteen (14) days after receiving from the Employers Agent written notice to proceed, or

9.2.2.2 Has failed to provide the Guarantee in terms of Clause 6.2 within the time stipulated in the Contract Data, or

9.2.2.3 Has failed to proceed with the Works with due diligence, or

9.2.2.4 Has failed to remove materials from the Site or to pull down and replace work within fourteen (14) days after receiving from the Employers Agent written notice that the said materials or work have been condemned and rejected by the Employers Agent in terms of these conditions, or

9.2.2.5 Is not executing the Works in accordance with the Contract, or is neglecting to carry out his obligations under the Contract, or

9.2.2.6 Has, to the detriment of good workmanship or in defiance of the Employers Agent's instructions to the contrary, sublet any part of the Contract, or

9.2.2.7 Has assigned the Contract or any part thereof without the Employer's consent in writing, then the Employer may give the Contractor 14 days' notice to rectify the default, and if the Contractor fails to rectify the default in said 14 days, then, without further notice, notify the Contractor in writing of the termination of the Contract and expel the Contractor and order the Contractor to vacate the site within 24 hours of issue of the Notice of Termination and to hand the Site over to the Employer, and the Employer may then enter upon the Site and the Works without affecting the rights and powers

conferred on the Employer or the Employers Agent by the Contract and the Employer may himself complete the Works or may employ another contractor to complete the Works, and the Employer or such other contractor may use for such completion so much of the Construction Equipment, Temporary Works and materials brought onto the Site by the Contractor as the Employer may think proper, and the Employer may at any time sell any of the said Construction Equipment, Temporary Works and unused materials and apply the proceeds of sale towards payment of any sums that may be due or become due to the Employer by the Contractor under the Contract. In such circumstances the Contractor shall forthwith vacate the Site and shall not be entitled to remain on the Site on the grounds that he is entitled to do so on a right of retention until amounts due to him have been paid, neither will the Contractor be entitled to any further payments in terms of this Contract.

9.2.3 If the Contractor, having been given notice to rectify a default in terms of 55.2 above, rectifies said default, but later repeats the same or substantially the same default, then the Employer may notify the Contractor of the immediate termination of the Contract, and proceed as stated in the paragraph following the word "writing" in Clause 55.2.7 above.

9.2.4 Should the amounts the Employer must pay to complete the Works exceed the sum that would have been payable to the Contractor on due completion by him, then the Contractor shall upon demand pay to the Employer the difference, and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly. Provided that should the Contractor on demand not pay the amount of such excess to the Employer, such sum may be determined and deducted by the Employer from any sum due to or that may become due to the Contractor under this or any previous or subsequent contract between the Contractor and the Employer."

2.1.14 Termination by the Contractor (CL 9.3)

Add the following paragraph as Clause 9.3.5:
"In addition to, or as an alternative to the rights to termination contained in this Clause 9.3, the Contractor may notify the default to the Employer, with a copy to the Employers Agent, and if the default is not rectified within 10 days the Contractor may suspend progress of the works until a date 7 days after the default is rectified. The Contractor shall be entitled to extension of time to the extent of delay caused by or resulting from such suspension, and to payment of additional costs caused by or resulting from the suspension. Such extension of time and additional costs shall be promptly ascertained by the Employers Agent, who shall then grant the extension of time and include the additional costs in all future payment certificates. Such suspension, extension of time and/or payment of additional costs, shall not prejudice the Contractor's rights to cancel the contract."

## 3. PRIORITY OF DOCUMENTS

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 sequence:

a) the Form of Offer and Acceptance.
b) amplifications of the General Conditions of Contract within the Contract Data.

c) additional special conditions or amendments to the General Conditions of Contract within the Contract Data.
d) the General Conditions of Contract.
e) 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 Employers Agent shall issue any necessary clarification or instruction.

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## C1.5.2 CONTRACT SPECIFIC DATA

The Conditions of Contract are the General Conditions of Contract for Construction Works (2015) published by the South African Institution of Civil Employer's Agenting. (GCC).

## SECTION 1: DATA PROVIDED BY THE EMPLOYER

| Clause | Data |
|---|---|
| 1.1.1.5 | Clause 1.1.1.5 of the GCC is replaced by the following: The "Commencement date" shall be the date the site is handed over to the Contractor. Duplicate to C1.5.2 |
| 1.1.1.14 | The Overall works shall be completed within 12 months from commencement date |
| 1.1.1.15 | The employer is the Blouberg Local Municipality, (BLM). |
| 1.1.1.15 | The BLM Agent is M. Rabumbulu. |
| 1.1.1.16 | The Employer's Agent representing the Consultant (Dolmen Employer's Agents cc) is **Mr. M.P. Sematla.** |
| 1.2.1 | The employer's address for receipt of communication is:<br>Telephone: (015) 505 7177<br>Address: P.O.Box 1593,Senwabarwana,0790 |
| 1.2.1 | The Employer's Agent address for receipt of communication is:<br>Physical:<br>22A Pres Paul Kruger street<br>POLOKWANE<br>0699<br>Postal:<br>P.O. Box 468<br>FAUNAPARK<br>0787<br>E-Mail: dolmeneng@gmail.com / polokwane@dolmenengineers.co.za<br>Telephone No: (015) 295 4885 Fax No: (015) 295 8384 |
| 3.2.3 | The Employer's Agent is required in terms of his appointment with the employer to obtain the following specific approvals from the employer:-.<br>1. Approval of extension of time;<br>2. Approval of additional costs;<br>3. Approval of variation orders;<br>4. Approval from BLM for the utilization of any Contingencies |
| 4.3 | The Health and Safety Plan shall be delivered and approved before the site hand-over/commencement date. |
| 4.9 | The Contractor shall deliver to the Employer's Agent, on a monthly basis, a detailed Inventory of Construction Equipment kept on Site, full particulars given for each day of the Month.<br>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 Employer's Agent, 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. | The documentation required before commencement with Works execution are:<br>◊ Health and Safety Plan (Refer to Clause 4.3) |

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| Clause | Data |
|---|---|
| | ◊ 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).<br>◊ 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).<br>◊ Initial programme (Refer to Clause 5.6).<br>◊ Security (Refer to Clause 6.2).<br>◊ Insurance (Refer to Clause 8.6). |
| 5.3.2 | The time to submit the documentation required before commencement with Works execution is **14 Days.** |
| 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. |
| 5.6.1 & 5.6.2 | The Contractor shall deliver to the Employer's Agent, within 14 days calculated from the Commencement Date, a realistic programme in terms of Clause 5.6.1 and supporting documents in terms of Clause 5.6.2 |
| 5.8.1 | The special non-working days are all designated public holidays (including all foreseeable statutory declared election days), Saturdays and Sundays. |
| 5.13.1 | The penalty for delay is **R 5000.00** per calender day or part thereof. |
| 5.14.5.2 | The Defects Liability Period is twelve (12) calendar months after the date of the final certificate of completion. |
| 5.16.3 | The latent defect liability period is 10 years after the date of the final approval certificate |
| 6.2.1. | The Guarantee is to contain the **same wording** as indicated in the document included as C1.3 under returnable documents.<br>The amount of the Guarantee is to be **10%** surety of the Contract Price. |
| 6.5.1.2.3 | Day work allowances as tendered in Section 1800 of the Bill of Quantities: Materials at cost plus 15%. |
| 6.10.1.5 | The percentage limit on materials not yet built into the Permanent Works is 80%. |
| 6.10.3 | The percentage retention is 10% of the certified work done (including VAT). |
| 8.6.1. | The amount to be included in the sum insured to cover the value of: |
| 8.6.1.1.2 | a) Materials supplied by the employer for incorporation into the works is R 0.00 |
| 8.6.1.1.3 | b) Professional fees not included in the Contract Price is R0.00 |
| 8.6.1.2 | The following additional and varied insurances are required:<br>CAR & SASRIA. |
| 8.6.1.3 | The Limit of the liability insurance required should not be less than the contract amount. |
| 10.5.1 | Dispute resolution shall be by standing adjudication, use GCC 2015, Appendix 5. |

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| Clause | Data |
|---|---|
| Special Clause in terms of RDP | Requirements in terms of government's reconstruction and development programme.<br><br>Target values: In this project the minimum target values shall be as follows:<br><br>• Labour Maximisation (Wages) Minimum of 50 Labour<br><br>It is a requirement that the Contractor plan for achieving these targets and that a planned programme for achieving each of the targets is submitted at the start of the project together with the clause 5 programme of construction.<br><br>**Penalties:**<br><br>The penalties for not reaching the required labour and SMME target values will be calculated at **300%** of the difference between the set target values and the actual target values achieved by the contractor at completion of the works. Penalties will be applied monthly, when the actual figures are less than **75%** of the planned monthly figures. No bonuses for achieving the set target values are applicable. |
| EPWP | 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<br><br>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<br><br>The current Ministerial Determination (also downloadable at www.epwp.gov.za), 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. |
| Additional special Clauses | a) the Municipality reserve the right not to appoint, or partially accept bidder price offer or not appoint entirely<br><br>b) the bidder bind him/herself to adjust tendered rate in line with competitive market rates in the event it is discovered and proven that his/her tendered rates are exorbitant.<br><br>c) all rates only items will be subject to adjustment if discovered and proven that such rates are exorbitant |

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**SECTION 2: DATA PROVIDED BY THE CONTRACTOR**

| Clause | CONTRACT SPECIFIC DATA BY THE CONTRACTOR |
|---|---|
| 1.1.1.9 | The Name of the Contractor is:<br><br>.....<br><br>..... |
| 1.2.1.2 | The address of the Contractor is:<br><br>Physical address:<br><br>.....<br><br>.....<br><br>..... |
| 1.2.1.2 | Postal address:<br><br>.....<br><br>.....<br><br>.....<br><br>e-mail address: ……<br><br>Contact numbers:<br><br>Corporate: .....<br><br>Direct: .....<br><br>Mobile: .....<br><br>Fax: ..... |
| 1.1.1.14 | Time for achieving Practical completion is……Months **(All Inclusive)** |

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## C1.5.3 VARIATIONS TO THE GENERAL CONDITIONS OF CONTRACT

The following amendments of the General Conditions of Contract 2015 apply to this contract. The headings in these Special Conditions of Contract shall not be deemed to be part thereof nor be taken into consideration in the interpretation or construction thereof or of the Contract.

## 4. CONTRACTOR'S GENERAL OBLIGATIONS

### 4.1 EXTENT OF OBLIGATIONS AND LIABILITY

Change the number of clauses 4.1.1 to 4.1.2 to read 4.1.2 and 4.1.3.

Add the following:

**"4.1.1 Contractor deemed to have inspected the Site**

The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself before submitting his tender (as far as practicable) as to

(a) the form and nature of the Site and its surroundings, including subsurface conditions,

(b) the hydrological and climatic conditions.

(c) the extent and nature of work and materials necessary for the execution and completion of the Works,

(d) the means of access to the Site and the Accommodation he may require

and, in general, shall be deemed to have obtained all information (as far as is practicable) as to risks, contingencies and all other circumstances which may influence or affect his tender.

No subsequent claims by the Contractor arising from his lack of knowledge of perceptible conditions on the site or its surroundings or of information available in connection therewith shall be entertained."

**4.1.2 Extent of Contractor' obligations**

Add the following to this sub-clause:

The Contractor shall, save in so far as it is legally or physically impossible,

(a) design (to the extent provided in the Contract), execute and complete the Works and remedy any defects therein in accordance with the provisions of the Contract, and

(b) provide all superintendence, labour, materials, Construction Equipment, Temporary Works, including the design thereof, all requisite transport and all other things, whether of a temporary or permanent nature, required in and for such design, execution and completion of the Works and for the remedying of any defects, so far as the necessity for providing the same is specified in or reasonably to be inferred from the Contract.

(c) After award of the Contract, the Contractor shall be obligated to ensure that at least the Construction Equipment stated on the prescribed form in the Tender Documents, or Construction Equipment equivalent thereto, are on the site when required."

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## 4.3 LEGAL PROVISIONS

Add the following sub-sub clauses:

### 4.3.1.1 Mine Health and Safety Act, number 29 of 1996

The Employer shall obtain the Mining Authorisation for all sites where mining activities, as defined in the Mine Health and Safety Act, number 29 of 1996 as amended, are to be conducted.

### 4.3.1.2 Mineral Resources Petroleum Development Act, number 28 of 2002

The Contractor shall assume responsibility for the Environmental Management Programme (EMPR) in respect of the sites and shall ensure that the sites are rehabilitated at the conclusion of the contract."

## 4.4. SUBCONTRACTING

Add the following subclasses:

### "4.4.7 Continuing obligation extending beyond date of completion of the work

In the event of a Selected Subcontractor having undertaken to the Contractor, in respect of work executed or goods or materials supplied by such Selected Subcontractor, any continuing obligation extending beyond the date of completion of the work or the end of the Defects Liability Period, and Latent Defect Liability Period as the case may be, the Contractor shall at any time after such date cede to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof, whereupon the Employer shall have no further claim against the Contractor in respect of the said continuing obligation.

### 4.4.8 Convert the subcontract

If the contract shall have been cancelled in terms of clause 9.2, the Employer shall have the right, by written notice given to any Selected Subcontractor not later than 28 days after the said cancellation, to convert the subcontract concerned to a direct contract between the Employer and the Subcontractor.

Provided that:

(a) the terms of the said direct contract shall mutatis mutandis be those of the subcontract concerned, and

(b) the Employer shall have the said right, notwithstanding any breach of the subcontract by the Contractor, subject to his forthwith paying to the Subcontractor all amounts then owing to the Subcontractor by the Contractor and perform any obligation which the Contractor has failed to perform."

## 4.9 CONSTRUCTION EQUIPMENT

Add the following: sub clauses:

### "4.9.2 Preclude seizure of construction equipment

In order to preclude seizure by the owner of any constructional plant being held by the Contractor on a hire or hire-purchase agreement for the purposes of the contract, the Employer

shall be entitled to pay any such owner the amount of any outstanding instalment or other sum owing under any hire or hire-purchase agreement and in the event of his doing so, any amount thus paid by him shall be a debt payable to the Employer by the Contractor and may be deducted by the Employer from any moneys owing or that may become owing to the Contractor in terms of the contract, or be recovered at law from the Contractor by the Employer.

**4.9.3 Constructional plant brought to the site by the subcontractor**

When entering into any subcontract agreement for the execution of any part of the works, the Contractor shall incorporate in such subcontract agreement, by reference or otherwise, the provisions of this clause in respect of construction equipment brought to the site by the subcontractor."

## 5. TIME AND RELATED MATTERS

### 5.4 ACCESS TO THE SITE

Add the following sub clause:

**5.4.4** "If the site is insufficient for the needs and requirements of the work, the Contractor shall arrange with the owners or tenants for the additional land required and pay all rent and costs in connection therewith. The Contractor shall be responsible for all damage to such land and property, and he shall indemnify the Employer and hold him harmless in respect of all claims, demands proceedings, damages, costs, including attorneys and client costs, charges and expenses arising in respect thereof."

### 5.14 COMPLETION

Delete the following:

"5.14.5.3 The retention shall be reduced to half in terms of Clause 6.10.5"

### 5.16 APPROVAL

**5.16.1** Final Approval Certificate

Delete the last sentence of this clause and replace with:

The payment of the retention money or the release of the retention money guarantee shall only be permitted after the Employer's Agent has issued the Final Approval Certificate.

## 6. PAYMENT AND RELATED MATTERS

### 6.6 PROVISIONAL SUMS AND PRIME COST SUMS

6.6.1.2.1 In the first line after the word "sums" insert "excluding VAT"

6.6.1.2.2 In the fourth line after the word "amount" insert "excluding VAT"

**6.10.5 Payment of retention money**

Delete the first four lines where reference is made to the first half of retention. The paragraph should read:"

"Retention money shall become due when the Employer's Agent shall have certified payment thereof within 14 days after the expiration of the Defects Liability Period, extended if necessary in terms of Clauses 5.14.4 or 7.8.1. No retention, or part thereof, will hence be payable upon the issue of a Certificate of Completion as indicated in Clause 5.14.5.3.

**6.11 VARIATIONS EXCEEDING 15 PER CENT**

**6.11.1** Second paragraph:

Change "15%" to "30%".

Add the following sub clause:

**"6.11.2 Variations exceeding 30% per cent**

Where the decrease or increase in the quantity of work has not resulted from a written variation order (or an additional agreement) in terms of clause 5.11 but from the fact that the quantities are less or more than those given in the bill of quantities, the tendered rates or sums shall still apply, except in the case of a sub-item (or an item not subdivided into sub-items) in the bill of quantities, which covers work the value of which during the tender stage exceeds 7,5% of the value of the tender sum, and where the quantity of such sub-item or item, upon completion of the contract, deviates by more than 30% from the quantity given in the bill of quantities so that the scale of activities or the method of construction consequently changes to such an extent that the tendered rate or sum no longer applies. In such case the Employer's Agent, should he deem it to be in the interest of the Employer or should the Contractor enter a claim, shall, considering the extent by which the deviation in respect of the quantity of the sub-item or item concerned exceeds 30%, determine a sum which will be equitable in the circumstances, and shall certify that such sum shall be deducted from or added to the sums owing to the Contractor."

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# PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS .....C.34

C2.2 BILL OF QUANTITIES .....C.37

**CONTRACT NO.: BM1/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C2.1 PRICING INSTRUCTIONS

1 For the purposes of this bill of quantities, the following words shall have the meanings hereby assigned to them:

| | |
|---|---|
| Unit: | The unit of measurement for each item of work as defined in the standard specifications or the project specifications. |
| Quantity: | The number of units of work for each item. |
| Rate: | The payment per unit of work for which the tenderer Bidders to do the work. |
| Amount: | The product of the quantity and the rate tendered for an item. |
| Lump Sum: | An amount tendered for an item, the extent of which is described in the bill of quantities, the specifications or elsewhere, but of which the quantity of work is not measured in units. |

2 This bill of quantities forms part of the contract documents and must be read in conjunction with all the other documents comprising the contract documents.

3 The quantities set out in the bill of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the bill of quantities, will be used to determine payments to the contractor.
The validity of the contract shall in no way be affected by differences between the quantities in the bill of quantities and the quantities finally certified for payment. Work is valued at the rates or lump sums tendered, subject only to the provisions of sub-clause 1209 (a) of the standard specifications.

4 Rates and lump sums shall include full compensation for overheads, profits, incidentals, tax (other than VAT), etc, and for the completed items of work as specified, all in accordance with sub-clause 1209 (b) of the standard specifications. Full compensation for completing and maintaining, during the defects liability period, all the work shown on the drawings and specified in the standard specifications and project specifications and for all the risks, obligations and responsibilities specified in the general conditions of contract, special conditions of contract, standard specifications and project specifications shall be considered as provided for collectively in the items of payment given in the bill of quantities, except in so far as the quantities given in the bill of quantities are only approximate.

5 The tenderer shall fill in a rate or a lump sum for each item where provision is made for it even where no quantities are given. Items against which no rate or lump sum has been entered in the tender will not be paid for when the work is executed, as payment for such work will be regarded as being covered by other rates or lump sums in the bill of quantities.
The tenderer shall fill in a rate against all items where the words “rate only” appear in the amount column. Although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item actually be required. Bidders should note the provisions of paragraph 12 of this preamble.
If the tender should group a number of items together and tender one lump sum for each group of items, this single tendered lump sum shall apply to that group of items and not to each individual item, or should he indicate that full compensation for any item has been included in the rate for another item, the rate for the item included in another item shall be deemed to be nil.

The tendered lump sums and rates shall be valid irrespective of any change in the quantities during the execution of the contract.

6 The works executed are measured for payment in accordance with the methods described in the contract documents under the various payment items, notwithstanding any custom to the

contrary. Attention is directed to the provisions of clause 1220 of the standard specifications regarding the measurements of quantities for payment. Except where specified otherwise than in clause 1220, the nett measurement or mass of the finished work in place shall be taken for payment, and any volume or mass of work in excess of that prescribed, shall be excluded.

7 The amount of work or the quantities of material stated in the bill of quantities shall not be considered as restricting or extending the amount of work to be done or quantity of material to be supplied by the contractor.

8 The statement of quantities of material or the amount of work in the bill of quantities shall not be regarded as authorisation for the contractor to order material or to execute work. The contractor shall obtain the Employer's Agent's detailed instructions for all work before ordering any materials or executing work or making arrangements in this regard.

9 The short descriptions of the payment items in the bill of quantities are only given to identify the items and to provide specific details. Reference shall, inter alia, be made to the drawings, standard specifications, project specifications, general conditions of contract and special conditions of contract for more detailed information regarding the extent of work entailed under each item.

10 The provisions of clause 6.6 of the general conditions of contract shall apply to provisional sums and prime cost sums.

11 Subject to the conditions stated in paragraph 12 below, the rates and lump sums filled in by the tenderer in the bill of quantities shall be final and binding with regard to submitting the tender, and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Should there be any discrepancies between the tender sum and the correctly extended and totalled bill of quantities, the rates will be regarded as being correct, and the employer shall have the right to make adjustments to the tender sum to reconcile the tender sum with the total of the bill of quantities. In such an event the contractor will be consulted but, failing agreement between the parties, the decision of the employer shall be final and binding. Adjustment of the tender sum will take place prior to the signing of the contract. In their own interest tenderers must make doubly sure of the correctness of their tendered rates, the extensions and the tender sum.

12 A tender may be rejected if the unit rates or lump sums for some of the items in the bill of quantities are, in the opinion of the employer, unreasonable or out of proportion, and if the tenderer fails, within a period of seven (7) days of having been notified in writing by the employer to adjust the unit rates or lump sums for such items, to make such adjustments.

13 The units of measurement indicated in the bill of quantities are metric units

The following abbreviations are used in the bill of quantities:

| | | |
|---|---|---|
| mm | = | millimeter |
| m | = | meter |
| km | = | kilometer |
| km-pass | = | kilometer-pass |
| $m^2$ | = | square meter |
| $m^2$-pass | = | square meter pass |
| ha | = | hectare |
| $m^3$ | = | cubic meter |
| $m^3$km | = | cubic meter kilometer |

| | | |
|---|---|---|
| l | = | liter |
| kl | = | kilolitre |
| kg | = | kilogram |
| t | = | ton (1000 kg) |
| No | = | number |
| mn | = | meganewton |
| mn-m | = | meganewton-meter |
| % | = | per cent |
| kW | = | kilowatt |
| Kn | = | kilonewton |
| PC sum= | prime cost sum | |
| Prov sum | = | provisional sum |
| L sum | = | Lump sum |

14 All rates and sums of money quoted in the bill of quantities shall be in rands and whole cents. Fractions of a cent shall be discarded.

15 Labour intensive items are highlighted in the bills of quantities for the payment items relating to labour intensive works.

15.1 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters LI in a separate column or as a prefix or suffix against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of works, is a deviation from the contract. The items marked with the letters 'LI' are not necessarily an exhaustive list of all the activities, which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour-intensive specification in the Scope of Works.

15.2 Where minimum labour intensity is specified by the design the contractor is expected to use their initiative to identify additional activities that can be done labour-intensively in order to comply with the set minimum labour intensity target.

15.3 Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the scope of works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work, which was to be done labour-intensively will not be condoned, and any works so constructed will not be certified for payment.

16 All cost for formal training to the targeted workforce (amongst others: allowances, wages, administration, transport, etc) shall be deemed to be included in the rates for Labour Intensive items.

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**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C2.2 BILL OF QUANTITIES

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **1200** | | | **GENERAL REQUIREMENTS AND PROVISIONS** | | | | |
| B12.01 | | | Excavation<br>Excavating material within the following depth ranges below ground level for the exposing of/or searching for services: | | | | |
| (a) | | | 0m to 2m | | | | |
| (i) | LI | | soft material | m³ | 351.00 | | |
| (ii) | LI | | hard material | m³ | 200.00 | | |
| (b) | | | Extra over item B12.01(a) for excavation by means of hand tools such as picks, crowbars and pneumatic tools or mechanical breakers in close vicinity of services where no machine excavation is permitted: | | | | |
| (i) | LI | | soft material | m³ | 70.00 | | |
| (ii) | | | hard material | m³ | 35.00 | | |
| B12.02 | | | Backfilling | | | | |
| (a) | LI | | Using the excavated material | m³ | 75.00 | | |
| (b) | LI | | Using imported selected material | m³ | 65.00 | | |
| B12.03(a) | | | Allow a provisional sum for existing services a to be relocated and/or protected as ordered by the engineer | Prov sum | 1.00 | 1 000 000.00 | R 1 000 000.00 |
| (b) | | | Handling costs and profit in respect of sub-item B12.03(a) above | % | 1 000 000.00 | | |
| B12.04 | | | Provision for a Community Liaison Officer | | | | |
| (a) | | | Provisional sum for the payment of the Community Liaison Officer | Prov sum | 1.00 | 70 000.00 | R 70 000.00 |
| (b) | | | Provisional sum for the payment PSC Members (5 off) | Prov sum | 1.00 | 24 500.00 | R 24 500.00 |
| (c) | | | Handling costs and profit in respect of sub-item B12.04 (a-b) | % | 94 500.00 | | |
| | | | | | | **SECTION 1200 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** | |
| **1300** | | | **CONTRACTORS ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS** | | | | | |
| B13.01 | | | The contractors general obligations | | | | | |
| (a) | | | Fixed obligations | L.Sum | 1.00 | | | |
| (b) | | | Value related obligations | L.Sum | 1.00 | | | |
| (c) | | | Time related obligations | Month | 12.00 | | | |
| B.13.02 | | | Occupational Health & Safety | | | | | |
| (a) | | | Preparation of Health & Safety Plan complying with Covid 19 Regulation | L.Sum | 1.00 | | | |
| (b) | | | Compilation of a Risk Assessment prior to commencement of Construction. | L.Sum | 1.00 | | | |
| (c) | | | Health & safety induction training of employees | L.Sum | 1.00 | | | |
| (d) | | | Compilation and keeping up with date the Health & Safety file which shall include all documentation required in terms of the Act. Implementation of the health and Safety plan over the entire construction period | Month | 12.00 | | | |
| B.13.03 | | LI | Supply and erect two contract nameboard | L. Sum | 1.00 | | | |
| | | | **PROVISSIONAL SUM STATED BY THE ENGINEERS** | | | | | |
| | | | i) Survey eqipments ,Traffic Lights and safety Jackets | Prov sum | 1.00 | 20 000.00 | R | 20 000.00 |
| | | | ii) Provissional sum allowed for Closing Ceremony | Prov sum | 1.00 | 40 000.00 | R | 40 000.00 |
| | | | iii) Provissional sum allowed for SHE Rep | Prov sum | 1.00 | 6 000.00 | R | 6 000.00 |
| | | | iv) Provissional sum allowed for Survey Services | Prov sum | 1.00 | 95 000.00 | R | 95 000.00 |
| | | | v) Provissional sum allowed for Geotechnical Investigation | Prov sum | 1.00 | 85 000.00 | R | 85 000.00 |
| | | | vi) Provissional sum allowed for Enviromental Services | Prov sum | 1.00 | 194 000.00 | R | 194 000.00 |
| | | | vii) Provissional sum allowed for Student in Training | Prov sum | 1.00 | 84 000.00 | R | 84 000.00 |
| | | | viii) Provissional sum allowed for RAL Application for access Connection | Prov sum | 1.00 | 6 000.00 | R | 6 000.00 |
| | | | ix) Provissional sum allowed for Health and Safety Agent | Prov sum | 1.00 | 240 000.00 | R | 240 000.00 |
| | | | x) Handling costs and profit in respect of sub-item (i-ix) above | % | 770 000.00 | | | |
| | | | **Provision for accredited training** | | | | | |
| | | | i) Generic skills | P Sum | 1.00 | 75 000.00 | R | 75 000.00 |
| | | | ii) Entrepreneurial skills | P Sum | 1.00 | 75 000.00 | R | 75 000.00 |
| | | | iii) Handling costs and profit in respect of sub-item (i) and (ii) above | % | 150 000.00 | | | |
| | | | iv) Training venue (only if required) | L. Sum | 1.00 | | | |
| | | | **NOTE: The combined total tendered for items B13.01(a), (b) and (c) shall not exceed 15% of the Tender sum excluding VAT.** | | | | | |
| | | | | | | **SECTION 1300 TOTAL CARRIED TO SUMMARY** | | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** | |
| **1400** | | | **HOUSING, OFFICES AND LABORATORIES FOR ENGINEER'S SITE PERSONNEL** | | | | | |
| 14.01 | | | Office and accommodation: | | | | | |
| (a) | | | Offices (interior floor space only and as per drawing) | m² | 30.00 | | | |
| (b) | | | Ablution units | m² | 10.00 | | | |
| 14.02 | | | Office furniture: | | | | | |
| (a) | | | Chairs | No. | 10.00 | | | |
| (c) | | | Desks, complete with drawers and locks | No. | 1.00 | | | |
| (e) | | | Conference tables (place for 10 chairs) | No. | 1.00 | | | |
| B14.02 (g) | | | Survey Equipment | L. Sum | 1.00 | | | Rate only |
| B14.02 (h) | | | Pinboard (size 1.0 x 1.5 m) | No. | 1.00 | | | Rate only |
| 14.03 | | | Office and laboratory fittings, installations and equipment: | | | | | |
| (a) | | | Items measured by number: | | | | | |
| | | (i) | 220/250 volt power points | No. | 1.00 | | | |
| | | (iii) | Double 80 watt fluorescent light fittings complete with ballast and tubes | No. | 1.00 | | | |
| | | (iii) | Wash-hand basins complete with taps and drains | No. | 1.00 | | | |
| | | (vi) | Fire extinguishers, 9,0 kg, all purpose dry powder type, complete, mounted on wall with brackets | No. | 1.00 | | | |
| | | (vii) | General purpose steel cupboards with shelves | No. | 1.00 | | | |
| | | (viii) | Steel filing cabinets with drawers | No. | 1.00 | | | |
| | | (x) | Refrigerators (200 l min) | No. | 1.00 | | | |
| | | (xii) | Bookcases | No. | 0.00 | | | |
| | | (xiii) | Voltage stabilizers | No. | 1.00 | | | |
| | | (xviii) | Air Conditioning units with 2,2 kW minimum capasity, mounted and with own power connection | No. | 1.00 | | | |
| (b) | | | Prime cost items and items paid for in a lump sum | | | | | |
| | | (i) | The provision of a direct independent telephone line for the engineer, including the cost of calls in connection with contract administration and telephone rental | Prov sum | 1.00 | 80 000.0 | R | 80 000.00 |
| | | (ii) | Handling costs and profit in respect of subsubitem 14.03(b)(iii)(1)above | % | 80 000.00 | | | |
| | | (iii) | The provision of a fax apparatus as specified | Prov sum | 1.00 | 45 000.00 | R | 45 000.00 |
| | | (vi) | Handling costs and profit in respect of subsubitem 14.03(b)(iii))above | % | 45 000.00 | | | |
| | | (vii) | 1) Provision of cellular telephones, Computers, Printing | Prov sum | 1.00 | 65 000.00 | R | 65 000.00 |
| | | | 2) Provisional sum for the costs of cellular calls and other charges | Prov sum | 1.00 | 36 000.00 | R | 36 000.00 |
| | | | 3) Handling cost and profit in respect of sub-item B14.03(ix) 1 & 2 | % | 101 000.00 | | | |
| | | | | | | **TOTAL CARRIED TO NEXT PAGE** | | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| | | | | | **Brought Forward** | | |
| ( c ) | | | Items measured by area | | | | |
| | | (i) | Vertical blinds | m² | 0.00 | | Rate Only |
| | | (ii) | Notice boards as specified | m² | 0.00 | | Rate Only |
| 14.04 | | | Car ports | | | | |
| (a) | | | Car port as specified at offices and laboratory buildings | No. | 1.00 | | |
| 14.07 | | | Rented Hotel and other Accomodation | | | | |
| (a) | | | Provissional sum for providing rented housing,hotel or other accomodation as described in sub clause 1403(c)(ii) | PC Sum | 1.00 | 150 000.00 | R 150 000.00 |
| (b) | | | Handling cost and profit in respect of sub-item B14.07(a) | % | 150 000.00 | | |
| 14.10 | | | Provision of photostat facilities | Month | 12.00 | | |
| B14.11 | | | Provision and erection of security fencing (including gate) | m | 100.00 | | |
| 14/B15.03(n) | | | Provision of high visibility safety jackets, safety hats and rotating lights for mobile use | No. | 4.00 | | Rate Only |
| | | | | | | **SECTION 1400 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** | |
| **1500** | | | **ACCOMMODATION OF TRAFFIC** | | | | | |
| B15.01 | LI | | Accommodating traffic and maintaining temporary deviations | km | 4.44 | | | |
| B15.03 | | | Temporary traffic-control facilities | | | | | |
| (a) | LI | | Flagmen | man-day | 504.00 | | | |
| (b) | | | Portable STOP and GO-RY signs | No. | 8.00 | | | |
| (e) | | | Road signs, R- and TR-series, 1 200mm in diameter | No. | 10.00 | | | |
| (f) | | | Road signs, TW-series, 1 500mm sides | No. | 10.00 | | | |
| (g) | | | Road signs, STW-, DTG-, TGS- and TG-series (excluding delineators and barricades) | m² | 10.00 | | | |
| (h) | | | Delineators (800mm x 200mm): | | | | | |
| | LI | (i) | Single | No. | 20.00 | | | |
| | | (ii) | Mounted back to back | No. | 8.00 | | | |
| (i) | LI | | Movable barricades/road sign combination | No. | 6.00 | | | |
| (j) | LI | | Traffic cones (750mm high) | No. | 25.00 | | | |
| B15.15 | | | Prime cost sum for: | | | | | |
| (a) | | | Compensation to landowners for land taken up by Road | P Sum | 1.00 | 500 000.00 | R | 500 000.00 |
| (b) | | | Handling cost and profit in respect of sub-item B15.15(a) above | % | 500 000.00 | | | |
| | | | | | | **SECTION 1500 TOTAL CARRIED TO SUMMARY** | | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **1700** | | | **CLEARING AND GRUBBING** | | | | |
| B17.01 | | | Clearing and grubbing of: | | | | |
| (a) | | | Normal areas: | | | | |
| | | (i) | Within the road reserve | ha | 2.00 | | |
| | | (ii) | In borrow pits | ha | 8.00 | | |
| 17.02 | | | Removal and grubbing of large trees and tree stumps: | | | | |
| (a) | | | Girth exceeding 1m up to and including 3m | No. | 20.00 | | |
| (b) | | | Girth exceeding 3m | No. | 20.00 | | |
| | | | | | | **SECTION 1700 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **B1800** | | | **DAY WORK SCHEDULE** | | | | |
| B18.01 | | | Labourers: | | | | |
| | | (i) | Unskilled | hr | 20.00 | | Rate Only |
| | | (ii) | Semi-skilled | hr | 20.00 | | Rate Only |
| | | (iii) | Skilled | hr | 20.00 | | Rate Only |
| B18.02 | | | Foreman | hr | 20.00 | | Rate Only |
| B18.03 | | | Tipper Trucks: | | | | |
| | | (i) | 3 - 5 ton | hr | 10.00 | | Rate Only |
| | | (ii) | 5,1 - 10 ton | hr | 10.00 | | Rate Only |
| B18.04 | | | Loader (0.5m³) | hr | 10.00 | | Rate Only |
| B18.05 | | | Loader (1-2.5m³) | hr | 10.00 | | Rate Only |
| B18.05 | | | Grader (CAT 140G or similar) | hr | 10.00 | | Rate Only |
| B18.06 | | | LDV | hr | 10.00 | | Rate Only |
| B18.07 | | | Compaction Rollers: | | | | |
| | | (i) | Vibrator roller | hr | 10.00 | | Rate Only |
| | | (ii) | Tamping roller | hr | 10.00 | | Rate Only |
| | | (iii) | Grid roller | hr | 10.00 | | Rate Only |
| B18.08 | | | Hand Controlled Compactors | | | | |
| | | (i) | Pedestrian roller (Bomag BW90) | hr | 10.00 | | Rate Only |
| | | (ii) | Vibratory plate | hr | 10.00 | | Rate Only |
| | | (iii) | Rammers | hr | 10.00 | | Rate Only |
| B18.09 | | | Water truck (min 10000 l) | hr | 10.00 | | Rate Only |
| B18.10 | | | Dozer (D7 or similar) | hr | 10.00 | | Rate Only |
| | | | | | | **SECTION B1800 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **2100** | | | **DRAINS** | | | | |
| 21.01 | | | Excavation for open drains: | | | | |
| (a) | | | Excavating soft material situated within the following depth ranges below the surface level: | | | | |
| | LI | (i) | 0 m up to 1,5 m | m³ | 1 000.00 | | |
| | | (ii) | Exceeding 1,5 m and up to 3,0 m | m³ | 720.00 | | |
| | | (iii) | Exceeding 3,0 m | m³ | | | Rate Only |
| (b) | | | Extra over subitem 21.01(a) for excavation | | | | |
| | LI | | in hard material, irrespective of depth | m³ | 172.00 | | |
| 21.03 | | | Excavation for subsoil drainage systems: | | | | |
| (a) | | | Excavating soft material situated within the following depth ranges below the surface level | | | | |
| | | (i) | 0 m up to 1,5 m | m³ | 180.00 | | |
| | | (ii) | Exceeding 1,5 m and up to 3,0m | m³ | 0.00 | | Rate Only |
| (b) | | | Extra over subitem 21.03(a) for excavation in hard material, irrespective | m³ | 36.00 | | |
| 21.04 | | | Impermeable backfilling to subsoil drainage systems | m³ | 180.00 | | |
| 21.05 | | | Banks and dykes | m³ | 0.00 | | Rate Only |
| 21.06 | | | Natural permeable material in subsoil drainage systems (crushed stone) | | | | |
| (b) | | | Crushed stone obtained from commercial sources | | | | |
| | | (i) | Fine-grade stone | m³ | 72.00 | | |
| | | (ii) | Coarse-grade stone | m³ | 72.00 | | Rate Only |
| 21.07 | | | Natural permeable material in subsoil drainage systems (sand) obtained from commercial sources | | | | |
| (a) | | | Sand obtained from approved sources on the site | m³ | 72.00 | | Rate Only |
| (b) | | | Sand from commercial sources | m³ | 72.00 | | |
| 21.11 | | | Composite in-plane drainage systems | | | | |
| | | | (a) Supply and install complete subsurface drain Type 2 , (Stone, Sand, Synthitic filter fibre and 100mm perforated uPVC pipe included). | m | 300.00 | | |
| 21.12 | | | Concrete outlet structures for subsoil drainage | No. | 2.00 | | |
| 21.13 | | | Concrete caps for subsoil drain pipes | No. | 2.00 | | |
| 21.15 | | | Overhaul for material hauled in excess of 1,0km free-haul (normal overhaul) | m³-km | 0.00 | | Rate Only |
| 21.16 | | | Backfilling existing eroded side drains | m³ | 0.00 | | Rate Only |
| 21.17 | | | Test flushing of pipe subsoil drains | no | 2.00 | | |
| B21.20 | | | Galvanised wire mesh 250 x 250mm, at the outlets of subsoil drainage systems. Mesh 10mm x 2,5mm | no | 0.00 | | Rate Only |
| B21.21 | | | Subsoil drainage markers | no | 7.00 | | |
| | | | | | | **SECTION 2100 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **2200** | | | **PREFABRICATED CULVERTS** | | | | |
| 22.01 | | | Excavation | | | | |
| | | | Storm water culverts : | | | | |
| (a) | | | Excavating soft material situated within the following depth ranges below the surface level | | | | |
| | | (i) | 0 m up to 1,5 m | $m^3$ | 218.00 | | |
| | | (ii) | 1,5 m up to 3,0 m | $m^3$ | 21.80 | | |
| (b) | | | Extra over subitem 22.01 (a) for excavation in hard material, irrespective of depth | $m^3$ | 47.96 | | |
| B22.02 | | | Backfilling of culverts | | | | |
| (a) | | | Using the excavated material | $m^3$ | 4.00 | | |
| (b) | | | Using imported selected material | $m^3$ | 6.00 | | |
| (c) | | | Extra over subitems 22.02 (a) and (b) for soil-cement backfilling (100 kg cement per $m^3$) | $m^3$ | 4.00 | | |
| 22.03 | | | Concrete pipe culverts | | | | |
| (c) | | | On Class C bedding | | | | |
| | | (i) | 450 diameter class 100D | m | 16.00 | | Rate Only |
| | | (ii) | 600 diameter class 100D | m | 16.00 | | Rate Only |
| | | (iii) | 900 diameter class 100D | m | 12.00 | | Rate Only |
| 22.05 | | | Portal and rectangular culverts | | | | |
| (b) | | | Without prefabricated floor slabs | | | | |
| | | (i) | 600mm x 600mm Type RP | m | 48.24 | | Rate only |
| | | (ii) | 900mm x 600mm Type RP | m | 33.60 | | Rate only |
| | | (iii) | 1200mm x 600mm Type RP | m | 2.44 | | Rate only |
| | | (iv) | 3600mm x 600mm Type RP | m | 77.60 | | |
| 22.06 | | | Extra over items 22.03 and 22.05 for constructing inclined culverts | | | | |
| (a) | | | Concrete pipe culverts | m | 2.80 | | Rate Only |
| 22.07 | | | Cast in-situ concrete and formworks | | | | |
| (a) | | | In class A bedding, screeds and the encasing for pipes, including formwork (Class 20/38) | $m^3$ | 44.63 | | |
| (c) | | | In inlet and outlet structures, catch pits, manholes thrust and anchor blocks, excluding formwork but including class U2 surface finish (Class 25/19) | $m^3$ | 6.30 | | |
| (d) | | | Formwork of concrete under subitem 22.07(c) above | | | | |
| (i) | | | Vertical formwork for Class F1 surface finish | $m^2$ | 26.00 | | |
| (ii) | | | Vertical formwork for Class F2 surface finish | $m^2$ | 39.00 | | |
| (iii) | | | Horizontal formwork for F2 surface finish | $m^2$ | 15.00 | | Rate only |
| 22.10 | | | Steel reinforcement | | | | |
| (a) | | | Mild steel bars | ton | 0.17 | | |
| (b) | | | High- tensile steel bars | ton | 2.45 | | |
| (c) | | | Welded steel fabric ref. 395 mesh | kg | 537.26 | | |
| 22.12 | | | Removing existing concrete | | | | |
| | | | (a) Plain concrete | $m^3$ | 10.00 | | |
| | | | (b) Reinforced concrete | $m^3$ | 15.00 | | |
| 22.13 | | | Remove and re-laying existing pipes | | | | |
| | | | (b) Class B bedding | | | | |
| | | | (1) 600mm dia. | m | 7.00 | | Rate Only |
| | | | (2) 750mm dia. | m | 28.00 | | Rate Only |
| | | | | | | **TOTAL CARRIED TO NEXT PAGE** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| | | | | | **TOTAL BROUGHT FORWARD** | | **R -** |
| 22.25 | | | Overhaul on excavated material carted to spoil, backfill material (but excluding Portland Cement in the case of soil cement), existing structures removed to spoil, and removing and relaying, and removing and stacking existing pipes, for haul in excess of 1 kilometre | $m^3$-km | 218.00 | | |
| 22.29 | | | Tie bars for joining in situ concrete invert slabs to inlet and outlet structures, as indicated on the drawings (Type, diameter and length indicated) | no | 25.00 | | |
| B22.30 | | (a) | Preparation and compaction of in-situ bedding material to 90% of Mod. AASHTO density | $m^3$ | 45.00 | | |
| | | (b) | Extra over sub-item B22.30(a) for compaction to 93% of Mod. AASHTO density | $m^3$ | 25.00 | | |
| B22.31 | | | Dewatering and keeping dry of culvert excavations | no | 10.00 | | |
| B22.32 | | | Cutting of concrete pipes | | | | |
| | | (i) | 450 diameter class 75D | no | | | Rate Only |
| | | (ii) | 600 diameter class 75D | no | | | Rate Only |
| | | (iii) | 600 diameter class 100D | no | 2.00 | | Rate Only |
| | | (iv) | 750 diameter class 100D | no | 2.00 | | Rate Only |
| | | (iv) | 900 diameter class 100D | no | 6.00 | | Rate Only |
| | | | | | **SECTION 2200 TOTAL CARRIED TO SUMMARY** | | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **2300** | | | **CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWN PIPES, AND CONCRETE LININGS FOR OPEN DRAINS** | | | | |
| 23.01 | | | Concrete kerbing | | | | |
| (a) | | | Precast kerbing to SABS 927 | | | | |
| | LI | (i) | Figure 8c kerb | m | 5 520.00 | | |
| 23.07 | | | Trimming of excavations for concrete-lined open drains: | | | | |
| (a) | LI | | In soft material | m² | 828.00 | | |
| (b) | LI | | In hard material | m² | 124.20 | | |
| 23.08 | | | Concrete lining for open drains: | | | | |
| (a) | | | Cast in situ concrete lining Class 25/19: | | | | |
| *(i)* | | | Standard side drain | | | | |
| | LI | (i) | Cast in situ concrete lining class 25/19 for all types of open drains including drifts | m³ | 773.70 | | |
| 23.09 | | | Formwork to cast in situ concrete lining for open drains (class F2 surface finish): | | | | |
| (a) | LI | | To sides with formwork on the external face only | m² | 541.59 | | |
| (b) | LI | | To sides with formwork on both internal and external faces (each face measured) | m² | | | Rate Only |
| (c) | LI | | To ends of slabs | m² | 108.32 | R | - |
| 23.10 | | | Sealed joints in concrete linings of open drains | | | | |
| (a) | LI | | Polysulphide sealants | m | | | Rate Only |
| (b) | LI | | Polyurethane-based sealant | m | | | Rate Only |
| (c) | LI | | Silicone-based sealant | m | | | Rate Only |
| (d) | LI | | Soft Board expansion | m | 97.37 | | |
| (e) | LI | | Polystyrene expansion | m | 146.06 | | |
| 23.12 | | | Steel reinforcement: | | | | |
| (c) | LI | | Welded steel fabric (High-tensile steel ref. 395) | kg | 20 374.00 | | |
| 23.14 | | | Cutting bituminous surfacing and pavement layers for concrete kerbing, | | | | |
| | LI | | channelling and concrete lined drains | m | 0.00 | | Rate Only |
| 23/22.12 | | | Removing existing concrete: | | | | |
| (a) | LI | | Plain concrete | m³ | 50.00 | | |
| 23/16.02 | | | Overhaul on material hauled in excess of 1,0km (ordinary overhaul on spoil material) | m³-km | 1 000.00 | | |
| | | | | | | **SECTION 2300 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **3100** | | | **BORROW MATERIALS** | | | | |
| B31.01 | | | Excess overburden | | | | |
| (a) | | | Depths up to and including 0,5m | m³ | 5 000.00 | | |
| (b) | | | Depths exceeding 0,5m and up to 1,0m | m³ | 1 000.00 | | |
| 31.03 | | | Finishing-off borrow areas in: | | | | |
| (a) | | | Hard material | ha | 2.00 | | |
| (b) | | | Intermediate material | ha | 0.40 | | |
| (c) | | | Soft material | ha | 0.50 | | |
| B31.04 | | | Compensation to landowners: | | | | |
| (a) | | | Prime cost sum for compensation to landowners | P.C. | 1.00 | 50 000.00 | R 50 000.00 |
| (b) | | | Handling costs and profit in respect of sub-item B31.04(a) above | % | 50 000.00 | | |
| 31/55.06 | | | Providing temporary fences and gates: | | | | |
| (a) | LI | (i) | Stock-proof fence (1200mm high with 4 strain) | km | 0.40 | | |
| (d) | | | Temporary gates: | | | | |
| | LI | (i) | Single leaf, 1 200mm high Government pattern farm gate, 4,2m wide | No. | 1.00 | | |
| C33,03 | | | Penalty for failing to rehabilitate the borrow pit that the Contractor is responsible for: | no | | -70 000.00 | Rate only |
| 31/32.06 | | | Stockpiling of material | m³ | 4 735.09 | | |
| | | | | | | **SECTION 3100 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **3300** | | | **MASS EARTHWORKS** | | | | |
| 33.01 | | | Cut and borrow to fill, including free-haul up to 0.5 km | | | | |
| (a) | | | Material in compacted layer thicknesses of 200 mm and less: | | | | |
| | | (I) | Compacted to 90% of modified AASHTO density | m³ | 13 065.36 | | |
| | | (ii) | Compacted to 93% of modified AASHTO density | m³ | 13 065.36 | | Rate only |
| | | (iii) | Eight-roller-pass compaction | m³ | | | Rate only |
| 33.03 | | | Extra over item 33.01 for excavating and breaking down material in - | | | | |
| (a) | | | Intermediate excavation | m³ | 131.00 | | |
| (b) | | | Hard excavation | m³ | 26.20 | | |
| (c) | | | Boulder excavation class A | m³ | 20.00 | | |
| (d) | | | Boulder excavation class B | m³ | 20.00 | | |
| 33.04 | | | Cut to spoil, including free-haul up to 0,5 km Material obtained from - | | | | |
| (a) | | | Soft excavation | m³ | 21 080.98 | | |
| (b) | | | Intermediate excavation | m³ | 105.00 | | |
| (c) | | | Hard excavation | m³ | 105.00 | | |
| (d) | | | Boulder excavation class A | m³ | 5.00 | | |
| (e) | | | Boulder excavation class B | m³ | 5.00 | | Rate only |
| 33.05 | | | Overbreak in hard and boulder class A excavation | $m^2$ | 100.00 | | |
| 33.06 | | | Variations in the number of roller passes (applicable to items 33.01(a)(ii), 33.01(b)(iii) and 33.11 | | | | |
| (a) | | | Vibratory rollers | $m^2$-pass | 250.00 | | |
| (c) | | | Heavy grid rollers | $m^2$-pass | 250.00 | | |
| (d) | | | Tamping rollers | $m^2$-pass | 250.00 | | |
| (e) | | | Impact rollers | $m^2$-pass | 250.00 | | |
| 33.07 | | | Removal of unsuitable material (including free-haul of 0,5 km) | | | | |
| (a) | | | In layer thicknesses of 200 mm and less: | | | | |
| | | (i) | Stable material | m³ | 4 216.20 | | |
| | | (ii) | Unstable material | m³ | 1 306.54 | | |
| 33.09 | | | Material bladed down to windrow | m³ | 1 581.00 | | |
| 33.10 | | | Roadbed preparation and the compaction of material | | | | |
| (a) | | | Compaction to 90% of modified AASHTO density | m³ | 10 540.95 | | |
| (b) | | | Compaction to 93% of modified AASHTO density | m³ | 10 540.95 | | Rate only |
| | | | | | | **TOTAL CARRIED TO NEXT PAGE** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| | | | | | | **Brought Forward** | **R -** |
| 33.11 | | | Three-pass-roller compaction | | | | |
| (a) | | | Vibratory rollers | $m^2$ | | | Rate only |
| (c) | | | Heavy grid rollers | $m^2$ | 44 616.00 | | |
| (f) | | | Pneumatic-tyre roller | $m^2$ | | | Rate only |
| 33.12 | | | In situ treatment of roadbed | | | | |
| (a) | | | In-situ treatment by ripping | $m^3$ | 1 054.10 | | |
| (b) | | | In-situ treatment by blasting | $m^3$ | 1 054.10 | | Rate only |
| 33.13 | | | Finishing-off cut and fill slopes, medians and interchange areas | | | | |
| | | | (a) Cut slopes | $m^2$ | 10 787.10 | | |
| | | | (b) Fill slopes | $m^2$ | 5 845.29 | | |
| 33/1600 | | | OVERHAUL | | | | |
| 33/16.01 | | | Overhaul on material hauled in excess of a free-haul distance of 0,5 km, for haul up to or through 1,0 km ( restricted overhaul) | $m^3$ | 21 080.98 | | |
| 33/16.02 | | | Overhaul on material hauled in excess of 1,0 km ( ordinary overhaul) | $m^3$-km | 70 324.76 | | |
| 33/32.06 | | | Stockpiling of material | $m^3$ | 4 057.20 | | Rate Only |
| | | | | | | **SECTION 3300 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **3400** | | | **PAVEMENT LAYERS OF GRAVEL MATERIAL** | | | | |
| 34.01 | | | Pavement layers constructed from gravel taken from cut or borrow, including free-haul up to 1,0km: | | | | |
| (a) | | | Gravel selected layer (un-stabilized gravel) compacted to: | | | | |
| | | (i) | 93% of modified AASHTO density (150mm thick) | m³ | 13 704.81 | | |
| (c) | | | Gravel Subbase (un-stabilized material) compacted to: | | | | |
| | | (i) | 95% of modified AASHTO density (150mm thick) | m³ | 9 710.00 | | Rate only |
| | | (ii) | 97% of modified AASHTO density (150mm thick) | m³ | | | Rate only |
| (d) | | | Gravel Subbase (chemically stabilized material) compacted to: | | | | |
| | | (i) | 96% of modified AASHTO density (150mm thick) | m³ | 9 710.00 | | |
| (f) | | | Gravel base (chemically stabilized material) compacted to: | | | | |
| | | (i) | 98% of modified AASHTO density (150mm thick) | m³ | 844.00 | | |
| (g) | | | Gravel shoulders compacted to: | | | | |
| | | (i) | 93% of modified AASHTO density (150mm thick) | m³ | 56.70 | | |
| (h) | | | Gravel wearing course compacted to: | | | | |
| | | (i) | 95% of modified AASHTO density (150mm thick) | m³ | 0.00 | | Rate only |
| 34.02 | | | Extra over item 34.01 for excavation of material in: | | | | |
| (a) | | | Intermediate excavation | m³ | 1 021.00 | | |
| (b) | | | Hard excavation | m³ | 851.00 | | |
| 34.07 | | | Extra over item 34.01 for temporarily blading the material to windrow | m³ | 300.00 | | |
| 34/16.01 | | | Overhaul on material hauled in excess of a free-haul distance of 0,5 km, for haul up to or through 1,0 km ( restricted overhaul) | m³ | 14 605.51 | | |
| 34/16.02 | | | Overhaul on material hauled in excess of 1,0km (ordinary overhaul) | m³-km | 29 211.03 | | |
| 34/32.04 | | | Removal of oversize pavement material | m³ | 15.00 | | |
| 34/32.05 | | | Additional normal grid rolling | m³ | 70.00 | | |
| 34/32.06 | | | Stockpiling of material | m³ | 3 651.38 | | Rate Only |
| | | | | | | **SECTION 3400 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **3500** | | | **STABILIZATION** | | | | |
| 35.01 | | | Chemical stabilization extra over un-stabilized compacted layers: | | | | |
| | | (i) | Base layer, 150mm thick | $m^3$ | 844.00 | | |
| | | (ii) | Subbase layer, 150mm thick | $m^3$ | 9 710.00 | | |
| 35.02 | | | Chemical stabilizing agent: | | | | |
| (a) | | | Ordinary Portland cement | t | 815.00 | | |
| (b) | | | Portland blast-furnace cement | t | | | Rate only |
| (c) | | | Slaked road lime | t | | | Rate only |
| | | | | | | **SECTION 3500 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **3600** | | | **CRUSHED-STONE BASE** | | | | |
| 36.01 | | (e) | **Crushed-stone base:**<br>Constructed from type G3 natural material obtained from commercial sources and compacted to: | | | | |
| | | (i) | 98% of modified AASHTO density,150mm thick layer- Haulage Included | $m^3$ | 1 601.00 | | |
| 36.03 | | | Crushed-stone base trial section (150mm) constructed in accordance with the provisions of Clause 3603 | $m^2$ | 700.00 | | Rate only |
| | | | | | | **SECTION 3600 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | AMOUNT (R) |
| **4100** | | | **PRIME COAT** | | | | |
| 41.01 | | | Prime coat: | | | | |
| (a) | | | RTL 3/12P tar prime | l | | | Rate only |
| (b) | | | Quick drying RTH 1/4P tar prime | l | 4 292.40 | | |
| (c) | | | MC-30 cut-back bitumen | l | 4 292.40 | | Rate only |
| (d) | | | MC-70 cut-back bitumen | l | | | Rate only |
| (e) | | | Invert bitumen emulsion | l | | | Rate only |
| 41.02 | | | Aggregate for blinding: | | | | |
| | | (i) | Natural sand | $m^2$ | 50.00 | | |
| | | (ii) | Crushed sand | $m^2$ | 5.00 | | Rate only |
| 41.03 | | | Extra over item 41.01 for applying the prime coat in areas accessible only to hand held equipment | l | 250.00 | | |
| | | | | | | **SECTION 4100 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | AMOUNT (R) |
| **4200** | | | **ASPHALT BASE AND SURFACING** | | | | |
| 42.02 | | | Asphalt surfacing | | | | |
| (a) | | | Asphalt Surfacing-Continuously Graded (Medium) 30mm | $m^2$ | 5 365.50 | | |
| 42.04 | LI | | Tack Coat 30% Stable-Grade Emulsion | l | 3 219.30 | | |
| 42.05 | | | Binder Variation - 60/70 Pen Bit | l | 375.59 | | |
| 42.06 | | | Variation active filler content | | | | |
| (a) | | | Cement | t | 1.00 | | |
| 42.21 | LI | | Complete Speed hump according to drawing (Signs, asphalt and road markings, As per Drawing) | No | 10.00 | | |
| | | | | | | **SECTION 4200 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5100** | | | **PITCHING, STONEWORK AND PROTECTION AGAINST EROSION** | | | | |
| 51.01 | | | Stone pitching | | | | |
| (b) | | | Grouted stone pitching | m² | 1 200.00 | | |
| 51.04 | | | Concrete pitching and block paving | | | | |
| (a) | | | Cast in situ concrete pitching, Class 30/19: | | | | |
| | | (i) | 150mm thick (Mesh Ref 311 included) | m² | 120.00 | | Rate Only |
| 51.05 | | | Precast Concrete edge beams (Fig 10 Kerb) | $m^3$ | 280.35 | | |
| | | | | | | **SECTION 5100 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5200** | | | **GABIONS** | | | | |
| 52.01 | LI | | Foundation trench excavation and backfilling: | | | | |
| (b) | LI | | In all other classes of material | m³ | 100.00 | | Rate Only |
| 52.02 | LI | | Surface preparation for bedding the gabions | m² | 350.00 | | Rate Only |
| 52.03 | LI | | Gabions | | | | |
| (a) | LI | | Galvanized gabion boxes, wire diameter 2,7mm, Mesh | | | | |
| | | (i) | size 80mm x 100mm, diaphragm spacing: 1,0m | | | | |
| (i) | LI | | 4m x 1m x 1m | m³ | 350.00 | | Rate Only |
| (c) | LI | | Galvanized gabion mattresses (wire diameter 2,5 mm, mesh size 80mm x 100mm, diaphragm spacing 1,0m | | | | |
| (i) | LI | | 2m x 1m x 0,23m deep | m³ | 50.00 | | Rate Only |
| (ii) | LI | | 2m x 1m x 0,30m deep | m³ | 75.00 | | Rate Only |
| 52.04 | LI | | Filter fabric | | | | |
| (a) | LI | | Grade U24 or approved equivalent | m² | 320.00 | | Rate Only |
| | | | | | | **SECTION 5100 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5400** | | | **GUARDRAILS** | | | | |
| 54.01 | | | Guardrails on timber posts: | | | | |
| (a) | LI | | Galvanized | m | 0.00 | | Rate only |
| 54.02 | | | Guardrails on steel posts: | | | | |
| (a) | LI | | Galvanized | m | | | Rate only |
| 54.03 | | | Extra over items 54.01 for horizontally curved guardrails factory bent to a radius of less than 45 m | m | 15.00 | | Rate only |
| 54.04 | | | End treatments: | | | | |
| (a) | | | End wings (Terminal Section) | No. | | | Rate only |
| (b) | | | Bull noses | No. | 6.00 | | Rate only |
| (c) | LI | | Bridge adaptors | No. | | | Rate only |
| 54.06 | | | Reflective plates | No. | 20.00 | | Rate only |
| 54.07 | LI | | Removing existing guardrails | m | | | Rate only |
| 54.12 | | | Extra over item 54.01 for drilling and blasting holes for guardrail posts | No. | 24.00 | | Rate only |
| 54.13 | | | Steel base plates for timber guardrail posts on structures | No. | 24.00 | | Rate only |
| 54.15 | | | Extra over item 54.02 to fasten guardrails to bridge | No | 24.00 | | Rate only |
| | | | | | | **SECTION 5400 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5500** | | | **FENCING** | | | | |
| 55.04 | | | Moving existing fences and gates: | | | | |
| (a) | | | Fences: | | | | |
| | LI | (i) | Stock-proof fences | km | 2.00 | | |
| | LI | (ii) | Security fences | km | 2.00 | | |
| (b) | | | Gates | No. | 15.00 | | |
| | | | | | | **SECTION 5500 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5600** | | | **ROAD SIGNS** | | | | |
| B56.01 | | | Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in diamond grade retro-reflective material, where the sign board is constructed from: | | | | |
| (a) | | | Aluminium sheet (2,0 mm thick): | | | | |
| | LI | (i) | Area not exceeding 2 $m^2$ | $m^2$ | 50.00 | | |
| | LI | (ii) | Area exceeding 2 $m^2$ but not 10 $m^2$ | $m^2$ | 60.00 | | |
| | LI | (iii) | Area not exceeding 10 $m^2$ | $m^2$ | 40.00 | | |
| 56.02 | | | Extra over item 56.01 for using: | | | | |
| (a) | | | Background of retro-reflected material: | | | | |
| | | (i) | Class I | $m^2$ | | | Rate only |
| | | (ii) | Class II | $m^2$ | | | Rate only |
| | | (iii) | Class III | $m^2$ | 60.00 | | |
| 56.03 | | | Road sign supports (overhead road sign structures excluded): | | | | |
| (a) | | | Structural steel | t | 1.00 | | Rate only |
| (b) | | | Steel tubing | t | 1.00 | | Rate only |
| (c) | | | Timber | | | | |
| | LI | (i) | 100 mm dia. | m | 50.00 | | |
| | LI | (ii) | 150 mm dia. | m | 30.00 | | |
| 56.04 | | | Kilometre posts | | | | |
| (a) | | | Concrete | No | 2.00 | | Rate only |
| 56.05 | | | Excavation and backfilling for road sign | | | | |
| | LI | | supports (not applicable to kilometre posts) | $m^3$ | 11.00 | | |
| 56.06 | LI | | Extra over item 56.05 for cement-treated soil backfill | $m^3$ | 15.00 | | |
| 56.07 | | | Extra over item 56.05 for rock excavation | $m^3$ | 12.00 | | |
| | | | | | | **SECTION 5600 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5700** | | | **ROAD MARKINGS** | | | | |
| 57.02 | | | Retro-reflective road-marking paint: | | | | |
| (a) | | | White lines (broken or unbroken): | | | | |
| | | (i) | 100mm wide | km | 5.58 | | |
| | | (ii) | 200mm wide | km | | | Rate only |
| | | (iii) | 500mm wide | km | 2.00 | | |
| (b) | | | Yellow lines (broken or unbroken): | | | | |
| | | (i) | 100mm wide | km | 2.50 | | Rate only |
| | | (ii) | 150mm wide | km | | | Rate only |
| (d) | | | White lettering and symbols | m² | 200.00 | | |
| (e) | | | Yellow lettering and symbols | m² | 60.00 | | Rate only |
| (f) | | | Transverse lines, painted island and arrestor bed markings (any colour) | m² | 250.00 | | Rate only |
| 57.04 | | | Variations in rate of application: | | | | |
| (a) | | | White paint | l | 40.00 | | |
| (b) | | | Yellow paint | l | 40.00 | | |
| (c) | | | Retro-reflective beads | kg | 30.00 | | |
| 57.05 | | | Roadstuds | | | | |
| (a) | | | Uni-directional | | | | |
| | | (i) | Stimsonite or similar | No | 2.00 | | Rate only |
| | | (ii) | Armourlite or similar | No | 2.00 | | Rate only |
| (b) | | | Bi-directional | | | | |
| | | (i) | Stimsonite or similar | No | 2.00 | | Rate only |
| 57.06 | | | Setting out and pre-marking the lines (excluding traffic island markings, lettering and symbols) | km | 5.58 | | |
| 57.07 | | | Re-establishing the painting unit: | | | | |
| (a) | | | At intervals during the contract period | No. | 1.00 | | Rate only |
| (b) | | | At the end of the maintenance period | L.SUM. | 1.00 | | Rate only |
| 57.08 | | | Removal of existing, temporary or permanent road markings by: | | | | |
| (a) | | | Sandblasting | m² | 5.00 | | Rate only |
| (b) | | | Over painting as temporary measure | m² | 5.00 | | Rate only |
| | | | | | | **SECTION 5700 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **5900** | | | **FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS** | | | | |
| 59.01 (b) | | | Finishing the road and road reserve: Single carriageway road | km | 5.58 | | |
| | | | | | | **SECTION 5900 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **7300** | | | **CONCRETE BLOCK PAVING FOR ROADS** | | | | |
| 73.01 | | | Concrete block paving (SABS 1058) | | | | |
| (a) | | | Grey 80mm interlocking paving | m² | 41091.00 | | |
| 73.03 | | | Provision of approved herbicide and ant poison | | | | |
| (a) | | | Provision of materials | Psum | 1.00 | 15 000.00 | R 15 000.00 |
| (b) | | | Contractor's charges and profit added to prime cost sum | % | 15 000.00 | | |
| | | | | | | **SECTION 7300 TOTAL CARRIED TO SUMMARY** | |

| CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ITEM** | **LIC** | | **DESCRIPTION** | **UNIT** | **QUANTITIES** | **RATE** | **AMOUNT (R)** |
| **8100** | | | **TESTING MATERIALS AND WORKMANSHIP** | | | | |
| 81.02 | | | Other special tests requested by the engineer | Prov Sum | 1.00 | 60 000.00 | R 60 000.00 |
| (b) | | | Handling costs and profit in respect of sub-item 81.02 above | % | 60 000.00 | | |
| | | | | | | **SECTION 8100 TOTAL CARRIED TO SUMMARY** | |

**BLOUBERG LOCAL MUNICIPALITY**
**CONTRACT NUMBER :BID NUMBER. BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26**
**SUMMARY OF SCHEDULE OF QUANTITIES**

**SCHEDULE A: ROADWORK'S**

| | | | |
|---|---|---|---|
| 1200 | | General requirements and provisions | |
| 1300 | | Contractor's establishment on site and general obligations | |
| 1400 | | Housing, offices and laboratories for the engineer's site personnel | |
| 1500 | | Accommodation of traffic | |
| 1700 | | Clearing and grubbing | |
| 1800 | | Day works | |
| 2100 | | Drains | |
| 2200 | | Prefabricated Culverts | |
| 2300 | | Concrete kerbing, concrete channelling, chutes and downpipes, and concrete linings for open drains | |
| 3100 | | Borrow materials | |
| 3300 | | Mass earthworks | |
| 3400 | | Pavement layers of gravel material | |
| 3500 | | Stabilization | |
| 3600 | | Crushed Stone Base | |
| 4100 | | Prime Coat | |
| 4200 | | Asphalt Base and Surfacing | |
| 5100 | | Pitching, stonework and protection against erosion | |
| 5200 | | Gabions | |
| 5400 | | Guardrails | |
| 5500 | | Fencing | |
| 5600 | | Road Signs | |
| 5700 | | Road markings | |
| 5900 | | Finishing the road and road reserve and treating old roads | |
| 7300 | | Concrete Block Paving For Roads | |
| 8100 | | Testing materials and workmanship | |
| | | **TOTAL SCHEDULE A: ROADWORK'S** | |

**BLOUBERG LOCAL MUNICIPALITY**
**CONTRACT NUMBER :BID NUMBER. BM01/25/26**
**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS : BID NUMBER. BM01/25/26**

**CALCULATION OF CONTRACT SUM**

| | | |
|---|---|---|
| TOTAL SCHEDULE A: ROADWORK'S | A | |
| **TENDER SUM (CARRIED FORWARD TO LETTER OF TENDER )** | C = A+ B | |
| **CONTINGENCIES ( 10.0%)**<br>The sum provided here is under the sole control of the Employer and may be deducted in whole or in part. The tenderer shall add 10**%** of the total of schedule of quantities for contingencies. | D=C*10.0% | |
| **SUBTOTAL** | E =C+ D | |
| **VALUE ADDED TAX (VAT) 15%**<br>The tenderer shall add 15% of the subtotal for VAT | F=E*15% | |
| **TOTAL** | G =E+ F | |

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM1/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

# THE CONTRACT

**PART C3 SCOPE OF WORKS**

**PART C4 SITE INFORMATION**

**CONTRACT NO.: BM1/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

# PART C3: SCOPE OF WORK

C3.1 DESCRIPTION OF WORKS ..... C.70

C3.2 ENGINEERING ..... C.80

C3.3 CONSTRUCTION ..... C.81

**CONTRACT NO.: BM1/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C3.1 DESCRIPTION OF WORKS

### C3.1.1 Employer's Objectives

Blouberg LocalMunicipality, in consultation with the community, identified the need for the CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS in Limpopo Province for the Blouberg Local Municipality.

Dolmen Engineers cc was appointed by Blouberg Local Municipality for the planning, design and construction supervision of the project.

### C3.1.2 Overview and Location of Works

The scope of works entails the construction of kobe access road and internal streets.

### C3.1.3 Extent of Works

The scope of the works will entail the construction of kobe access road and internal streets from road D1200. The major activities within the project will include, among other, the following;

- Clearing and grubbing
- Mass Earthworks
- Construction of pavement layers
- Road Surfaced using 80mm Interlocking Paving Blocks class 25 with an average compressive strength 25Mpa (comply with SANS 1058-1985).
- 30mm Asphalt surfacing on Tapers on road D1200 acceses
- Installation of concrete drifts
- Construction of drains
- Installtion of Kerb and Edge beam
- Road Signs
- Testing material and workmanship

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

### C3.1.4 Location of the Works

This project is situated in the Blouberg Local Municipality of Limpopo (See Figure 1 for locality plan). See **table 1** below for project co-ordinates and **Figure 1** for the locality plan.

**Table 1: Co-ordinates**

| DESCRIPTION | COORDINATES | COORDINATES |
|---|---|---|
| KOBE | 23°10'7.72"S | 28°53'12.44"E |

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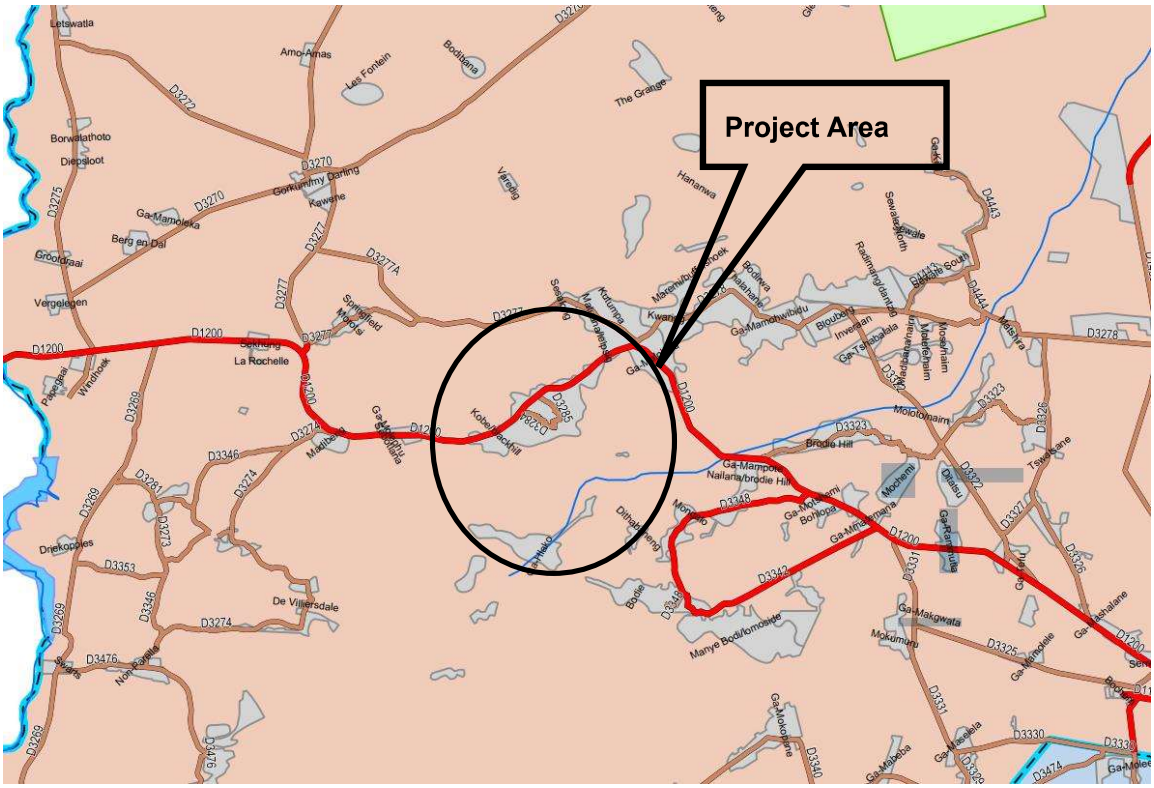



**Figure 1: Locality Plan**

### C3.1.5 Temporary Works

Temporary bypasses need to be constructed for the accommodation of traffic.

### C3.1.6 General Information

C3.1.6.1 Drawings

The reduced drawings contained in Annexure C5.2 that form part of the bid document shall be used for bid purposes only. Further drawings are to be provided on an on-going basis by the Employer's Agent.

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 Employer's Agent requires to complete the as-built drawings, shall be supplied to the resident Employer's Agent before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Employer's Agent. The Employer's Agent will supply all figured dimensions omitted from the drawings.

C3.1.6.2 Power, Water Supply and Other Services

The contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost of providing these services will be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

C3.1.6.3 Contractor's Camp Site and Security

The contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel and all regulations stipulated by the local authority shall be adhered to.

It is anticipated that the contractor's choice of a camp site will be influenced by the availability of telephone and electrical connections as well as the supply of potable water.

Provision is made in these specifications for the erection of a security fence around the site offices. The contractor shall be responsible for the security of his personnel and constructional plant on and around the site of the works and for the security of his camp, and the employer will consider no claims in this regard.

C3.1.6.4 Additional Requirements for Construction Activities

C3.1.6.4.1 The contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

C3.1.6.4.2 The contractor shall submit proposals in connection with directional signs to the Employer's Agent for approval.

C3.1.6.5 Programme Requirements for Construction Activities

The contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

C3.1.6.6 Construction in Confined Areas

It may be necessary for the contractor to work in confined areas. In certain areas the width of the fill material and pavement layers may reduce to zero and the working space may be confined. The method of construction in these confined areas depends on the contractor's construction plant. However, the contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and amounts tendered will be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

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## C3.1.7 Labour Regulations

### C3.1.7.1 Payment for the labour-intensive component of the works

Payment for works identified in clause 2.3 "the Extent of the Project" in the Project Specifications as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

### C3.1.7.2 Applicable labour laws

Sectorial determination 2: Civil Employer's Agenting sector

### 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 –

(i) "department" means any department of the State, implementing agent or contractor;
(ii) "employer" means any department, implementing agency or contractor that hires workers to work in elementary occupations on a SPWP;
(iii) "worker" means any person working in an elementary occupation on a SPWP;
(iv) "Elementary occupation" means any occupation involving unskilled or semi-Skilled work;
(v) "management" means any person employed by a department or implementing agency to administer or execute an SPWP;
(vi) "task" means a fixed quantity of work;
(vii) "task-based work" means work in which a worker is paid a fixed rate for performing a task;
(viii) "task-rated worker" means a worker paid on the basis of the number of tasks completed;
(ix) "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**

(a) A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

(b) An employer and worker may agree on longer meal breaks.

(c) A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

(d) 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) 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**

(a) A worker may only work on a Sunday or public holiday to perform emergency or security work.

(b) Work on Sundays is paid at the ordinary rate of pay.

(c) A task-rated worker who works on a public holiday must be paid –

i. the worker's daily task rate, if the worker works for less than four hours;

ii. double the worker's daily task rate, if the worker works for more than four hours.

(d) A time-rated worker who works on a public holiday must be paid –

i. the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

ii. double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

**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 authorized 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

(iii) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

(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.

(i) 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 in cash or by cheque or 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.
(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**

(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. 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**

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

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**C3.1.7.23 Reporting**

The Contractor should submit the following at the beginning of the Contract:

- Contracts of all the workers employed on the contracts including their certified identity documents;
- Proof of Registration for COIDA and UIF;
- OHS Files

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

- Signed Muster rolls/pay sheets of temporary workers and permanent staff detailing the number, category, gender, rate of pay and daily attendance.
- Copies of certified identity documents of workers
- Number of persons who have attended training including nature and duration of training provided
- Assets created, rehabilitated or maintained in accordance with indicators in the EPWP M&E framework
- Plant utilization returns
- Progress report detailing production output compared to the programme of works

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## 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 Employer's Agent in the compilation of the as-built drawings.

### C3.2.2 Employer's Design

(a) Detail description of Works

(b) General Works

(c) Sign Gantries.

### C3.2.3 Contractor's Design

Where contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional Employer's Agent's design certificate.

### C3.2.4 Design procedures

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

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## C3.3 CONSTRUCTION

### C3.3.1 STANDARD SPECIFICATIONS

(a) The following specifications shall apply for the construction of the Works.

(i) The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998).

The contractor may purchase copies of Volume (i) from the South African Institution of Civil Employer's Agents.

| | | |
|---|---|---|
| SAICE | | Tel : (011) 805-5947 |
| Waterfall Park | / Postnet Suite 81 | Fax : (011) 805-5971 |
| Howick Gardens | / Private Bag X65 | |
| Vorna Valley | / Halfwayhouse | Contact Person : Angeline Aylward |
| Becker Street | / 1685 | |
| Midrand | | |

(b) SABS or BS Specifications and Codes of Practice

Wherever any reference is made to the South African Bureau of Standards (SABS) and the British Standards Specification (BSS) in either these Bill of Quantities or the Specification of Materials and Methods to be Used (OOG-001E), this reference shall be deemed to read "SABS or equivalent standard" and BS or equivalent standard" respectively.

(c) Various other specifications specified in the COLTO Standard Specifications or the Project Specifications.

(d) Latest **Sabita Manual**, Manual 25 entitled "*Quality Management in the Handling and Transport of Bituminous Binders*".

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## C3.3.2 PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

### C3.3.2.1 General Conditions of Contract Referred to in the Standard Specifications

The references to the General Conditions of Contract appearing in the COLTO Standard Specifications refer to the COLTO General Conditions of Contract which is superseded in this contract by the General Conditions of Contract for Construction Works 2010. The corresponding clause in the latter document pertaining to the reference in the COLTO Standard Specifications is listed in the table below.

| Clause No. in the Standard Specifications | Clause No. in COLTO General Conditions | Equivalent Clause No. in General Conditions of Contract 2015 |
|---|---|---|
| 1202 | 15 | 5.6.1 |
| 1206 | 14 | Deleted |
| 1209 | 52 | 6.10.1 |
| 1210 | 54 | 5.14 |
| 1212(1) | 49 | 6.8 |
| 1215 | 45 | 5.14.1 |
| 1217 | 35 | 8.2.1 |
| 1303 | 49 | 6.8 |
| 1303 | 53 | 6.11 |
| 1303 | 12 | 5.6 |
| 1303 | 45 | 5.12.1 |
| 1403 | 40(1) | 6.4.1 |
| 1505 | 40 | 6.4 |
| 31.03 | 40 | 6.4 |
| 3204(b) | 40 | 6.4 |
| 3303(b) | 2 | 3.2 |
| 5803(c) | 40 | 6.4 |
| 5805(d) | 40 | 6.4 |
| 6103(c) | 40 | 6.4 |
| Item 83.03 | 22 | 5.15 |
| ALL SECTIONS | 48 | 6.6 |

### C3.3.2.2 Amendments to the Standard Specifications

There are no amendments to the Standard Specifications as issued by the Committee of Land Transport Officials (COLTO).

### C3.3.2.3 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.

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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.

## C3.3.2.4 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.
**Unskilled and semi-skilled labour required for the execution of all labour intensive works shallbe engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.**

**The minimum rate of pay set for the EPWP is R 180.00 per task or per day.**

**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) 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 of the EPWP Infrastructure Guidelines.

**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

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The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

a) 60 % 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**

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

**Contract participation goals**

**There is no specified contract participation goal for the contract. The contract participation** goal shall be measured in the performance of the contract to enable the employment provided to targeted labor to be quantified.

**The wages and allowances used to calculate the contract participation goal shall, with respect** to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

**Terms and conditions for the engagement of targeted labour**
Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

**Variations to SANS 1914-5**
The definition for net amount shall be amended as follows: Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.

**The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as** women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

**Training of targeted labour**
The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

The cost of the formal training of targeted labour will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works– Cinderella Makunike, Fax Number 012 328 6820 or email cinderella.makunike@dpw.gov.za Tel: 083 677 4026

The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if

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he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.

The contractors shall do nothing to dissuade targeted labour from participating in the above- mentioned training programmes.

An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of 1.3.4 above.

Proof of compliance with the requirements of 1.3.2 to 1.3.6 must be provided by the Contractor to the Employer prior to submission of the final payment certificate

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## MATTERS RELATING TO THE STANDARD SPECIFICATIONS

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## SECTION 1200 : GENERAL REQUIREMENTS AND PROVISIONS

### B1202 SERVICES

Add the following to the fifth paragraph:

"Provision is made in the bill of quantities for payment for searching and exposing of known or unknown services as well as the relocation and/or protection of existing services. Any moving of existing services which may be required within the proclaimed road reserve will be undertaken by the relevant service authorities or by a selected subcontractor if so ordered by the Employer's Agent."

### B1204 PROGRAMME OF WORK

**(a) General requirements**

Amend the word "network" in the fourth line of the first paragraph to read as "bar (Gantt) chart".

Add the following after the third paragraph:

"The bar-chart programme to be provided by the contractor shall show the various activities in such detail as may be required by the Employer's Agent. Progress in terms of the programme shall be updated monthly by the contractor in accordance with the progress made by the contractor.

In compiling the programme of work, the contractor shall indicate and make due allowance for the following, as specified elsewhere in the contract documents:

- The requirements regarding the accommodation of traffic and areas that may be occupied at any time for construction purposes (as indicated on the drawings and specified in Section 1500 of the specifications)
- Requirements regarding the training of labourers and Emerging Contractors (EC's).
- The requirements for work to be undertaken by labourers and work to be undertaken by EC's.

**(b) Programme of work for rehabilitation work**

Amend the word "network" in the fourth line of the second paragraph to read as "bar (Gantt) chart".

### B1205 WORKMANSHIP AND QUALITY CONTROL

Add the following to the third paragraph:

"The Employer's Agent shall, however, undertake acceptance control tests for the judgment of workmanship and quality, without accepting any obligations vested with the contractor in terms of the contract with specific reference to quality of materials and workmanship. Such acceptance control test done by the Employer's Agent shall not relieve the contractor of his obligations to maintaining his own quality control system."

Add the following at the end of this clause:

"The Employer's Agent shall, for the purpose of acceptance control on products and workmanship, assess test results and measurements in accordance with the provisions of section 8300 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."

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

Add the following:

"The contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith."

The Contractor shall take care that property beacons, trigonometrical survey beacons or setting-out beacons are not displaced or destroyed without the consent of the Employer's Agent. Property beacons and trigonometrical survey beacons that have been displaced or destroyed shall be replaced by a registered land surveyor, who shall certify such replacement.

The cost of replacing all beacons displaced or destroyed during the course of the Contract without the consent of the Employer's Agent shall be borne by the Contractor."

## B1209 PAYMENT

### (b) Rates to be inclusive

Add the following:

"VAT shall be excluded from the rates and provided for as a lump sum in the Summary of Bill of Quantities".

### (e) Materials on the site

Add the following:

"In addition, the Employer's Agent may at his sole discretion also allow payments under "Materials on Site" in respect of any construction materials if stored off-site providing that:

(a) The site selected for this purpose is approved by the Employer's Agent

(b) Such land is physically separated from any production plant or operation

(c) Only materials for use under this contract is stockpiled on such land

(d) The contractor has provided proof of an agreement with the owner of such land that the owner has no claim whatsoever on any materials stockpiled on such land

(e) Materials obtained by the contractor for or on behalf of emerging subcontractors (SMME's) shall remain the responsibility of the contractor after payment has been made in respect of materials on site."

## B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Add the following after the first paragraph of this clause:

"For the purposes of this contract, extension of time resulting from abnormal rainfall or other forms of inclement weather shall be determined according to the requirements of Method ii (critical-path method)."

**Method (ii) (Critical path method)**

Delete "(based on a five-day working week)" in the fifth and sixth lines of the second paragraph of the description of this method.

Delete the last sentence of the second paragraph of the description of this method and replace with the following:

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"The value of "n" shall be taken as three (3) working days per calendar month.

If normal rainy or inclement weather, resulting in delays, occurs for less than three (3) working days in any calendar month, the difference between the three (3) working days and the actual number of working days on which normal rainy or inclement weather occurred, shall be ignored and not accumulated for the duration of the contract period for the purposes of determining an extension of time due to normal rainy weather, nor due to any other reason.

Items of work on the critical path of the programme of work which are subject to climatic limitations, shall also be considered for extension of time if such items of work are delayed by e.g. cold weather, high winds or other inclement weather conditions.

In this regard, reference shall be made to weather limitations specified for the application of various bituminous products. However, for months during which seal-work cannot be undertaken in terms of the specifications, no extension of time shall be claimed for.

Rainfall records for **Buffelshoek**

| MONTH | AVERAGE RAINFALL (mm) | RAIN DAYS (per month) |
|---|---|---|
| JANUARY | 71.2 | 7 |
| FEBRUARY | 50.7 | 6 |
| MARCH | 29.6 | 5 |
| APRIL | 17.1 | 3 |
| MAY | 5 | 1 |
| JUNE | 1.4 | 0 |
| JULY | 1.2 | 0 |
| AUGUST | 1.6 | 1 |
| SEPTEMBER | 6.4 | 1 |
| OCTOBER | 16.7 | 3 |
| NOVEMBER | 35.7 | 6 |
| DECEMBER | 56 | 8 |

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

Add the following subclause:

"(h) No concrete kerbing or concrete drains directly adjoining the bituminous surfacing shall be constructed prior to the completion of the bituminous surfacing."

## B1222 USE OF EXPLOSIVES

Add the following subclause:

"(h) Where blasting operations are undertaken in close proximity of temporary deviations, the contractor shall implement all such safeguarding measures as may be required and instructed by the Employer's Agent."

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## B1224 THE HANDING-OVER OF THE ROAD RESERVE

Add the following:

"The total length of the road reserve between the specified limits of construction will be handed over to the contractor on the commencement date. Reference shall, however, be made to the requirements of section 1500 of these specifications where limitations in respect of work-areas are specified. In the event of the non-adherence by the contractor in terms of the mentioned specifications, the Employer's Agent shall withdraw such sections of the road reserve as may be justified to ensure suitable progress of the works or safe passage of traffic."

## B1229 SABS CEMENT SPECIFICATIONS

Replace the last paragraph of this clause with the following:

"Where reference is made in this specification or the standard specifications to the cement specifications, eg. SABS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

**SABS ENV 197-1: Cement-composition, specifications and conformity criteria.**

Part 1: Common cements.

Furthermore, where reference is made in this specification or the standard specifications to the different cement types, the following new names/types shall apply:

| Old product nomenclature | Typical new product nomenclature | |
|---|---|---|
| | Cement type | Cement strength class |
| OPC | CEM I<br>CEM I | 32,5<br>32,5R |
| RHC | CEM I<br>CEM I | 42,5<br>42,5R |
| LASRC | No provision made | No provision made |
| PC15SL | CEM II/A-S<br>CEM II/A-S<br>CEM II/A-S | 32,5<br>32,5R<br>42,5 |
| PC15FA | CEM II/A-V<br>CEM II/A-V<br>CEM II/A-W<br>CEM II/A-W | 32,5<br>32,5R<br>32,5<br>32,5R |
| RH15FA | CEM II/A-V<br>CEM II/A-V<br>CEM II/A-W<br>CEM II/A-W | 42,5<br>42,5R<br>42,5<br>42,5R |
| PBFC | CEM III/A<br>CEM III/A | 32,5<br>32,5R |

| Old product nomenclature | Typical new product nomenclature | |
|---|---|---|
| | Cement type | Cement strength class |
| PFAC | CEM II/B-V<br>CEM II/B-W | 32,5<br>32,5 |
| RH30SL | CEM II/B-S<br>CEM II/B-S | 32,5R<br>42,5 |
| RH40SL | CEM III/A<br>CEM III/A | 32,5R<br>42,5 |

CEM I 32,5, CEM II A-S 32,5, CEM II/A-V 32,5, or CEM III A may be used for the manufacture of reinforced concrete members."

Add the following new clauses:

**"B1230: IN-SERVICE AND STRUCTURED TRAINING**

The contractor shall in addition to the structured (accredited) training as provided for in Part C of this document implement an in-service training programme, from the commencement of the contract, in which the various skills required for the execution and completion of the works are imparted to the labourers engaged thereon, in a programmed and progressive manner. Labourers shall be trained progressively throughout the duration of the contract, in the various stages of a particular type of work.

**(a) Details of in-service and structured training**

(i) The contractor shall attach to form RDP 1(E) basic details of his proposed in-service training programme, which details shall inter alia include the following:

- the details of training to be provided
- the manner in which the training is to be delivered
- the number and details of trainers to be utilised.

(ii) The in-service training programme shall be submitted with the initial works programme. The progress in relation to this programme will be recorded monthly and attached to the site meeting minutes and payment certificate.

(iii) The contractor shall provide on site, sufficient skilled and competent trainers to train all labourers engaged on the contract, in the various skills required for the execution and completion of the works.

(iv) All labourers shall be remunerated in respect of all time spent undergoing training.

(v) Every worker engaged on the contract shall on the termination of his participation on the contract, be entitled to receive from the contractor, a certificate of service in which the following information shall be recorded:

- the name of the contractor
- the name of the employee
- the name of the project/contract
- the nature of the work satisfactorily executed by the worker and the time spent thereon

- the nature and extent of training provided to the worker
- the dates of service.

The cost of the above obligations shall be deemed to be covered by the sums and rates tendered for items B13.01(a), (b) and (c) in the bill of quantities. The performance of the contractor in providing in-service training, shall be taken into consideration should the contractor fail to reach his CPG at the completion of the project.

**(b) Lead time for training**

The training of labour as specified shall, as far as possible, take place before commencement of each activity and the contractor shall take into account in his programme the lead-time he requires for such training. All training herein specified shall be deemed to be a construction activity and a non-negotiable condition of the contract".

**B1231 COMMUNITY LIAISON OFFICER (CLO)**

The contractor or his appointed agent will appoint a Community Liaison Officer (CLO) after consultation with the local communities, the Employer's Agent and the employer. The contractor shall direct all his liaison efforts with the local communities through the appointed officer. The contractor shall, however, accept the appointed as part of his management personnel.

**(a) Duties of the Community Liaison Officer**

The Community Liaison Officer's duties will be:

(i) To be available on site daily between the hours of 07h00 and 17h00 and at other times as the need arises. His normal working day will extend from 07h00in the morning until 17h00 in the afternoon.

(ii) To determine, in consultation with the contractor, the needs of the temporary labour for relevant skills training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.

(iii) To communicate daily with the contractor and the Employer's Agent to determine the labour requirements with regard to numbers and skill, to facilitate in labour disputes and to assist in their resolution.

(iv) To assist in and facilitate in the recruitment of suitable temporary labour and the establishment of a "labour desk".

(v) To attend all meetings in which the community and/or labour are present or are required to be represented.

(vi) To assist in the identification, and screening of labourers from the community in accordance with the contractor's requirements.

(vii) To inform temporary labour of their conditions of temporary employment and to inform temporary labourers as early as possible when their period of employment will be terminated.

(viii) To attend disciplinary proceedings to ensure that hearings are fair and reasonable.

(ix) To keep a daily written record of his interviews and community liaison.

(x) To attend monthly site meetings to report on labour and RDP matters.

(xi) All such other duties as agreed upon between all parties concerned.

(xii) To submit monthly returns regarding community liaison as illustrated in Part C5.1 of this document (form RDP 12(E)).

**(b) Payment for the community liaison officer**

A special pay item is incorporated in section 1200 of the bill of quantities relating to payment of the liaison officer on a prime cost sum basis. This payment shall only be made for the period for which the duties of the liaison officer are required. The remuneration of the CLO shall be determined by the Employer in terms of the Sectorial determination 2: Civil Employer's Agenting Sector (Task grade 3).

**(c) Period of employment of the community liaison officer**

The period of employment of the community liaison officer shall be as decided upon jointly by the contractor, Employer's Agent and employer at a maximum period of a six months basis, but with the option of renewal.

## B1232 SUBCONTRACTORS

Over and above the stipulations of clause 6 of the General Conditions of Contract 2004, regarding subletting of part of the works, it is a condition of the contract that an approved subcontractor shall not sublet part of his work, covered in his appointment by the main contractor, to another subcontractor without the consent and approval of the Employer's Agent. Subletting shall in all cases be critically considered by the Employer's Agent.

In addition to the provisions of clause 6 of the general conditions of contract regarding subcontracting of the works, it is a requirement of this contract that an approved subcontractor shall not further subcontract work subcontracted to him by the main contractor, to another subcontractor without the consent and approval of the Employer's Agent. Subcontracting shall in all cases be critically considered by the Employer's Agent. The Employer's Agent reserves the right to limit the extent or the volume of work subcontracted by the contractor, should he deem it necessary in terms of progress or quality of workmanship.

## B1233 WORKMEN'S COMPENSATION ACT

All labour employed on the site shall be covered by the Compensation for Occupational Injuries and Deceases Act (COIDA). The contractor shall pay in full, including the payment of the necessary levies, such amounts, as are due in terms of the Act. The contractor at the commencement of the contract shall resolve the manner in which Workmen's Compensation will be handled. Amounts paid by the contractor shall not be included in the wage rates but shall be covered by the Contractor to be deemed as included in his General Obligations rates in Section 1300 of the Bill of Quantities.

Add the following clause:

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## B1234 MINE HEALTH AND SAFETY ACT 1996, ACT 29 OF 1996

### (a) Introduction

The main objective of this Act is to protect the health and safety of persons at mines. This specification is therefore aimed at promoting health and safety specifically at borrow pits. Borrow pits are classified as mines.

### (b) General Provisions

The contractor shall be responsible for controlling his operations at every borrow pit where material is being excavated to ensure compliance with all the requirements of the Mine Health and Safety Act, 1996. The contractor shall also ensure that the works, shaping and finishing off of the borrow pit are done in accordance with the provisions as specified in section 3100 of the COLTO Standard Specifications and this Act. The contractor shall also comply to the requirements as set out in C3.4.3.2 Environmental Management Plan.

The minimum requirements for operations at borrow pits are:

- Borrow pits are worked in such a way that the health and safety of employees and the public will not be endangered.
- A monthly report shall be submitted to the Employer's Agent on health and safety aspects at the borrow pits.
- The contractor shall appoint a manager to manage the borrow pits in accordance with the Mine Health and Safety Act.
- The contractor shall take the necessary steps to ensure that the work area of the borrow pits are safe at all times. This shall include items such as the provision of fencing and security guards.

### (c) Duties of the Manager

The minimum duties of the manager supervising the activities at borrow pits shall be:

- Maintain a healthy and safe borrow pit environment.
- Identify hazards and related risks to which persons and employees are exposed.
- Establish a health and safety policy that
    - o Describes the organisation of work.
    - o Contains aspects concerning the protection of the employees and other persons' health and safety.
    - o Contains a risk analysis.
- Supply and erect the necessary safety and warning signs.

Add the following pay items and change the clause number.

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## B12.35 MEASUREMENT AND PAYMENT

Add the following items:

| **"ITEM** | | | **UNIT** |
|---|---|---|---|
| **B12.01** | **Excavation** | | |
| | Excavating material within the following depth ranges below ground level for the exposing of/or searching for services | | |
| | (a) | 0m to 2m | |
| | | (i) soft material | cubic metre ($m^3$) |
| | | (ii) hard material | cubic metre ($m^3$) |
| | (b) | Extra over item B12.01(a) for excavation by means of hand tools such as picks, crowbars and pneumatic tools or mechanical breakers in close vicinity of services where no machine excavation is permitted | |
| | | (i) soft material | cubic metre ($m^3$) |
| | | (ii) hard material | cubic metre ($m^3$) |

Measurement and payment shall be as specified for item 22.01 in the standard specifications.

| **ITEM** | | | **UNIT** |
|---|---|---|---|
| **B12.02** | **Backfilling** | | |
| | (a) | Using the excavated material | cubic metre ($m^3$) |
| | (b) | Using imported selected material | cubic metre ($m^3$) |

Measurement and payment shall be as specified for item 22.02 in the standard specifications.

| **ITEM** | | | **UNIT** |
|---|---|---|---|
| **B12.03** | (a) | Allow a provisional sum for existing services to be relocated and/or protected as ordered by the Employer's Agent | provisional sum |
| | (b) | Handling costs and profit in respect of subitem B12.03(a) above | percentage (%) |

Measurement and payment shall be in accordance with the general conditions of contract."

| **ITEM** | | | **UNIT** |
|---|---|---|---|
| **B12.04** | **Provision for a Community Liaison Officer** | | |
| | a) | Provisional sum for the payment of the Community Liaison Officer | Provisional Sum |
| | b) | Handling costs and profit in respect of sub-item B12.04(a) | Percentage (%) |

Expenditure of the above item shall be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under the sub-item B12.04 (a), which shall include full compensation for the handling costs of the contractor, and the profit in

connection with providing the community liaison officer."

| ITEM | | | UNIT |
|---|---|---|---|
| **B12.05** | (a) | Mine Health and Safety obligations | Month |
| | (b) | Special information signs | Prime Cost Sum (PC Sum) |
| | (c) | Provision of security guards | Prime Cost Sum (PC Sum) |
| | (d) | Handling cost and profit in respect of sub-item B12.05(b) and (c) | Percentage (%) |

Payment of the rate per month for sub-item B12.05(a) shall include full compensation for all the contractors obligations relevant to the Mine Health and Safety Act.

The prime cost sums shall be paid in accordance with the provisions of the General Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime cost items, which shall include full compensation for the profit in connection with providing the specified service.

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

### B1302 GENERAL REQUIREMENTS

**(a) Camps, constructional plant and testing facilities**

Add the following:

"The contractor shall, at each area where work is being undertaken, provide on a daily basis at least one (1) portable chemical latrine unit per thirty (30) workers for use by construction workers employed on the project. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the satisfaction of the Employer's Agent. No separate payment shall be made for this requirement and 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** | (As specified) |

Add the following after the fifth paragraph:

"The combined total tendered for sub-items (a), (b) and (c) shall not exceed 15% of the tender sum, excluding VAT.

Should the contractor be of the opinion that 15% is inadequate to cover his costs in terms of section 1300, he shall indicate separately with his tender where such costs have been allowed for in his tender. If no such indication is given, the contractor shall not at any stage during the contract for any reason whatsoever claim additional compensation under this item."

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## SECTION 1400 : HOUSING, OFFICES AND LABORATORIES FOR THE EMPLOYER'S AGENT'S SITE PERSONNEL

### B1402 OFFICES AND LABORATORIES

**(a) General**

Add the following:

"The facilities to be provided for the Employer's Agent in terms of these specifications shall be fenced off by a two metre high veranda type security fence with diamond mesh on the vertical portion and barbed wire on the overhang. A security gate shall be provided in the fence which shall be guarded at all times by an acceptable watchman provided by the contractor.

The Employer's Agent's establishment may be incorporated within the contractor's establishment provided that the preceding requirements are met to the satisfaction of the Employer's Agent.

Separate payment shall be made for the provision and erecting of the security fence and gate as indicated on the drawings, but the cost in respect of the provision of a watchman at all times by the contractor shall be deemed to be included in the contractor's tendered rate for item B13.01(c)."

**(b) Offices**

Add the following new sub-sub-clause:

"(xviii) The Employer's Agent's site supervisory staff shall be provided with cellular telephones by the contractor for site communication purposes. Provision is made in the bill of quantities for separate payment of the supply and operating costs of such cellular phones."

### B1403 HOUSING

**(c) Rented accommodation**

Add the following:

"The Employer's Agent may arrange for the obtaining of rented accommodation for his supervisory personnel on site. Payment of such rent shall be made under the provisional sum in sub-item 14.07(a) and shall be expended on a monthly basis by the contractor as ordered by the Employer's Agent."

### B1406 MEASUREMENT AND PAYMENT

Add the following sub-item:

| ITEM | | | UNIT |
|---|---|---|---|
| B1402 (g) | (i) | Provision of Survey Equipment | Provisional sum |
| | (ii) | Handling cost and profit in respect of sub-item B14.02(g)(i) | Percentage (%) |

Measurement and payment in respect of the provisional sum item shall be made in accordance with the provisions of the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under sub-item B.14.02 (g)(i), which shall include full compensation for the handling costs of the contractor and other charges.

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| ITEM | | | UNIT |
|---|---|---|---|
| B1403 (b) (ix) | 1. | Provision of cellular telephones | Number (No) |
| | 2. | Provisional sum for the costs of cellular calls and other charges | Provisional sum |
| | 3. | Handling cost and profit in respect of sub-item B14.03(b)(ix) 2 | Percentage (%) |

The unit of measurement for sub-sub-item B14.03 (b) (ix)1 shall be the number of cellular telephones supplied to the Employer's Agent's site supervisory staff. The tendered rate shall include full compensation for the purchasing of the cellular phones inclusive of any fixed contract costs with the service provider."

Measurement and payment in respect of the provisional sum item shall be made in accordance with the provisions of the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under sub-item B.14.03 (b)(ix) 2, which shall include full compensation for the handling costs of the contractor, and the profit in connection with the payment of the cost of calls and other charges relating to the use by the Employer's Agents site staff of the supplied cellular telephones."

| ITEM | | UNIT |
|---|---|---|
| **B14.11** | **Provision and erection of security fencing (Including gate)** | metre (m) |

The unit of measurement shall be the metre of security fence supplied and erected as indicated on the drawings and/or ordered by the Employer's Agent. The tendered rate shall include full compensation for procuring and furnishing of all material, including one vehicle gate, labour and equipment required to erect the specified security fence and maintain it for the duration of the contract."

**General: Method of payment**

Add the following:

"The tendered rates under this section of the bill of quantities shall also include full compensation for the dismantling and removal from site of all offices, laboratories and other facilities provided for the Employer's Agent's supervisory staff at the completion of the contract."

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## SECTION 1500 : ACCOMMODATION OF TRAFFIC

### B1502 GENERAL REQUIREMENTS

**(e) Access to properties**

Add the following:

"Where the alignment of the new road coincides with the alignment of the existing road, a number of accesses to private properties will have to be operational and maintained during the constructional period. No separate payment will be made for providing acceptable and safe access across the new road at all times during construction of the road."

**(i) Traffic safety officer**

Add the following after subclause (viii):

"(ix) be responsible for contacting all the relevant authorities in the event of an accident on the site of the Works

(vi) arrange for the removal of broken down vehicles that obstruct the normal traffic flow

The Contractor shall provide the traffic safety officer with all the necessary resources to carry out his duties as specified, inter alia, light delivery van (LDV), personnel, warning signs and revolving amber flashing lights. A warning sign with the words "CONTRACTOR TRAFFIC CONTROL" and/or "AANNEMER VERKEERSBEHEER" in clearly legible letters shall be mounted on the vehicle at least 1,5m above ground level to be clearly visible. The vehicle shall be equipped with two revolving amber-coloured flashing lights with a minimum intensity of 55W. The flashing lights shall be switched on and the warning sign be displayed at all times when the vehicle is used on the site.

No separate payment will be made for the traffic safety officer, his vehicle, personnel and equipment and the cost thereof shall be included in the Contractor's cost for his establishment and general obligations (Section 1300)."

Add the following new subclauses:

**"(j) Handing over the site**

The total extent of the site between the limits of construction as described in this document and indicated on the drawings will be handed over to the contractor at the commencement of the contract period. The Employer's Agent however reserves the right to adjust this arrangement should progress or safe passage of traffic warrant such a change.

**(k) Use of explosives in close proximity of temporary deviations**

The contractor shall arrange all necessary traffic control and other requirements to safeguard the traffic on temporary deviations during blasting operations.

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**(l) Land taken up for deviations**

Negotiations with landowners to obtain the land taken up by temporary deviations will be undertaken by the employer. A prime cost sum is allowed in the bill of quantities for payment of compensation to affected landowners. All other negotiations regarding temporary access to properties, land-use, fencing requirements etc. shall be dealt with by the contractor in conjunction with the Employer's Agent and be confirmed in writing and be kept on record by the contractor.

**"(m) Maximum lengths of construction areas**

A temporary deviation, where the proposed road follows the existing route shall be constructed along the length of existing road. Traffic shall generally be accommodated as follows:

On a two-way two lane gravel deviation (Class 1) constructed partially outside or adjacent to the existing road reserve boundaries of road.

(i) On one-way single lane gravel deviation (Class 2) constructed inside the existing road reserve boundaries and on either side of road. In this instance special cognisance shall be taken to accommodate traffic to private properties.

A maximum length of one section of approximately 5,0km or two sections of 3,0km each of deviation (Class 1 or 2) shall be operational at a time and no relieve of this limitation shall be considered by the Employer's Agent except where the programme necessitates such at the construction of bridges."

**B1503 TEMPORARY TRAFFIC CONTROL FACILITIES**

Add the following after the first paragraph:

"All temporary road signs, devices, sequences, layouts and spacing shall comply with the requirements of the Road Traffic Act, 1996 (Act 93 of 1996), the National Road Traffic Regulations, 2000, the South African Road Traffic Signs Manual, the requirements of the relevant road authority and the drawings. All temporary traffic control facilities shall comply with the guidelines set in SA Road Traffic Signs Manual, Volume 2, Chapter 13: Roadworks Signing, (SARTSM, June 1999, obtainable from the Government Pinter, Pretoria)."

**(b) Road signs and barricades**

Add the following:

"All the temporary road signs are to be mounted on posts as specified in section 5600 of the specifications. Provision shall be made for the supply and erection of the signs and the maintenance of the signs during the construction period. Provisions shall also be made for the removal of the temporary road signs on completion of the construction work when such signs are no longer required.

Temporary road signs and channelization devices shall be manufactured in accordance with the latest edition of the South African Road Traffic Signs Manual (June 1999) and placed as shown on the drawings and in Road Signs Note 13. Delineators shall be manufactured from a non-metal material and shall be mounted on a base section also manufactured of non-metal material. Single as well as back-to-back mounted delineators are required.

The obligation to arrange safe passage of traffic shall always be vested with the contractor regardless what is indicated on the drawings of the Employer's Agent."

**(c) Channelization devices and barricades**

Add the following:

"Drums shall not be used as channelization devices.

TW 401 and TW 402 delineators shall comply with the following requirements:

a) It shall be manufactured from a flexible material and shall comply with SABS 1555. The blade portion of the delineator shall be positively affixed to a base unit which in turn shall be stable on its own or be stabilized by means of sandbags when used on the road.

ii) The blade shall be retro-reflectorised, with class 1 yellow sheeting on the side facing oncoming traffic..

iii) It shall nominally be 1000mm high x 250mm wide and the bottom edge of the delineator shall not be more than 200mm above the road surface.

iv) It shall be subject to the approval of the Employer's Agent.

The maximum spacing between centres of delineators shall be as shown on the drawings or as directed by the Employer's Agent."

**(e) Warning devices**

Add the following:

"It is a requirement of this contract that all construction vehicles and plant used on the works will be equipped with rotating amber flashing lights and warning boards as specified in the standard specifications. Construction vehicles travelling outside the limits of construction areas shall however, not operate the warning lights.

The warning lights shall have a base diameter of at least 170mm and the amber bulb cover a height of a least 150mm high. It shall be a requirement that the contractor also provides the Employer's Agent's site personnel with warning lights for their vehicles (a maximum of two lights are required) without any payment applicable.

**B1514 TEMPORARY FENCING AND GATES**

Replace the contents of this clause with the following:

"Where temporary fencing is ordered by the Employer's Agent, it shall be paid for under item 55.06 of the standard specifications. The temporary fencing shall be new fencing material, which shall subsequently be dismantled and removed and erected at an alternative position as directed by the Employer's Agent. When ordered by the Employer's Agent, temporary fences and gates shall be moved to new locations or either left in place or when no longer required be dismantled and removed from site if so directed. Allowance is made in the bill of quantities for moving existing fences and gates."

Add the following clause:

**B1517 RETRO-REFLECTIVE MATERIAL**

"Retro-reflective material for temporary signs shall comply with the requirements of SABS 1519-1 for weathered material. Tests shall be carried out with a field retro-reflectometer and the testing procedure

and classification are described in Clause B 8118. The value of the coefficient of Retro-Reflection shall be at least 60% of the values indicated in Table B 8118/1."

**B1518 MEASUREMENT AND PAYMENT**

Renumber item 15.01 as B15.01 and add the following:

"The tendered rate shall also include for all measures necessary to safeguard traffic on temporary deviations during blasting operations as well as all temporary traffic-control facilities for temporary deviations."

Delete all references to half width construction under payment item 15.01. Half width construction will be measured under payment item 15.10.

Renumber item 15.03 as B15.03 and add the following

"This sections provides only for additional traffic-control facilities as and when required on instruction by the Employer's Agent and does not provide for facilities already included under payment item B15.01"

Add the following sub-item:

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B15.03** | **Temporary traffic control facilities** | |
| (n) | (1) Provision of high visibility safety jackets, safety hats and safety boots as specify by Employer's Agent | provisional sum |
| | (2) Handling cost and profit in respect of sub-item B15.03(n)(1) | Percentage (%) |

Measurement and payment in respect of the provisional sum item shall be made in accordance with the provisions of the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under sub-item B.15.03 (n)(1), which shall include full compensation for the handling costs of the contractor, and the profit.

Add the following items:

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B15.14** | **Allow provisional sum for:** | |
| (a) | repair of damaged temporary road signs and delineators | provisional sum |
| (b) | replacement of damaged temporary road signs and delineators | provisional sum |

The provisional sums allowed under sub-items (a) and (b) shall be expended on a daywork basis in terms of the provisions of the general conditions of contract.

Payment shall only be made in respect of repair work or replacement of such temporary traffic-control facilities arising from damage or loss occasioned by the travelling public and which did not arise from negligence or non-compliance with the requirements of the specifications on the part of the contractor.

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| ITEM | | | UNIT |
|---|---|---|---|
| **B15.15** | **Prime cost sum for:** | | |
| | (a) | Compensation to landowners for land taken up by deviations | prime cost (PC) sum |
| | (b) | Handling cost and profit in respect of sub-item B15.15(a) above | percentage (%) |

The prime cost sum shall be expended in accordance with the provisions of the general conditions of contract. Payment to the landowner shall be made within fourteen (14) days after such order has been given by the Employer's Agent. The contractor shall provide detailed proof of payment before payment shall be certified to the contractor.

The tendered percentage in item B15.15(b) is an extra over percentage on the amount actually spent under sub-item B15.15(a) which shall include full compensation for the handling costs and profit of the contractor."

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## SECTION 1700 : CLEARING AND GRUBBING

### B1702 DESCRIPTION OF WORK

**a) Clearing**

Add the following:

"Clearing shall include the removal of material to a thickness of up to 150mm in-situ material as ordered by the Employer's Agent. No payment shall be made for temporary stockpiling of topsoil material in the case where this material is applied as topsoil after completion of road side slopes.

Should the required depth exceed 150mm, the total volume of material removed shall either be classified as "temporary stockpiling of topsoil" or "unsuitable roadbed material" or "cut to spoil" whichever is applicable as allowed for in the standard specifications. In these cases no payment shall be made for clearing and grubbing.

Clearing as described shall in all cases be undertaken in such a manner that the topsoil is preserved and not contaminated with other debris or rubbish. Cross-sections for the determination of earthworks quantities shall be taken after clearing (topsoil or unsuitable roadbed material) and roadbed preparation if applicable.

Payment for gabion boxes and mattresses which have to be removed and the material sorted and stacked shall be made under section 5200"

### B1703 EXECUTION OF WORK

**(a) Areas to be cleared and grubbed**

Add the following:

"Apart from normal clearing and grubbing, the fill embankments of the existing roads are also to be cleared and grubbed over the areas where the new horizontal alignment coincides with the alignment of the existing road, or where repairs are required to the fill embankments of the approaches of bridges. Provision is made for separate payment for clearing and grubbing of the existing fill embankments where conventional machinery might be suitable to undertake the work due to the steep side slopes of the embankments. An additional pay-item is allowed for in the bill of quantities for this type of clearing and grubbing which may have to be undertaken by hand or similar manner."

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**B1704 MEASUREMENT AND PAYMENT**

Change item 17.01 to read as follows:

| **ITEM** | | | **UNIT** |
|---|---|---|---|
| **B17.01** | **Clearing and grubbing of:** | | |
| a) | Normal areas: | | |
| | i) | Within the road reserve | hectare (ha) |
| | ii) | In borrow pits | hectare (ha) |
| b) | Existing fill embankments with Slopes steeper that 1:4 | | hectare (ha) |

Measurement and payment for sub-items (a) and (b) shall be as specified for item 17.01 of the standard specifications. Where distinction is made for clearing and grubbing existing fill embankments with slopes steeper than 1:4 (vertical : horizontal), payment shall be made under item B17.01."

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## SECTION 1800 : DAYWORK SCHEDULE

Note: This is a new section added to the Standard Specifications.

Add the following:

### B1801 SCOPE

This section covers the listing of daywork items for use in determining payment for work which cannot be quantified in specific pay item "units" in the bill of quantities or work ordered by the Employer's Agent during the construction period which was not foreseen at tender stage for which no applicable rate exists in the schedule or for work of a special or different character warranting special payment as decided by the Employer's Agent.

### B1802 ORDERING OF DAYWORK

No daywork shall be undertaken unless specific written authorisation is obtained from the Employer's Agent.

### B1803 MEASUREMENT AND PAYMENT

The Employer's Agent may order the following daywork items:

| ITEM | DESCRIPTION | UNIT |
|---|---|---|
| B18.01 | Labourers: | |
| | (i) Unskilled | Hour (h) |
| | (ii) Semi-skilled | Hour (h) |
| | (iii) Skilled | Hour (h) |
| B18.02 | Foreman | Hour (h) |
| B18.03 | Tipper trucks: | |
| | (i) 3 – 5 ton | Hour (h) |
| | (ii) 5,1 – 10 ton | Hour (h) |
| B18.04 | TLB 4x4 | Hour (h) |
| B18.05 | Grader (CAT 140G or similar) | Hour (h) |
| B18.06 | LDV | Hour (h) |
| B18.07 | Compaction Rollers: | |
| | (i) Vibrator roller | Hour(h) |
| | (ii) Tamping roller | Hour (h) |
| | (iii) Grid roller | Hour(h) |
| B18.08 | Hand Controlled Compactors | |
| | (i) Pedestrian roller (Bomag BW90) | Hour(h) |
| | (ii) Vibratory plate | Hour(h) |
| | (iii) Rammers | Hour(h) |
| B18.09 | Water truck (min 10000 l) | Hour(h) |
| B18.10 | Dozer (D7 or similar) | Hour(h) |

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The unit of measurement shall be the actual number of hours worked by labourers or foremen or an item of plant.

The tendered rates shall include full compensation for all cost items including overheads, head-office expenses and profits as described in subclause 40(3) of the general conditions of contract and shall be subject to contract price adjustment as provided for in the contract.

The mark-ups on daywork items in accordance with the Appendix to the Tender shall not be applicable on daywork items listed in the bill of quantities in terms of the above specifications. In the event of new daywork rates being requested for items not appearing in the bill of quantities, then the provisions of the general conditions of contract and the Appendix to the Tender shall apply.

Prior to the commencement of any work by the labourers described under item B18.01, the contractor must obtain written consent from the Employer's Agent regarding the classification and composition of all labourers in terms of "unskilled" and "skilled" labourers required for the work as ordered by the Employer's Agent."

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## SECTION 2100 : DRAINS

### B2103 BANKS AND DYKES

Add the following:

"Mitre banks at culvert inlets should be considered at such a skew angle that it guides the water into the inlet with a minimum loss of velocity (energy)."

### B2104 SUBSOIL DRAINAGE

**(a) Materials**

(i) Pipes

Delete the last sentence of the fifth paragraph and substitute it with the following:

"Perforation for 100mm pipes shall be spaced in two rows, one on each side of the vertical centre line of the pipe, and at one third of the circumference. The perforation for the 150mm pipes shall be spaced in four rows, two as described for 100mm pipes, and the other two rows at two thirds of the circumference."

(ii) Synthetic-fibre filter fabric

Add the following:

"All filter fabric shall be a non-woven needle punched type material and must be approved by the Employer's Agent. Filter fabrics shall have a minimum co-efficient of permeability of 3 x 10-3 m per second."

### B2107 MEASUREMENT AND PAYMENT

Change item 21.09 to read as follows:

| ITEM | | UNIT |
|---|---|---|
| **B21.09** | **Polyethylene sheeting, 0,25mm thick, or similar approved material, for lining subsoil draining systems** | square metre (m²) |

Measurement and payment shall be as specified for item 21.09 in the standard specifications."

Add the following new items:

| "ITEM | | UNIT |
|---|---|---|
| **B21.20** | **Galvanised wire mesh 250 x 250mm, at the outlets of subsoil drainage systems. Mesh 10mm x 2,5mm wire diameter** | Number (No) |

The unit of measurement shall be the number of 250mm x 200mm pieces of wire mesh, with a 10mm x 10mm mesh and 2,5mm wire diameter built into the subsurface drain outlet structure as shown on the drawings.

The tendered rate shall include for procuring, furnishing and installing the material, cutting, waste and keeping the mesh in the pipe opening clean during installation.

| ITEM | | UNIT |
|---|---|---|
| **B21.21** | **Subsoil drainage markers** | Number (No) |

Measurement and payment shall be as specified for item 22.24 in the standard specifications."

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## SECTION 2200 : PREFABRICATED CULVERTS

### B2201 SCOPE

Add the following:

"All rectangular culverts with spans from 0,9m up to and including 2,4m shall be constructed with precast units.

The attention of the contractor is drawn to the fact that information given on the plans, longitudinal sections or drainage schedules may have to be altered to suit actual site conditions and, therefore, the contractor shall only construct these culverts after the Employer's Agent has verified the information on the drawings from detail surveys taken on site by the contractor as directed by the Employer's Agent.

Precast units shall be ordered by the contractor from actual measurements of length acquired on the site and not from lengths stated in the drainage schedule or from the bill of quantities.

No precast units shall be ordered until the Employer's Agent has satisfied himself that the proposed units have been manufactured to the required tolerances and loading standards. The Employer's Agent must be given the opportunity to load test units if he considers this necessary".

### B2203 MATERIALS

**(f) Skewed Ends**

Delete the second and third paragraphs and substitute with the following:

"Precast portal and rectangular culverts placed on a skew shall be supplied with cast in situ skewed ends as shown on the drawings. In situ skew ends are to be constructed simultaneously with the wingwalls and headwalls".

### B2204 CONSTRUCTION METHODS

Add the following:

"In all cases where soft founding materials is classified as suitable for culvert bedding construction, the in situ material shall be ripped, moistened and compacted to 90% or 93% modified AASHTO density. The depth of preparation and compaction of founding material shall be as indicated on the drawings or as specified by the Employer's Agent. Allowance for measurement and payment for this work is made in the bill of quantities under this section."

**(c) Excavation by hand**

Where circumstances prevent the use of mechanical excavators and material can be removed only by hand tools, the Employer's Agent shall authorise the supplementary payment to the contractor for such work at the tendered rates for excavation by hand should he be satisfied that the contractor had been unable to prevent the necessity for excavation by hand by proper planning and precautionary measures. The supplementary rate for excavation by hand shall not apply to minor finishing or clearing jobs in excavations which are otherwise being done by mass excavation plant.

Payment for hand excavation shall be an "extra over" payment to normal excavation as allowed for in item 22.01."

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**B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD**

Add the following subclauses:

**"(c) Excavation by hand**

Where circumstances prevent the use of mechanical excavators and material can be removed only by hand tools, the Employer's Agent shall authorise the supplementary payment to the contractor for such work at the tendered rates for excavation by hand should he be satisfied that the contractor had been unable to prevent the necessity for excavation by hand by proper planning and precautionary measures. The supplementary rate for excavation by hand shall not apply to minor finishing or clearing jobs in excavations which are otherwise being done by mass excavation plant.

Payment for hand excavation shall be an "extra over" payment to normal excavation as allowed for in item 22.01.

**(d) Drainage of excavations**

The contractor shall apply suitable, effective drainage and dewatering methods for preventing the ingress of water into the excavation and to keep them dry.

Drainage measures, with the exception of pumping, shall be maintained until the backfilling has been completed. Between various construction stages, pumping may be interrupted in consultation with the Employer's Agent.

Any draining or pumping of water shall be done in a manner as will preclude the concrete or materials or any part thereof from being carried away.

Allowance for measurement and payment for dewatering and keeping dry of culvert excavations is made in the schedule in this section".

**B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS**

**B2210(b)(i) Cast in situ invert slabs**

Replace with the following:

"In accordance with the drawings, transverse construction joints are required in cast in situ concrete invert slabs for portal culverts. In addition, longitudinal construction joints as shown on the drawings between the invert slabs of each of the barrels of multiple culverts are required. Allowance for measurement and payment for a Class F1 surface finish and soft board in these joints is made in the bill of quantities. No payment shall be made for formwork on the outside edges of invert slabs (closest to excavated face).

All culverts (precast as well as in situ) shall be constructed with an in situ reinforced concrete floor laid on a 75mm concrete screed".

Delete subclause B.2210(b)(ii) : "Prefabricated floor slabs."

**B2211 BACKFILLING OF PREFABRICATED CULVERTS**

Change the last sentence in the fourth paragraph to read "90% or 93% as shown on the drawings or as directed by the Employer's Agent."

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## B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES

### (b) Concrete work

Add the following:

"The type of surface finish for in situ concrete in the culverts shall be as indicated on the drawings. Generally all exposed faces shall be of Class F2 formwork and faces covered by backfill shall be Class F1. The top of parapet walls and wingwalls shall be finished to a Class U2 surface finish."

### (h) Prefabricated inlet and outlet structures

Add the following:

"The use of precast concrete inlets and outlets as described in clause 2212(h), shall not be allowed under any circumstances. Cast in situ concrete wingwall type inlets and outlets shall be constructed as indicated on the drawings and shall be in accordance with section 6000 of the Standard Specifications. Allowance for measurement and payment for wingwall type inlets and outlets is made in the schedule in this section."

## B2218 MEASUREMENTS AND PAYMENT

Add the following:

| "ITEM | | | UNIT |
|---|---|---|---|
| B22.01 | (c) | Extra over subitem B22.01(a) for excavation by hand using hand tool | cubic metre ($m^3$) |

Measurement shall be as specified for pay item 22.01 of the standard specifications.

The tendered rate shall include full compensation for carrying out the excavations by hand where circumstances prevent the use of mechanical excavators.

| ITEM | | | UNIT |
|---|---|---|---|
| **B22.07** | **(f)** | **Formwork for joints in cast in situ concrete invert slabs** | |
| | (i) | Transverse construction joints (type indicated) | square metre ($m^2$) |
| | (ii) | Longitudinal joints (as per drawing) | metre (m) |

Measurement and payment shall be as specified in item 22.07 of the standard specifications with the exception that formwork for construction joints in cast in situ invert slabs in trench conditions as indicated on the drawings, shall be measured and paid for in accordance with section 6200 of the standard specifications. No payment shall be made for formwork to the outside edges of invert slabs (closest to excavated face)."

Add the following to pay item 22.08:

"In addition to the requirements for measuring concrete backfill to rectangular culverts as specified for item 22.08, the following shall apply:

Concrete backfill shall be measured to the actual dimensions of the precast units, i.e. actual volumes between ribs and haunches shall be taken into account. For the purpose of calculating concrete backfill quantities, the horizontal dimensions of the concrete backfill on the outside of the culvert(s) (closest to

excavated face), shall be taken as 100mm maximum irrespective of what type or make of precast portal is used or the actual width of the excavation.

The width of the concrete backfill between portals in the case of multiple culverts, shall be taken as 80mm for precast units with a leg height of 1500mm and 100mm for precast units with a leg height exceeding 1500mm. The vertical dimensions, in both cases, shall be equal to the height of the portal".

Add the following new items:

**"ITEM** **UNIT**

**B22.29** **Tie bars for joining in situ concrete invert slabs to inlet and outlet structures, as indicated on the drawings (Type, diameter and length indicated)** Number (No.)

The unit of measurement shall be the number of tie bars installed as specified and indicated on the drawings.

The tendered rate shall include full compensation for supply and installation of the tie bars.

**ITEM** **UNIT**

**B22.30** a) Preparation and compaction of in-situ bedding material to 90% of Mod. AASHTO density (depth indicated) cubic metre ($m^3$)

b) Extra over sub-item B22:30(a) for compaction to 93% of Mod. AASHTO density (depth indicate) cubic metre ($m^3$)

The unit of measurement shall be the cubic metre of material ripped and compacted as specified.

The tendered rate shall include full compensation for the ripping of the in-situ material to the specified width and depth, wetting of the material to such an extent that the specified density can be achieved.

**ITEM** **UNIT**

**B22.31** **Dewatering and keeping dry of culvert excavations**

The unit of measurement shall be the number of culverts constructed. The tendered rate shall be full compensation for dewatering and keeping dry of the culvert excavations until the backfill is completed.

Payment shall be as follows:

(i) 80% of the payment shall be made after the barrel of the culvert has been constructed and backfilled.

(ii) Remaining 20% of the payment shall be made after the wingwalls have been constructed and backfilled.

**ITEM** **UNIT**

**B22.32** **Cutting of concrete pipes**

a) Diameter indicated Number (No.)

The unit of measurement shall be the number of pipes that have been cut. The tendered rate shall be full compensation for the cutting, by means of mechanical saw (angle grinder) and finishing off of the pipes for the specific angle of skew at which the pipes must be laid.

Cutting of pipes shall only be paid for if the headwall of the wingwalls are at such a skew angle in respect to the centre line of the pipes that cutting is required and where non-standard lengths are required. The maximum skew angle at which pipes are allowed to be cut shall be 30 degrees and the minimum length of pipe, measured along the shortest side, shall be 1,5m."

Classification of soft/hard materials as well as all quantities shall be agreed upon and finalised as the work progresses.

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# SECTION 2300 : CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS

## B2301 SCOPE

Add the following:

"The position and length of the following types of concrete kerbs and channels are indicated on the geometric layout plans, typical drawings and on the drainage plans.

| | | |
|---|---|---|
| Type A | : | In situ concrete channel, 0,8m wide on fills |
| Type B | : | Precast concrete kerbing, semi-mountable (SABS 927-1969) |
| Type C | : | In situ concrete kerbing at intersections |
| Edge beam | : | In situ concrete kerbing at farm access and bus stops |
| Type E, F1 & F2 | : | In situ concrete "V"-shaped channels in side drains and open drains." |

## B2302 MATERIAL

Add the following new subclauses:

**(e) Metal pipes**

"Metal pipes down side slopes shall comply with the requirements of clause 2203 of the standard specifications."

## B2304 CONSTRUCTION

**(d) Slip form kerbing**

Add the following:

"Slip-form kerbing shall under no circumstances be allowed."

**(e) Cast in situ kerbs and channels**

Add the following:

"Forming and templates used to form joints between alternate sections shall be of steel plate of which the thickness shall not be less than 5mm."

Add the following new subclauses:

**(i) Construction sequence**

Replace paragraphs (i), (ii) and (iii) with the following:

"In all cases where kerbing and/or channelling adjoin the bituminous surface of the road, the kerbing and/or channelling may only be constructed after the bituminous surface has been completed.

Before commencing with the kerbing and/or channelling, the surfacing and the base, shall be accurately cut to line with a mechanical saw to a minimum depth of 75mm. After excavation the concrete shall then be cast against the cut surface without formwork. All material outside the cut line must be carefully

removed to the required thickness of concrete without damaging the edge before commencing with the casting of the concrete. No payment shall be made for repair work as instructed by the Employer's Agent to damage caused by the cutting/excavating process of surfacing and base layers. Any concrete spilt onto the surfacing shall immediately be removed and cleaned. Where so required by the Employer's Agent, the contractor shall, without any additional compensation, paint emulsion over the stained surface.

Add the following subclause:

**(k) Formwork and finish**

"Formwork and finish of concrete kerbs shall comply with the requirements of section 6200. All visible edges on the sides or at joints of cast in situ concrete kerbs or channels shall be rounded with a rounding tool."

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## SECTION 3100 : BORROW MATERIALS

### B3102 NEGOTIATIONS WITH OWNERS AND AUTHORITIES

Add the following to sub-clause 3102(a):

"Arrangements regarding to access to borrow pits and the alignment of haul roads shall be made between the contractor and the owners of the land on which borrow pits are situated. The Employer's Agent's representative on site shall be present at all such negotiations, which shall be confirmed in writing by the contractor. All costs involved with such negotiations as well as the requirements contained in clause 3102 and clause 1225 of the specifications shall be borne entirely by the contractor."

### B3103 OBTAINING BORROW MATERIALS

**(a) General**

Add the following:

"The expropriation and compensation for land from which borrow materials is obtained shall be negotiated and paid for by the employer."

**(b) Use of borrow materials**

Add the following to the second paragraph of this subclause:

"Compensation to owners and arrangements with owners for taking material from alternative borrow pits proposed by the contractor shall be the contractor's responsibility and entirely at his own expenses."

### B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS

**(c) Excess overburden**

Add the following:

"All excess overburden removed at borrow pits shall be replaced over the entire area of the borrow pit after initial shaping has been undertaken in an even layer. Payment for this requirement shall be deemed to be included in pay item 31.01

**(f) Protecting borrow pits**

Add the following:

"It is a requirement of the contract that each borrow pit or pits shall be provided with fencing around the perimeters, including a access gate, of the borrow areas, including the supply of danger warning signage fixed to the fencing, visible at all sides approaching the borrow pit area. The fencing shall be erected prior to entering the land for borrowing purposes and shall on final finishing of the borrow areas as specified by the employer, be dismantled and removed or left in-place as instructed by the employer. Payment for fencing around borrow pits shall be made in accordance with the stipulations of section 5500 in these specifications."

In addition to fencing, Security Guards shall be supply on a 24 hour, 7 days a week basis, with full time communication to the Site Manager or site camp for the duration of the contract and activities at the borrow pits."

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Add the following new subclause:

**"(h) Haul roads**

Haul roads to designated borrow pits along the road shall be constructed along alignments as instructed by the Employer's Agent and shall be maintained at the contractor's own cost to the satisfaction of the Employer's Agent."

**B3105 FINISHING-OFF BORROW AREAS AND HAUL ROADS**

Add the following to this clause:

"Should the employer, Employer's Agent or any other authority approved by the Employer's Agent, require a higher standard of shaping and finishing off of borrow pits than specified in the standard specifications, measurement and payment for such extra work shall be made using daywork items as scheduled under this section."

**B3109 MEASUREMENT AND PAYMENT**

Change item 31.01 to read as follows:

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B31.01** | **Excess overburden :** | |
| (a) | Depth up to and including 0,5m | cubic meter ($m^3$) |
| (b) | Depth exceeding 0,5m and up to 1,0m | cubic meter ($m^3$) |

Measurement and payment shall be as specified for item 31.01 of the standard specifications with the abovementioned depth ranges applicable."

Add the following new item:

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B31.04** | **Compensation to landowners:** | |
| (a) | Prime cost sum for compensation to landowners | prime cost (PC) sum |
| (b) | Handling cost and profit in respect of sub-item B31.04(a) above | percentage (%) |

Measurement and payment shall be in accordance with the provisions of clause 48(2) of the general conditions of contract. Payment to the landowner shall be made within fourteen (14) days after such order has been given by the Employer's Agent. The contractor shall provide detailed proof of payment before payment shall be certified to the contractor.

The tendered percentage is an extra over percentage on the amount actually spent under sub-item B31.04(a) which shall include full compensation for the handling costs and profit of the contractor."

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## SECTION 3200 : SELECTION, STOCKPILING AND BREAKING-DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS

### B3204 BREAKING-DOWN THE MATERIAL

**(a) Initial breaking-down of the material in cuttings, borrow pits and existing pavement layers**

Add the following to the table in the second paragraph of this subclause:

"Pioneer layers - 500mm maximum dimension

Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve."

**(b) Further breaking-down of pavement material**

Add the following:

"Material used for the construction of selected, and wearing course layers shall be broken down by means of normal grid-rolling or additional normal grid-rolling to such an extent that the compacted pavement layer shall contain material of which 95% of the aggregate size shall not exceed 65mm. All oversize material, after breaking-down, shall be removed".

### B3209 PLACING AND COMPACTING THE MATERIALS IN LAYER THICKNESSES IN EXCESS OF 200mm AFTER COMPACTION

Add the following new subclause:

**(d) Pioneer layer**

"The maximum size rock used in pioneer layers shall be 500mm and the layer thickness before compaction shall not be more than one-and-a-half times the maximum actual size of the rock. Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve. Pioneer layer processing and compaction shall be as specified in subclause 3307(c) of the standard specifications".

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**FOR**
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## SECTION 3300 : MASS EARTHWORKS

### B3305 TREATING THE ROADBED

**(a) Removing unsuitable material**

Add the following to the third paragraph:

"For the purpose of this contract, excavation and removal of in-situ clayey material over areas where the road is in a fill condition, shall be classified as removal of unsuitable material, irrespective of the stability or moisture condition of the in-situ material".

**(c) Preparing and compacting the roadbed**

Delete the last sentence of the first paragraph “If necessary, roadbed…….depth of compaction” and replace as follows:

“Where demarcated by the Employer’s Agent, prior to the roadbed being scarified, the excess in situ material forming part of the present roadway, and within the limits of the roadbed, and in close proximity of the layer works, but falling within the limits of the layerworks, shall be bladed to controlled level in order to achieve the required level and necessary depth of compaction.”

### B3307 FILLS

**(c) Constructing a pioneer layer**

Add the following to the first paragraph:

"For the purpose of this contract, pioneer layers shall be completed by means of eight-pass roller compaction using vibratory rollers as specified in subclause 3304(b) of the standard specifications.”

**(d) Benching**

Add the following:

“Benching of fill and pavement layer material is required to be undertaken into the existing fill embankments and pavement layers. No additional payment shall be made over and above the normal pay items applicable to earthworks and pavement layers where benching is required for widening of the existing road formation. Benching shall be undertaken as shown on the drawings.

It is a requirement that benching shall always be started at the bottom of the existing fill progressing to the top of the formation. The dimensions and details of benching are shown on the drawings.”

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**FOR**
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## B3308 FINISHING THE SLOPES

### (d) General

Add the following:

"Where existing cut and fill slopes are excessively eroded or where slippages occurred in slopes, the slopes are to be reinstated by means of backfilling with suitable gravel material. All loose material and vegetation shall first be removed from the eroded cut and fill slopes before backfilling may commence from the bottom of the cut or fill. The backfill material shall be benched into the existing slopes and compacted to 90% of modified AASHTO density, using suitable small compaction equipment e.g. Bomag walk-behind rollers or hand-held compaction tools. Benching shall be executed to the dimensions shown on the drawings. Upon completion of the backfilling operation the cut and fill slopes shall be neatly finished as specified."

## B3312 MEASUREMENT AND PAYMENT

Add the following sub-item to item 33.10:

| "ITEM | | | UNIT |
|---|---|---|---|
| B33.10 | (e) | Extra over sub-items 33.10(a), (b) and (d) for blading to controlled levels (existing road) | cubic metre ($m^3$) |

The unit of measurement in respect of the material bladed as specified in subclauses 33.05 (c) shall be the cubic metre of material bladed, measured in the original position before blading, in accordance with the method of average end areas.

The tendered rate shall include full compensation for blading of such material to level.

Only material bladed on the instruction of the Employer's Agent for exposing the underlying roadbed material for treatment will be measured and paid for as described above."

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## SECTION 3400 : PAVEMENT LAYERS OF GRAVEL MATERIAL

### B3402 MATERIALS

**(a) General**

Add the following:

"Material requirements for gravel pavement layers are in accordance with TRH4 and shall be indicated on the drawings."

### B3405 CONSTRUCTION TOLERANCES

**(e) Cross-section**

Delete the second paragraph and replace with the following:

"The normal crossfall of the road wearing course where the road is in a straight horizontal alignment, is specified as 3% as shown on the drawings.

At any cross-section the measured crossfall between any two points shall at least be 2,8% and not more than 3,5%. At any cross-section the actual level at any point shall not be higher than 10mm above the computed level from the cross-section as specified and the actual level, if lower than the computed level, shall not be lower by more than that derived from the specifications for longitudinal grade and crossfall deviations."

**(f) Surface regularity**

Add the following:

"Where transverse construction joints in base layers are made between newly and previously constructed sections, the contractor shall exercise level control at such joints by installing level poles at 5m intervals on either side of the joint of the layer covering at least a 30m length into the newly constructed section."

### B3406 QUALITY OF MATERIALS AND WORKMANSHIP

Add the following:

"Test results and measurements shall be assessed by the Employer's Agent according to the provisions of Section 8300 of the standard specifications".

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# SECTION 5200 : GABIONS

## B5201 SCOPE

Add the following paragraph

"This section also covers the removal, dismantling and stacking of existing gabion work, and the reuse of these materials where authorised by the Employer's Agent."

## B5203 CONSTRUCTION OF GABION CAGES

### (a) General

Add the following new sub-clause:

"(iii) Reno mattresses or similar may be used as alternative to gabion boxes. These Reno mattresses are to be manufactured of 80mm x 100mm mesh (2,5mm diameter wires, diaphragm spacing 0,6m).

## B5204 CONSTRUCTING GABIONS

### (c) Assembly

Delete and substitute with:

### (c) Assembly, erection and stretching

#### (i) Assembly

"Prior to assembly, the gabion material shall be opened out flat on the ground and stretched to remove any kinks and bends. The gabion boxes shall then be assembled individually by raising the sides, ends and diaphragms ensuring that all creases are in the correct position and that the tops of all four sides are even. The four corners of the gabion boxes shall be laced first followed by the edges of internal diaphragms to the sides. In all cases lacing shall commence at the top of the box by twisting the end of the lacing wire around the selvages. It shall then be passed round two edges being joined, through each mesh in turn and securely tied off at the bottom. The ends of all lacing wire shall be turned to the inside of the box on completion of each lacing operation.

#### (ii) Erection

Only assembled boxes, or groups of boxes, shall be positioned in the structure. The side, or end, from which work is to proceed, shall be secured to either completed work or by rods or stakes driven into the ground at the corners. These must be secured and reach at least to the top of the gabion box. Further gabions shall then be positioned in the structure as required, each being securely laced to the preceding one at all corners and diaphragm points.

#### (iii) Stretching

On completion of erection of a suitable length of gabion, the gabion boxes shall be stretched using a wire strainer or winch of at least one ton capacity firmly secured to the free end of the assembled gabion boxes.

Whilst under tension the gabion boxes shall be securely laced along edges (top, bottom and sides) and at diaphragm points, to all adjacent boxes and shall thereafter be filled."

**(d) Rock filling**

Add the following new sub-sub-clause:

**(iii) General**

"Filling shall be carried out only whilst gabion boxes are under tension. Filling material shall consist of rock of size not less than 120mm and not greater than 250mm so placed to produce a neat face and line with a minimum of voids.

Internal horizontal bracing wire shall be provided at 500mm vertical centres or such spacing to ensure a ratio of four to every 1m³ of filling. These bracing wires shall be wrapped around two mesh wires and extended from front to back so positioned to ensure a neat face and line free of excessive bulges and depressions. Gabion boxes shall be filled in stages and horizontal bracing wires inserted as filling is brought up.

Similar bracing wires used vertically shall be provided in 0,5mm deep gabions at 330mm horizontal centres where water falls directly onto gabions or where a neat face is required.

Tension on the gabion boxes shall be released only when sufficiently full to prevent the mesh from slackening.

Gabion boxes shall be overfilled by 20 to 50mm above their tops to allow subsequent settlement of the filling."

Add the following new sub-clauses:

**(e) Final wiring**

"Closing and wiring down of lids shall proceed as soon as possible after filling operations and certainly in the likelihood of storms or floods during construction. The wiring down shall consist of wrapping around wire at such intervals as required or specified.

Lids shall be stretched tight over the filling with bars and wired down securely through each mesh along all edges, ends and diaphragms. The ends of all tying and bracing wires shall be turned into the gabion box on completion of all lacing operations.

Tightness of mesh, well packed filling and secure lacing is essential in all structures."

**(f) Removal, dismantling and stacking of gabions**

"Existing gabions, either damaged or not, that require to be removed or moved to a new location shall be dismantled. Material not required for re-assembly or unsuitable for re-use shall be neatly stacked at approved locations in accordance with the Employer's Agent's instructions. Payment will be made only for gabions removed in accordance with the written instruction of the Employer's Agent.

Where gabions require moving, or as declared suitable by the Employer's Agent are re-usable, the contractor shall re-use all the material, plus supply such new materials as may be required to re-assemble the gabion again to the standard specification for new gabions."

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**B5205 MEASUREMENT AND PAYMENT**

Add the following new items:

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B52.05** | **Removal and dismantling of existing damaged gabions** | Cubic metre (m³) |

The unit of measurement for the removal and dismantling of existing damaged gabions shall be the cubic metre of each type of gabion removed and dismantled on the instruction of the Employer's Agent.

The tendered rate shall include full compensation for removing and dismantling gabions, and stacking all the materials. The tendered rate shall further include for the disposal of unsuitable material.

| **ITEM** | | | **UNIT** |
|---|---|---|---|
| **B52.06** | **Gabions constructed from re-usable materials** | | |
| | a) | Galvanised gabion boxes: | |
| | | (i) 4m x 1m x 1m | Cubic metre (m³) |
| | | (ii) 3m x 1m x 1m | Cubic metre (m³) |
| | | (iii) 2m x 1m x 1m | Cubic metre (m³) |
| | b) | Galvanised gabion mattresses | |
| | | (i) 0.3m Deep | Cubic metre (m³) |

The unit of measurement for re-assembling gabions from re-usable materials shall be the cubic metre of rock filled cages for each type of gabion that is re-usable and approved by the Employer's Agent, as specified in the standard specification.

The tendered rate shall include full compensation for using the existing wire cages and rock fill, and for supplying new binding and connecting wires, the assembling and filling of the cages, and any other work for the re-construction of the gabions to conform to the specifications."

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## SECTION 5600 : ROAD SIGNS

### B5601 SCOPE

"This section also covers the supply and erection of permanent danger plates at culverts and bridges at the locations indicated on the drawings or as directed by the Employer's Agent."

### B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS

**(a) Road signboards**

Add the following:

"The contractor shall make every effort to ensure that signboards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Employer's Agent with a 100mm x 150mm colour photograph of each sign face for approval of the correctness of the legend. Such approval will not imply final acceptance of the board. If the Contractor is in any doubt as to the correctness of the sign detail, the sign designer shall be contacted for verification."

**(a) (ii) Steel profile road signboards**

Add the following:

"Where the letter or legends cross the horizontal joints of the sign panels, the letter shall be cut on the joint and both ends folded around the radius.

Retro-reflective material to adjoining Chromadek panels on a sign shall be practical visual match of the specified colour."

### B5604 ROAD SIGN FACES AND PAINTING

Add the following new subclause:

**"(e) Application of retro-reflective material**

All sign faces shall be faced with diamond grade retro-reflective material. Painted front sign faces shall not be used.

Where applied to Chromadek sections, retro-reflective material shall be applied as specified for aluminium section in Clause 5603(d) of the Standard Specification, and of Clause B5603(a)(ii) of this project Specification."

### B5605 STORAGE AND HANDLING

Add the following:

"The following shall not be allowed on the sign face:

Drilling of holes, except for the fastening of overlays
Application of any form of adhesive
Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material
Covering the sign face with an impermeable material that does not allow free circulation of air."

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## B5606 ERECTING ROAD SIGNS

### (c) Erection

Add the following:

"After erection the signboard shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material's manufacturer.

All vegetation obstructing the new or replaced sign board shall be removed and disposed of as instructed by the Employer's Agent."

## B5608 DISMANTLING, STORING AND RE-ERECTING EXISTING ROAD SIGNS

Add the following:

"Existing overhead and ground mounted road signs that are being replaced by new signs shall be dismantled and disposed of by the Contractor. Where possible the dismantling of the signs shall not be before the replacement sign is erected and displayed. Where dismantling of the sign is required before erection of the replacement sign, the dismantling shall not take place until immediately before work is to commence on the replacement, and the replacement shall be completed and the new sign displayed as soon as possible thereafter (within 72 hours).

Dismantling shall include sign panels and ground mounted sign supports.

Ground mounted sign supports shall be cut off just below ground level. Material excavated for removal of buried poles shall be replaced, and any depression made good using excess material from excavation for new signs.

Pay items are provided in the Bill of Quantities. Payment will differentiate between different types of sign panels."

## B5609 MEASUREMENT AND PAYMENT

| ITEM | | UNIT |
|---|---|---|
| B56.01 | Road sign boards with painted or coloured semi-matt background. Symbols, lettering, and borders in diamond grade retro-reflective material, where the sign board is constructed from:<br><br>Amend the last two lines of the second paragraph to read:<br><br>"completion, delivery, installation of the road sign board complete as specified, and the removal and disposal of all vegetation obstructing the motorists' view of the new or replaced sign board." | |

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Add the following pay items:

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B56.10** | **Danger plates at culverts/structures** | |
| (a) | Type A at stormwater culverts (size indicated) | number (No.) |
| (b) | Type B at bridges (size indicated) | number (No.) |

The unit of measurement shall be the number of danger plates provided and erected in accordance with the drawings.

The tendered rate shall include full compensation for all labour and material, painting, posts, excavation, backfilling with soil etc., as may be necessary for completing the work in accordance with the details shown on the drawings."

| **"ITEM** | | **UNIT** |
|---|---|---|
| **B56.11** | **Replace marker boards on existing kilometre posts** | number (No) |

The unit of measurement shall be the number of reference marker boards provided and attached to existing kilometer posts in accordance with the drawings.

The tendered rate shall include full compensation for the manufacturing and supplying of the completed marker boards, for attaching the marker board to existing posts along the route and for all materials equipment, labour, nuts and bolts necessary for attaching the marker board as specified."

The tendered rate shall include full compensation for all the labour and material, painting, retro-reflective material, posts, excavation, backfilling, etc. as may be necessary for completing the work in accordance with the details shown on the drawings."

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## SECTION 5700 : ROAD MARKINGS

### B5706 SETTING OUT THE ROAD MARKINGS

Add the following:

"Where road markings are to be replaced after milling/overlay seal, it is essential that all existing barrier lines and other road marking lines be accurately referenced before commencement of milling or other operations which will obliterate the existing road markings. The position of barrier lines shall be re-assessed on site by the Employer's Agent before the Contractor commences with the road marking."

### B5707 APPLYING THE PAINT

Add the following:

"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 onsite or is required to move within the site."

### 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."

Add the following new clause:

### "B5715 REMOVAL OF EXISTING ROAD STUDS

The existing road studs shall be removed from the road surface prior to milling."

### B5714 MEASUREMENT AND PAYMENT

| ITEM | | UNIT |
|---|---|---|
| B57.06 | Setting out and pre-marking the lines (excluding traffic island markings, lettering and symbols) | |

Add the following:

"Referencing of existing barrier lines and other road marking lines prior to milling and other operations, shall be included in the tendered rate for setting out and pre-marking."

| ITEM | | UNIT |
|---|---|---|
| B57.05 | Roadstuds | |

Add the following after the first sentence of the second paragraph:

"No additional payment will be made should temporary or permanent road studs be replaced if lost or broken during the construction period or the maintenance period."

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## SECTION 5900 : FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS

### B5902 FINISHING THE ROAD AND ROAD RESERVE

Add the following to the first paragraph:

"The contractor shall pay special attention to the collection and removal of all waste materials originating from the construction activities. All materials trimmed or excavated from the road shall be collected and removed from the road reserve to the satisfaction of the Employer's Agent.

This requirement shall be deemed to be incorporated in the tendered rates for item 59.01 of the bill of quantities or such other items as the contractor may decide upon.

The Employer's Agent may order additional finishing of the road reserve which will entail the collection and disposal of loose rocks etc. Payment for this work will be made under daywork items included in section 5900 of the bill of quantities as described in section 1800 of these project specifications."

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**FOR**
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## SECTION 6100 : FOUNDATIONS FOR STRUCTURES

### B6106 FOUNDING

Add the following paragraph :

"Where founding takes place in soils or at "founding level" before the placing of foundation fill the in-situ material in the bottom of the excavation shall be compacted to a density of 90% or 93% of modified AASHTO density as directed by the Employer's Agent. The depth of preparation and compaction of founding material shall be specified by the Employer's Agent. Allowance for measurement and payment for this work is made in the bill of quantities under this section."

### B6109 BACKFILL AND FILL NEAR STRUCTURES

**(a) General**

Add the following:

(iv) "During backfilling within 1,0m of any concrete structure, or as directed by the Employer's Agent, only hand operated mechanical compaction equipment shall be used to achieve the required density."

### B6109 FOUNDATION FILL

Add the following after the 3rd paragraph:

"Granular foundation fill shall be constructed from selected subgrade material.

Add the following after the 6th paragraph:

Concrete screeds shall extend 200mm beyond the horizontal dimensions of all footings to facilitate the placing of formwork, unless otherwise directed by the Employer's Agent.

In the case of structures where excessive ground water is encountered, the screed shall extend over the full plan area of the base of the excavation. Payment shall be made for the quantity of concrete calculated as the product of the specified thickness of the screed and the actual area of screed specified by the Employer's Agent up to a maximum area of the product of the neat footing length plus 750mm and the neat footing width plus 750mm."

### B6115 MEASUREMENT AND PAYMENT

Add the following new items:

| "ITEM | | | UNIT |
|---|---|---|---|
| B61.51 | (a) | Preparation and compaction of in situ founding material to 90% Mod. AASHTO density (depth indicated) | cubic metre ($m^3$) |
| | (b) | Extra over item B61.51(a) for compaction to 93% of Mod. AASHTO density (depth indicated) | cubic metre ($m^3$) |

The unit of measurement shall be the cubic metre of founding material prepared and compacted to the density as specified in accordance with Clause B6106 of these project specifications.

The tendered rates shall include full compensation for shaping, scarifying, mixing of in-situ and imported material if required, and preparing and compacting the material as specified."

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## SECTION 6400 : CONCRETE FOR STRUCTURES

### B6402 MATERIALS

**(a) Cement**

Replace this sub-section with the following:

“Refer to section 1142 for specification of cement.”

CEM I 32,5, CEM II A-S 32,5, CEM II/A-V 32,5, or CEM III A may be used for the manufacture of reinforced concrete members.

### B6404 CONCRETE QUALITY

**(b) Strength concrete**

Add the following paragraph:

“The cement content for any class of structural concrete or mass concrete used in structures shall not be less than 300kg/m³ of concrete.

The contractor must provide the Employer’s Agent with complete mix designs and materials for strength concrete at least six (6) weeks before the first concrete is cast on the project".

### B6405 MEASURING THE MATERIALS

**(c) Aggregates**

Add the following:

"All concrete for structures shall be manufactured by mechanical mass batching unless authorised otherwise by the Employer’s Agent for minor concrete structures or for labour-intensive methods."

### B6407 PLACING AND COMPACTING

**(a) General**

Add the following after the third paragraph:

"Concrete shall only be placed up to 20:00 at the latest. Under exceptional circumstances the Employer’s Agent may allow night work on condition that proper lighting arrangements can be made and a new and rested shift for night work is provided and ambient temperatures are such as to not adversely affect the setting of the concrete."

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## C3.3.4 PROJECT SPECIFICATIONS : ADDITIONAL SPECIFICATIONS

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# C3.3.4.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993 : HEALTH AND SAFETY SPECIFICATION

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### C3.3.4.1.1 Introduction

In terms of the Construction Regulation 4(1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, Blouberg LocalMunicipality, as the Client, is required to compile a Health & Safety Specification for any intended project and provide such specification to any prospective bidders.

The Client's further duties are as in C3.5.1.3.1.1. below and in the Construction Regulations, 2014.

This specification has as objective to ensure that Principal Contractors entering into a Contract with the Blouberg LocalMunicipality 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.

### C3.3.4.1.2 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.

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## C3.3.4.1.3 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 BLOUBERG LOCAL 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.

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 BLOUBERG LOCAL MUNICIPALITY before mobilisation on site commences.

Despite the Risk Assessments listed in Annexure 3, 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.

(ii) 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 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 BLOUBERG LOCAL 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 19960 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) Oveall Supervision and Responsibility for OH&S

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* 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 OHSAct |
|---|---|
| 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) |
| 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 | (GeneBlouberg Local Municipality Safety Regulation 3) |
| Fire Equipment Inspector | (Construction Regulation 27) |
| Formwork & Support work Supervisor | (Construction Regulation 10) |
| Hazardous Chemical Substances Supervisor | (HCS Regulations) |
| Incident Investigator | (GeneBlouberg Local Municipality Admin Regulation 29) |
| Ladder Inspector | (GeneBlouberg Local Municipality 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 | (GeneBlouberg Local Municipality 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) |
| Tunneling Supervisor | (Construction Regulation 13) |
| Vessels under Pressure Supervisor | (Vessels under Pressure Regulations) |
| Working on/next to Water Supervisor | (Construction Regulation 24) |
| Welding Supervisor | (GeneBlouberg Local Municipality 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 BLOUBERG LOCAL MUNICIPALITY together with concise CV's of the appointees. All appointments must be officially approved by BLOUBERG LOCAL MUNICIPALITY. Any changes in appointees or appointments must be communicated to BLOUBERG LOCAL MUNICIPALITY forthwith.

The Principal Contractor must, furthermore, provide BLOUBERG LOCAL 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.

In addition BLOUBERG LOCAL 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)

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
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) (GeneBlouberg Local Municipality 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 GeneBlouberg Local Municipality 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

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* 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
* 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

BLOUBERG LOCAL MUNICIPALITY will conduct an audit on the OH&S file of the Principal Contractor from time-to-time.

(e) 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 BLOUBERG LOCAL MUNICIPALITY 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 BLOUBERG LOCAL 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) GeneBlouberg Local Municipality 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 geneBlouberg Local Municipality induction session by the Client

All employees of the Principal and other Contractors to be in possession of proof of GeneBlouberg Local Municipality Induction training.

(ii) Site Specific Induction Training

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):

* GeneBlouberg Local Municipality 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 (GeneBlouberg Local Municipality Safety Regulations 3)

* Storekeeping Methods & Safe Stacking (Construction Regulation 26)

* Emergency, Security and Fire Co-coordinator

(iv) Awareness & Promotion

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 BLOUBERG LOCAL MUNICIPALITY at least on a basis to be determined between the two parties.

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 BLOUBERG LOCAL MUNICIPALITY OH&S meetings and

a list of dates, times and venues will be provided to the Principal Contractor by BLOUBERG LOCAL MUNICIPALITY.

(i) Checking, Reporting and Corrective Actions

(i) Monthly Audit by Client (Construction Regulation 1(d))

BLOUBERG LOCAL 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 BLOUBERG LOCAL MUNICIPALITY:

BLOUBERG LOCAL 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 BLOUBERG LOCAL 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.

(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 GeneBlouberg Local Municipality Administrative Regulation 8 of the OHS Act)

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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 BLOUBERG LOCAL MUNICIPALITY within two days and to the Provincial Director of the Department of Labour within seven days (Section 24 of the Act & GeneBlouberg Local Municipality 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 BLOUBERG LOCAL MUNICIPALITY and the Provincial Director of the Department of Labour forthwith by telephone, telefax or E-mail.

The Principal Contractor is required to provide BLOUBERG LOCAL MUNICIPALITY with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

The Principal Contractor is required to provide BLOUBERG LOCAL 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 (GeneBlouberg Local Municipality 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 BLOUBERG LOCAL MUNICIPALITY reserves the right to hold its own investigation into an incident or call for an independent external investigation.

**C3.3.4.1.4 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 BLOUBERG LOCAL 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 (GeneBlouberg Local Municipality Safety Regulation 3)

The Principal Contractor must provide First Aid equipment (including a stretcher) and have qualified First Aider/s as required by GeneBlouberg Local Municipality Safety Regulation 3 of the OHS Act.

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 BLOUBERG LOCAL MUNICIPALITY, 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.

### C3.3.4.1.5 Measurement and Payment

Payment for the contractor's obligations in respect of the Occupational Health and Safety act and Construction Regulations shall be made through three payment items described below. The three payment items together shall include full compensation for all personnel (including a dedicated full time Construction Safety Officer), cost and incidentals in respect of compliance with the enforcement of the Health and Safety Specifications, which shall include for the compilation, presentation, implementation and maintenance of the Health and Safety Plan as contemplated. In tendering rates for the three items the contractor shall ensure that the sum of the amounts for the three items shall not be less than one percent (1%) of the Tender Amount.

| Item | | Unit |
|---|---|---|
| **C1.1** | **Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations** | Lump Sum |

The full amount will be paid in one instalment only once:-

(a) The contractor has notified the Provincial Director of the Department of Labour in writing of the project.

(b) The contractor has made the required initial appointments of employees and sub-contractors.

(c) The client has approved the contractor's Health and Safety Plan.

(d) The contractor has set up his Health and Safety File.

| Item | | Unit |
|---|---|---|
| **C1.2** | **Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations** | Month |

The tendered monthly amount shall represent full compensation for that part of the contractor's geneBlouberg Local Municipality obligations in terms of the Occupational Health and Safety Act and the Construction Regulations which are mainly a function of time. This includes inter alia payment of all costs for the appointment of all staff contemplated in the construction regulations and the transport of employees on site. Payment will be monthly only after payment for Item **C1.1** has been made.

| Item | | Unit |
|---|---|---|
| **C1.3** | **Submission of the Health and Safety File** | Lump Sum |

The tendered lump sum shall represent full compensation for the contractor meeting all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and for the preparation and submission of his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

This amount will be paid only once the contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

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**C3.3.4.1.6 Project/Site Specific Requirements**

**See Annexure 3**

**Annexure 1: Measuring Injury Experience**

**Annexure 2: SHE Risk Management Report**

**Annexure 3. List of Risk Assessments**

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## 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

Manhours Worked

Include:* Hourly Paid Employees

* Sub-contactors (No. of Employees X *220 each)
* Staff (No. of Employees X *220 hours each)

**220 manhours:** 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

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**ANNEXURE 2: EXECUTIVE SHE RISK MANAGEMENT REPORT**

The SAFCEC OH&S committee recently developed the following report in an attempt to standardise 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 geneBlouberg Local Municipalityly 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.

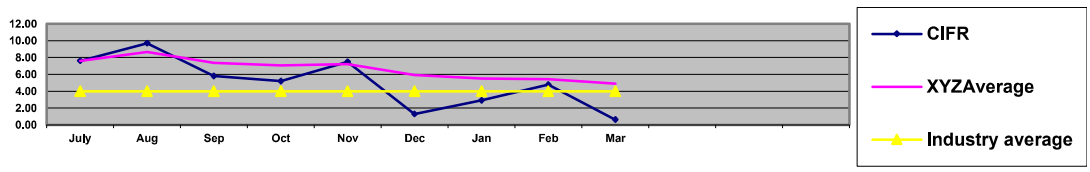
All divisions are eagerly awaiting the final implementation in May of the new electronic SHE Management system that will make the tools to implement the SHE programme available to all management and supervisory staff.

## 2. Incident Statistics

**Compensation Incident Frequency Rate (CIFR)**

CIFR = Total No. of Claims against the Workmen's Compensation Fund X 200 000

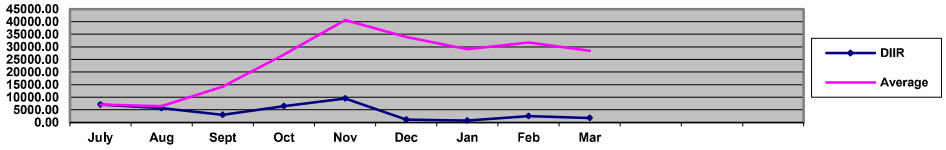
Manhours worked




2.2. Disabling Injury Incidence Rate (DIIR)

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DIIR = No. Disabling Injuries X 200 000
Manhours worked




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%(*) |
| | Job 00786: | Cullinan Head Office | Compliance: 83%(****) |

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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<br>15<br>3 | Induction<br>OH&S Reps<br>Crane Drivers | Internal<br>Consultant<br>External |
| February | 23<br>17 | Induction<br>OH&S Reps | Internal<br>Consultant |
| March | 43<br>9<br>3<br>3 | Induction<br>OH&S Reps<br>Bomag Rollers<br>First Aiders | Internal<br>Consultant<br>Supplier<br>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 AIND 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.

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 Djwaneng 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 Djwaneng (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

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**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
  - 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

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* 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.

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## C3.3.4.2 ENVIRONMENTAL MANAGEMENT PLAN

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### C3.3.4.2.1. 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 GeneBlouberg Local Municipality 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 Agency Limpopo in writing for approval.

The EMP identifies the following:

Construction activities that will impact on the environment.
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.

### C3.3.4.2.2. 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 AgricultuBlouberg Local Municipality 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.

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**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 Agency 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 cultuBlouberg Local Municipality 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 Limpopo Department of Economic Development, Environment and Tourism, 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.

**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.

### C3.3.4.2.3. 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 natuBlouberg Local Municipality 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 Employer's Agent'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 geneBlouberg Local Municipality 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 agricultuBlouberg Local Municipality land and wetlands

GeneBlouberg Local Municipality 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

### C3.3.4.2.4. LEGAL REQUIREMENTS

a) GeneBlouberg Local Municipality

Construction will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integBlouberg Local Municipality 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 geneBlouberg Local Municipality 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.

### C3.3.4.2.5. 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 Employer's Agent 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 Employer's Agent to make a decision. The Employer's Agent 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 Employer's Agent 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 Employer's Agent, but not less frequently than once a month.

The Employer's Agent shall have the authority to instruct the contractor to replace the DEO if, in the Employer's Agent'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.

b) Administration

Before the contractor begins each construction activity the DEO shall give to the Employer's Agent 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 Employer's Agent whenever there is a change or variation to the original.

The Employer's Agent 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 GeneBlouberg Local Municipality 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.

### C3.3.4.2.6. 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;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Agency'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 Employer's Agent when and how he/she intends concluding his environmental training obligations.

### C3.3.4.2.7. 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.

### C3.3.4.2.8. 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 Employer's Agent 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 Employer's Agent 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.

The natuBlouberg Local Municipality 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 Employer's Agent. Only trees and shrubs directly affected by the works, and such others as may be indicated by the Employer's Agent in writing, may be felled or cleared. In wooded areas

where natuBlouberg Local Municipality 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 natuBlouberg Local Municipality 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 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 natuBlouberg Local Municipality 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 Employer’s Agent. 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 Employer's Agent.

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 Employer's Agent. 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.

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 Employer's Agent.

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 Employer's Agent.

The contractor shall provide proof to the Employer's Agent 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 Employer's Agent 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.

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 natuBlouberg Local Municipality 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 Employer's Agent 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 Employer's Agent 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 natuBlouberg Local Municipality 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 2m, and if they are to be left for longer than 6 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 topsoiled 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 Employer's Agent. 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.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the Employer's Agent, 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 Employer's Agent 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.

i) Quarries and borrow pits

The contractor's attention is drawn to the requirement of the Department of MineBlouberg Local Municipalitys 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 Employer's Agent 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 Employer's Agent for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the Employer's Agent. 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 Employer's Agent will assist the contractor in obtaining the necessary approval if requested by the contractor.

Spoil sites will be shaped to fit the natuBlouberg Local Municipality 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. This will include both strip and full sodding. The contractor may motivate to the Employer's Agent for other acceptable stabilising methods. The Employer's Agent 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 Employer's Agent'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 Employer's Agent for his approval, together with the contractor's proposed measures for prevention, containment and rehabilitation against environmental damage.

The areas chosen shall have no natuBlouberg Local Municipalityly 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 Employer's Agent and the relevant Authority is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the Employer's Agent 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 Employer's Agent

In all cases, the Employer's Agent 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

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 Employer's Agent 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 Employer's Agent 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.

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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 MineBlouberg Local Municipalitys 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 Employer's Agent 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 Employer's Agent 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, 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 Employer's Agent. The Designated Environmental Officer will assess the situation in consultation with the Employer's Agent 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 Employer's Agent. Areas cleared of hazardous waste shall be re-vegetated according to the Employer's Agent'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 Employer's Agent. 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 Employer's Agent 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 Employer's Agent of such discovery. The South African Heritage Research Agency (SAHRA) 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 GeneBlouberg Local Municipality Condition of Contract Subclause 4.24 as amended by Particular Condition).

ii) Graves and middens

If a grave or midden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/middens shall be stopped and the Employer's Agent informed of the discovery. SAHRA should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The Employer will be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred. (Read with COLTO GeneBlouberg Local Municipality 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 MineBlouberg Local Municipalitys 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.

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### C3.3.4.2.9. RECORD KEEPING

The Employer's Agent and the DEO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the Employer's Agent 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 Employer's Agent 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.

### C3.3.4.2.10. 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.

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 |
| • Pollution of water sources. | : | R 10 000 per incident |
| • Unauthorized blasting activities. | : | R 5 000 per incident |
| • Uncontrolled/unmanaged erosion (plus rehabilitation at contractor's cost). | : | R5 000 per incident |
| • Damage to sensitive vegetation within "no-go" areas of vegetation damaged, plus rehabilitation thereof at contractors cost | : | R2 000 per m² |

The Employer's Agent's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

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**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 |
| • Any person related to the contractor's operations found within the designated "no-go" areas | : | R 500 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 |

**d) Contract violations:**

| | | |
|---|---|---|
| • Road signs not according to specifications | : | R 10 000 per incident |
| • Safety on borrow pits not according to instructions | : | R 10 000 per incident |
| • Not completing the daily site diary | : | R 500 per incident |
| • Not complying with OH&S regulations | : | R 10 000 per incident |
| • Request file not up to date | : | R1 000 per incident |
| • Test results not submitted in time | : | R1 000 per incident |
| • Costruction vehicles driving on completed section of the works | : | R 10 000 per incident |

The Employer's Agent'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.

### C3.3.4.2.11. MEASUREMENT AND PAYMENT

The cost of complying to this specification shall be deemed to be included in the rates tendered for this project.

| 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) |

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(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) | GeneBlouberg Local Municipality damage to sensitive environments | |
| (c) | Damage to cultuBlouberg Local Municipality and historical sites number (No) | |
| (d) | Pollution of water sources | number (No) |
| (e) | Unauthorised blasting activities | number (No) |
| (f) | Uncontrolled/unmanaged erosion per incident, depending on environment impacts, plus rehabilitation at contractor's cost) | number (No) |

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 cultuBlouberg Local Municipality 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.

| Item | | Unit |
|---|---|---|
| **C100.04** | **Penalty for less serious violations** | |
| • | Road signs not according to specifications : | number (No) |
| • | Safety on borrow pits not according to instructions : | number (No) |
| • | Not completing the daily site diary : | number (No) |
| • | Not complying with OH&S regulations : | number (No) |
| • | Request file not up to date : | number (No) |

- Test results not submitted in time : number (No)
- Costruction vehicles driving on completed section

of the works : 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 Employer's Agent'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.

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**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<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 1400 | Housing, Offices and laboratories | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage<br>Noise/lights | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil<br>Demarcate sensitive areas | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 1500 | Accommodation of Traffic | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage<br>Noise/lights<br>Dust control | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil<br>Demarcate sensitive areas<br>Maintenance of windrows | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 1600 | Overhaul | Spillage<br>Storage<br>Noise/lights<br>Dust control<br>Exhaust fumes<br>Washing waste | Turning circles<br>Parking areas | Restrict access to sensitive areas | Protection of indigenous vegetation<br>Preserve topsoil | |
| 1700 | Clearing and grubbing | Waste treatment<br>Hazardous waste<br>Water supply<br>Noise /lights<br>Dust control | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Protection of indigenous vegetation<br>Preserve topsoil | |

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| SECTION | CONTENTS | ENVIRONMENTAL IMPACTS | | | | |
|---|---|---|---|---|---|---|
| | | POLLUTION TYPE | DEFORMATION OF LANDSCAPE | SOIL EROSION | ALIEN VEGETATION | SENSITIVE AREAS (to be completed by compiler) |
| 2100 -2400 | Drainage | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 3100 | Borrow pits | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 3200 | Stockpiling | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 3300 | Mass Earthworks | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 3400 - 3900 | Pavement layers | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage<br>Noise / lights<br>Dust control | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil<br>Demarcate sensitive areas<br>Maintenance of windrows | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 4100 | Asphalt works / sealing operations | Waste treatment<br>Hazardous waste<br>Water supply | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation | Preserve indigenous vegetation<br>Preserve topsoil | |

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| SECTION | CONTENTS | ENVIRONMENTAL IMPACTS | | | | |
|---|---|---|---|---|---|---|
| | | POLLUTION TYPE | DEFORMATION OF LANDSCAPE | SOIL EROSION | ALIEN VEGETATION | SENSITIVE AREAS (to be completed by compiler) |
| | | Spillage<br>Storage<br>Noise / lights<br>Dust control<br>Smoke control<br>Storage of materials | Turning circles<br>Parking areas | Preserve topsoil | | |
| 5000 | Ancilliary roadworks | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 6000 | Structures | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |
| 7000 | Concrete pavements etc | Waste treatment<br>Hazardous waste<br>Water supply<br>Spillage<br>Storage | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Selection of site<br>Preserve indigenous vegetation<br>Preserve topsoil | Preserve indigenous vegetation<br>Preserve topsoil<br>Management of weeds | |

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**C3.3.4.3 PROVISION OF STRUCTURED TRAINING**

CONTENTS

C3.3.4.3.1 SCOPE

C3.3.4.3.2 GENERIC TRAINING

C3.3.4.3.3 ENTREPRENEURIAL SKILLS TRAINING

C3.3.4.3.4 MEASUREMENT AND PAYMENT

## C3.3.4.3.1 SCOPE

This specification covers the requirements for the provision of structured training to be arranged by the contractor over the period of this contract.

## C3.3.4.3.2 GENERIC TRAINING

C3.3.4.3.2.1 The contractor shall, from the commencement of the contract, implement a structured progressive training programme.

C3.3.4.3.2.2 Training shall be at or by an approved accredited organisation and shall be delivered by suitably qualified and experienced trainers.

C3.3.4.3.2.3 The contractor shall be responsible for the provision of everything necessary for the delivery of the generic training programme, including the following:

(a) A suitable venue with sufficient furniture, lighting and power.
(b) All necessary stationery consumables and study material
(c) Transport of the students (as necessary)

C3.3.4.3.2.4 Generic training courses shall commence within one month of possession of site and be completed before the end of the contract period. The Training Schedule should form part of the section 12 programme to be approved by the Employer's Agent at the start of the project.

C3.3.4.3.2.5 The contractor's training programme shall be subject to the approval of BLOUBERG LOCAL MUNICIPALITY and the contractor shall if so instructed by BLOUBERG LOCAL MUNICIPALITY alter or amend the programme and course content if a need is identified once the contract commences.

C3.3.4.3.2.6 The contractor shall keep comprehensive records of the training given to each student and whenever required shall provide copies of such records to the Employer's Agent. At the successful completion of each course each student shall be issued with a certificate indicating the course contents as proof of attendance and completion.

In addition to the above, a monthly return shall be submitted by the contractor. An example of the form is illustrated in Part C5 of this document (form RDP 11 (E))

## C3.3.4.3.3 ENTREPRENEURIAL SKILLS TRAINING

C3.3.4.3.3.1 Small contractors, subcontractors and the Project Steering Committee (PSC) will be entitled to receive a structured training programme, which will comprise both management skills as well as business development skills.

C3.3.4.3.3.2 The contractor shall closely monitor the performance of all small subcontractors in the execution of their contracts and shall identify all such subcontractors who, in his opinion, display the potential to benefit from structured training as may be provided for in the contract and where required by the Employer's Agent, shall make recommendations in this regard. The final list of candidates will be decided between the contractor and the Employer's Agent.

C3.3.4.3.3.3 The training will be delivered by trainers who are accredited by the Civil Employer's Agenting Training Scheme (CEITS) or other institutions recognised by the Department of Labour. Accredited training refers to both the trainers as well as to the training material.

C3.3.4.3.3.4 The contractor shall facilitate in the delivery thereof, by instructing and motivating the subcontractor regarding attendance and participation therein.

C3.3.4.3.3.5 The contractor shall further make all reasonable efforts to co-ordinate the programming of the subcontractor's work with that of the delivery of the structured training.

C3.3.4.3.3.6 The contractor shall be responsible for the provision of everything necessary for the delivery of the entrepreneurial training programme, including the following:

(a) A suitably furnished venue (if required) with lighting and power.
(b) All necessary consumables, stationery and study material
(c) Transport of the subcontractors (as necessary)

C3.3.4.3.3.7 All entrepreneurial training shall take place within normal working hours.

C3.3.3.3.3.8 The contractor's training programme shall be subject to the approval of BLOUBERG LOCAL MUNICIPALITY and the contractor shall if so instructed by BLOUBERG LOCAL MUNICIPALITY alter or amend the programme and course content if a need is identified once the contract commences.

C3.3.4.3.3.9 The contractor shall keep comprehensive records of the training given to each subcontractor and whenever required shall provide copies of such records to the Employer's Agent. At the successful completion of each course each subcontractor shall be issued with a certificate indicating the course contents as proof of attendance and completion.

In addition to the above, a monthly return shall be submitted by the contractor. An example of the form to be used is illustrated in Part C5 of this document, (form RDP 12 (E)).

**C3.3.4.3.4 MEASUREMENT AND PAYMENT**

| **ITEM** | | **UNIT** |
|---|---|---|
| E12.05 | Provision for accredited training | |
| (a) | Generic skills | Provisional sum |
| (b) | Entrepreneurial skills | Provisional sum |
| (c) | Handling cost and profit in respect of sub-item E12.05(a) and (b) above | percentage (%) |
| (d) | Training venue (only if required) | lump sum |

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

The prime cost sums are provided to cover the actual costs (including wages and the daily PSC reimbursement) for attendance of accredited training courses as agreed with the Employer's Agent and shall be expended in accordance with the provisions of sub-clause 48(2) of the geneBlouberg Local Municipality conditions of contract. The tendered percentage in sub-item E12.05 (c) is a percentage of the amount actually spent under sub-items E12.05(a) and (b) which shall include full compensation for the contractor's handling cost, profit, mentoring, record keeping, reporting and all other costs in connection therewith.

The lump sum tendered for E12.05(d) shall include full compensation for the provision of the training venue, for all necessary lighting, power, furniture, stationery, consumables and study material and for transportation of the students to and from the training venue.

Payment of the lump sum will be made after the provision of all the accredit training, issuing of all certificates and submission of all records as specified in the document.

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# PART C4: SITE INFORMATION

C4.1 SITE INFORMATION.....C.180

C4.2 LOCALITY PLAN.....C.182

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C4.1 SITE INFORMATION

### C4.1.1 Material site investigation

Earthworks will be minimised to “cut to fill” and “cut to spoil” by using the existing gravel wearing course for roadbed material of Class G10 natural gravel. Fills will be compacted to 90% mod AASHTO to a minimum CBR of 3.

**PAVEMENT SUMMARY**

Geotechnical investigation report on the centre line will be ,ade available upon request from the office of the Employers Agent.

**BORROW PITS**

Geotechnical investigation report on the borrow pit line will be ,ade available upon request from the office of the Employers Agent.

### C4.1.2 Pavement and layer works design

The pavement structure will be as follows:

| MATERIAL REQUIREMENTS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Layer #** | **Layer Thickness** | **Layer Description** | **Section of Colto Spec** | **Compaction (% of MOD AASHTO)** | **P.I. (Max)** | **G.M. (Min)** | **CBR at % MOD AASHTO** | **UCS (kPa) at % MOD AASHTO** |
| 1 | 150mm | Stabilized Base | 3400 | 98% | 6 | 1.2 | 45 | - |
| 2 | 150mm | Un-Stabilized Sub base | 3400 | 95% | 6 | 1.2 | 45 | - |
| 3 | 150mm | Selected Layer: In-situ or imported | 3400 | 93% | 3GM + 10 | 0.75 | 15 | - |
| 4 | 150mm | Roadbed | 3300 | 90% or "n" pass roller compaction | - | - | 7 | - |
| 5 | 150mm | Fill | 3300 | 90% | - | - | 3 | - |
| 6 | 150mm | Gravel Shoulder | 3400 | 95% | 3GM + 10 max 6 min | 1.2 | 15 | - |

## C4.1.3 Services

### Eskom

There is power line that passing through the identified site. This is the same power line that will be used for connection once applied from Eskom/Blouberg Municipality.

### Telkom

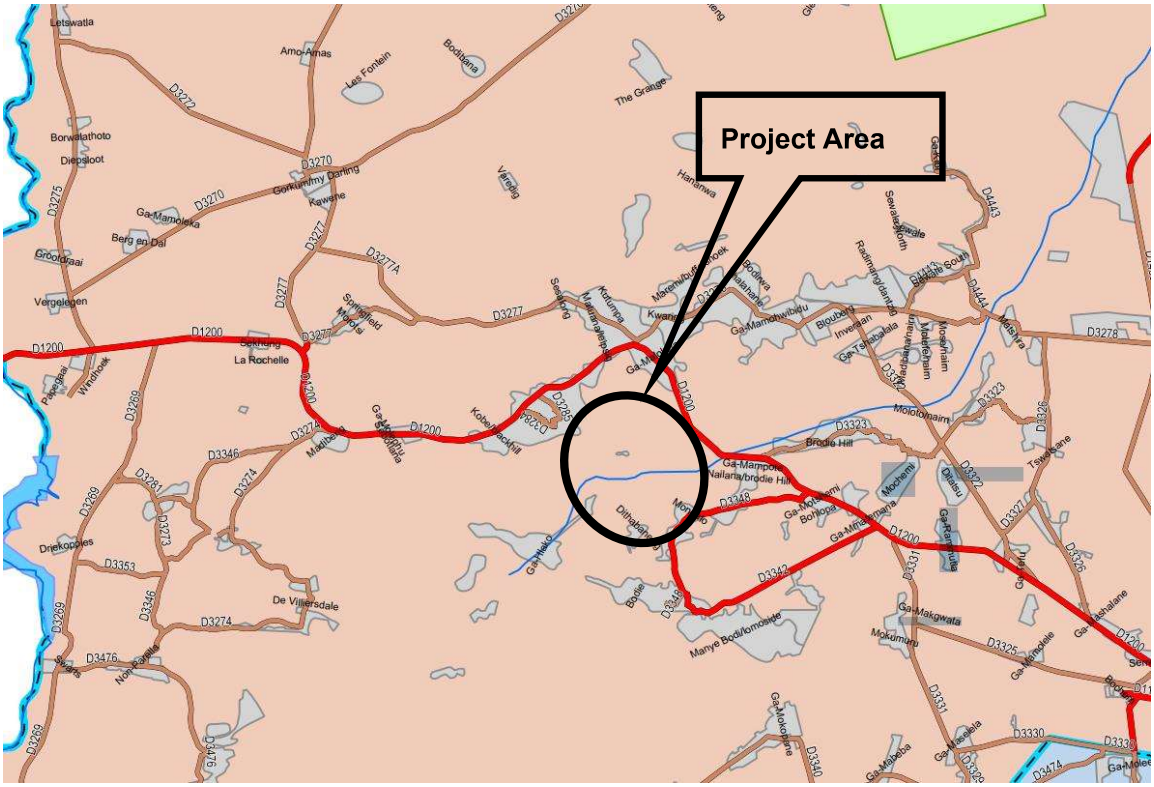
We do not foresee any Telkom poles that need relocation.

### Water pipelines and Sewers

There are water line that will need relocation.

**CONTRACT NO.: BM01/25/26**
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## C4.2 LOCALITY PLAN


Project Area
Letswatla
Amo-Amas
Les Fontein
Bodiliana
The Grange
Borwatathoto
Diepsloot
Hanahwa
Ga-Mamoleka
Berg en Dal
Groot Raai
Vergelegen
Sekhang
La Rochelle
Windhoek
Driekoppies
De Villiersdale
Ga-Mampoto
Nallaria/Brodie Hill
Brodie Hill
Ga-Makgwata
Manye Bodi/Lomdede
Mokumaru
Ga-Mokolane
Ga-Mabeda
Ga-Mahlaba
Ga-Mashalane
Ga-Mogodiele
Ga-Ramalule
Mochemi
Mokolomairi
Ga-Tshakala
Ga-Mamothwidiu
Bloubult
Inverlaan
Moseharm
Meetlehaim
Ga-Mothiba
Ga-Mothiba
Ga-Mothiba

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**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

# PART C5: ANNEXURES

C5.1 PRO-FORMA DOCUMENTS .....C.184

C5.2 CONTRACT DRAWINGS .....C.195

C5.3 EPWP MINESTRERIAL DETERMINATION.....C.197

C5.4 BLOUBERG MUNICIPAL SUPPLY CHAIN POLICY.....C.198

**CONTRACT NO.: BM01/25/26**
**FOR**
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## C5.1 PRO-FORMA DOCUMENTS

The following is a list of proforma documents and examples that are required to be completed by the successful tenderer.

C5.1.1 RETENTION MONEY GUARANTEE PROFORMA.....C.185
C5.1.2 EXAMPLE OF SMME DECLARATION AFFIDAVIT .....C.187
C5.1.3 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT .....C.189
C5.1.4 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT C.190
C5.1.5 FORM RDP 11(E) : GENERIC TRAINING REPORT .....C.191
C5.1.6 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT .....C.192
C5.1.7 FORM RDP 13(E) : EMPLOYER'S AGENTING TRAINING REPORT .....C.193
C5.1.8 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT.....C.194

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C5.1.1 RETENTION MONEY GUARANTEE PROFORMA

**EXAMPLE**

Blouberg LocalMunicipality
P.O. Box 1593,
Senwabarwana,
0790

FOR INFORMATION ONLY:
This Guarantee is not to be completed and signed by the Guarantor.
A separate form will be issued to the successful Bidders

**Notes to Tenderer**

1. **This pro forma is for information only. The successful tenderer's guarantor will need to reproduce it without amendment, omission or addition for completion and lodgement with the Employer.**

2. **The tenderer's guarantee will have to be on letterheads indicating the contact details of the guarantor, shareholders/board of directors, guarantee number and the company registration number.**

**CONTRACT NO. BM01/25/26**

**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS** The guarantee is issued on behalf of

Registration No .....

(hereinafter referred to as "the Contractor") in connection with the above mentioned contract (hereinafter referred to as "the Contract").

Whereas you have agreed that the Contractor may provide a guarantee in lieu of the retention monies provided for under the Contract.

Now therefore we, the undersigned, being duly authorised to represent the .....

.....

(full name of guarantor) registration number.....

undertake to pay you such amounts as you may from time to time demand from us, immediately upon receipt of a written demand from you.

N/A

1. Each demand shall be in writing and delivered to us at ..... or such other address as we shall in writing notify to you.

2. Our liability to make the payments herein referred to shall be unconditional and not be affected or diminished by any disputes, claims or counterclaims between you and the Contractor.

3. Our aggregate liability under this guarantee is limited to .....

   (R……..) and is restricted to payment of monies only.

4. This guarantee shall expire on the date on which the last of the retention monies, which but for this guarantee would have been retained by you, becomes payable to the Contractor.

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

5. This guarantee is neither negotiable nor transferable and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 4 (above), whichever is the earlier.

Signed at .....for and on behalf of .....

on this the... .....day of .....in the year .....

GUARANTOR: .....

AS WITNESS:

| | |
|---|---|
| 1. ..... | 2. ..... |
| NAME(Print): ..... | NAME(Print): ..... |
| ADDRESS ..... | ADDRESS ..... |
| ..... | ..... |
| ..... | ..... |

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C5.1.2 EXAMPLE OF SMME DECLARATION AFFIDAVIT

1. Name of SMME firm : ……

   Postal address : ……

   Physical address of Head Office: ……

   ……

   Telephone no. : …… Fax no ……..

   Cell no : ……

   Contact person : ……

   VAT registration no. : ……

2. Type of firm (tick as appropriate)

   - Partnership……..
   - One person business/sole trader……..
   - Close corporation: registration no……
   - Date of registration……
   - Company: registration no……
   - Pty Ltd: registration no……

   **[ATTACH LATEST CIPRO PRINTOUT TO PROVE ABOVE INFORMATION]**

3. Principal Business Activities :……

4. Service/work to be performed on this contract: ……..

5. CIDB registration no (if applicable): ……

   **[ATTACH LATEST CIDB INFORMATION AS PROOF]**

6. SMME status (mark the appropriate category)

6.1. Total full time equivalent of paid employees: ……

6.2. Total Annual turnover: ……

6.3. Total gross asset value (fixed property excluded): …. ……..

**[ATTACH CONFIRMATION LETTER OF AUDITER OR INCOME STATEMENT TO SUBSTANTIATE AND PROVE ABOVE INFORMATION]**

**7. Declaration**

I, ……, being duly authorised to sign on behalf of the firm, affirm that the SMME status as stated above and the information as furnished is true and correct.

Signature .....

Name (print) .....

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

Date .....

Signed on behalf of (print name).....

Address .....

.....

Telephone no. .....

Commissioner of Oath .....

Date .....

**Note: In the case of a Company a certificate of authority for signatory must be provided.**

BLOUBERG MUNICIPALITY

**CONTRACT NO.: BM01/25/26**

**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**EXAMPLE**

## C5.1.3 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT

**CONTRACT NO……..**

| REPORT ON EMPLOYMENT ON THE ABOVE CONTRACT FOR THE MONTH OF_____ 2022 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME OF COMPANY OR FIRM AND VENDOR NUMBER | AGE OF COMPANY OR FIRM | EMPLOYMENT GROUP | EMPLOYMENT | | | | | | | | |
| | | | MALE | FEMALE | TOTAL | PERSON/HOURS | | | VALUE (RAND) | |
| | | | | | | MALE | FEMALE | TOTAL | MALE | FEMALE |
| | | | | | | | | | | |
| | | Unskilled (US) | | | | | | | | |
| | | Semi-Skilled (SS) | | | | | | | | |
| | | Skilled (SK) | | | | | | | | |
| | | Lab.Tech (LT) | | | | | | | | |
| | | Surveyor (SUR) | | | | | | | | |
| | | Eng. Tech (ET) | | | | | | | | |
| | | Employer's Agent (EN) | | | | | | | | |
| | | Admin (AD) | | | | | | | | |
| | | Others (o) | | | | | | | | |
| | | | | | | | | TOTALS | | |
| | | | | | | | | GRAND TOTALS | | |

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**EXAMPLE**

## C5.1.4 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT

**CONTRACT NO……**

| REPORT ON THE EMPLOYMENT OF SUPERVISORY STAFF ON THE ABOVE CONTRACT FOR THE MONTH OF_____ 2022 2005 | | | | |
|---|---|---|---|---|
| **POSITION HELD** | **NAME** | **PDI** | **NON-PDI** | **TOTAL** |
| | | | | |
| Site Agent | | | | |
| Senior Materials Technician | | | | |
| Senior Surveyor | | | | |
| Earthworks Surveyor | | | | |
| Compaction Supervisor | | | | |
| Surfacing Supervisor | | | | |
| Structures Supervisor | | | | |
| Others: - List | | | | |
| | | | | |
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| | | | | |
| | **TOTALS** | | | |

**EXAMPLE**

## C5.1.5 FORM RDP 11(E) : GENERIC TRAINING REPORT

**CONTRACT NO……**

| REPORT ON GENERIC TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF _____ 2022 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATES OF TRAINING COURSES | | EMPLOYER OF TRAINEE | | NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH | ATTENDANCES | | | | TOTAL COST OF TRAINING PER TYPE OF TRAINING | |
| | | | | | NUMBER ATTENDING | | CERTIFICATES AWARDED | | | |
| START | FINISH | NAME | VENDOR NO. | | MALE | FEMALE | MALE | FEMALE | MALE | FEMALE |
| | | | | | | | | | | |
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| | | | | | | TOTAL | | | | |
| | | | | | | TOTAL ALL TRAINEES | | | | |

CONTRACT NO.: BM01/25/26
FOR
CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS

**EXAMPLE**

## C5.1.6 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT

**CONTRACT NO……**

| REPORT ON ENTERPRENEURIAL TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF_____ 2022 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DATES OF TRAINING COURSES | | EMPLOYER OF TRAINEE | | NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH | ATTENDANCES | | | | TOTAL COST OF TRAINING PER TYPE OF TRAINING | |
| | | | | | NUMBER ATTENDING | | CERTIFICATES AWARDED | | | |
| START | FINISH | NAME | VENDOR NO. | | MALE | FEMALE | MALE | FEMALE | MALE | FEMALE |
| | | | | | | | | | | |
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BLOUBERG MUNICIPALITY

**CONTRACT NO.: BM01/25/26**

**FOR**

**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**EXAMPLE**

## C5.1.7 FORM RDP 13(E) : EMPLOYER'S AGENTING TRAINING REPORT

**CONTRACT NO……..**

| REPORT ON EMPLOYER'S AGENTING TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF _____ 2022 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DATES OF TRAINING COURSES | | EMPLOYER OF TRAINEE | | NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE – IH | ATTENDANCES | | | | TOTAL COST OF TRAINING PER TYPE OF TRAINING | |
| | | | | | NUMBER ATTENDING | | CERTIFICATES AWARDED | | | |
| START | FINISH | NAME | VENDOR NO. | | MALE | FEMALE | MALE | FEMALE | MALE | FEMALE |
| | | | | | | | | | | |
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| | | | | | | | | TOTAL | | |
| | | | | | | | | TOTAL ALL TRAINEES | | |

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

**EXAMPLE**

## C5.1.8 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT

**CONTRACT NO……**

| REPORT ON COMMUNITY LIAISON MEETINGS ON THE ABOVE CONTRACT FOR THE MONTH OF_____ 2022 | | | | | | |
|---|---|---|---|---|---|---|
| DATE OF MEETING | COMPANY/FIRM OR ORGANISATION RESPONSIBLE FOR ARRANGING THE MEETING | | NUMBER OF COMMUNITY MEMBERS PRESENT | DURATION OF MEETING (hours) | TOTAL COST OF THE MEETING | COMMENTS |
| | NAME | VENDOR NO. | | | | |
| | | | | | | |
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**CONTRACT NO.: BM1/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C5.2 CONTRACT DRAWINGS

The following is a list of contract drawings included in a separate volume entitled "Part C5.2: Contract Drawings."

| DESCRIPTION | DRAWING NO. | | NO. |
|---|---|---|---|
| KEY PLAN LAYOUT | BM01/25/26/KEY/00 | - | 1 |
| KEY PLAN LAYOUT 01 | BM01/25/26/KEY/01 | - | 2 |
| KEY PLAN LAYOUT 02 | BM01/25/26/KEY/02 | - | 3 |
| KEY PLAN LAYOUT 03 | BM01/25/26/KEY/03 | - | 4 |
| ROAD 1 : LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 0.296 | BM01/25/26/R1/LS/01 | - | 5 |
| ROAD 2: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 0.107 | BM01/25/26/R2/LS/01 | - | 6 |
| ROAD 3: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 1.0 | BM01/25/26/R3/LS/01 | - | 7 |
| ROAD 3: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 1.0 TO Km 1.249 | BM01/25/26/R3/LS/02 | - | 8 |
| ROAD 4: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 1.0 | BM01/25/26/R4/LS/01 | - | 10 |
| ROAD 4: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 1.0 TO Km 1.479 | BM01/25/26/R4/LS/02 | - | 11 |
| ROAD 5: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 0.137 | BM01/25/26/R5/LS/01 | - | 12 |
| ROAD 6: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 0.443 | BM01/25/26/R6/LS/01 | - | 13 |
| ROAD 7: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 0.0 TO Km 1.0 | BM01/25/26/R7/LS/01 | - | 14 |
| ROAD 7: LAYOUT PLAN AND LONGITUDINAL SECTION FROM Km 1.0 TO Km 1.870 | BM01/25/26/R7/LS/02 | - | 15 |
| ROAD 1: CROSS SECTIONS: CHAINAGE 0 TO 295.725 | BM01/25/26/R1/CS/01 | - | 16 |
| ROAD 2: CROSS SECTIONS: CHAINAGE 0 TO 106.733 | BM01/25/26/R2/CS/01 | - | 17 |
| ROAD 3: CROSS SECTIONS: CHAINAGE 0 TO 410 | BM01/25/26/R3/CS/01 | - | 18 |
| ROAD 3: CROSS SECTIONS: CHAINAGE 420 TO 830 | BM01/25/26/R3/CS/02 | - | 19 |
| ROAD 3: CROSS SECTIONS: CHAINAGE 840 TO 1240 | BM01/25/26/R3/CS/03 | - | 20 |
| ROAD 4: CROSS SECTIONS: CHAINAGE 0 TO 410 | BM01/25/26/R4/CS/01 | - | 21 |
| ROAD 4: CROSS SECTIONS: CHAINAGE 420 TO 830 | BM01/25/26/R4/CS/02 | - | 22 |
| ROAD 4: CROSS SECTIONS: CHAINAGE 840 TO 1250 | BM01/25/26/R4/CS/03 | - | 23 |
| ROAD 4: CROSS SECTIONS: CHAINAGE 1260 TO 1470 | BM01/25/26/R4/CS/04 | - | 24 |
| ROAD 5: CROSS SECTIONS: CHAINAGE 0 TO 137.225 | BM01/25/26/R5/CS/01 | - | 25 |
| ROAD 6: CROSS SECTIONS: CHAINAGE 0 TO 442.586 | BM01/25/26/R6/CS/01 | - | 26 |
| ROAD 7: CROSS SECTIONS: CHAINAGE 0 TO 410 | BM01/25/26/R7/CS/01 | - | 27 |
| ROAD 7: CROSS SECTIONS: CHAINAGE 420 TO 830 | BM01/25/26/R7/CS/02 | - | 28 |
| ROAD 7: CROSS SECTIONS: CHAINAGE 840 TO 1250 | BM01/25/26/R7/CS/03 | - | 29 |
| ROAD 7: CROSS SECTIONS: CHAINAGE 1260 TO 1670 | BM01/25/26/R7/CS/04 | - | 30 |

BLOUBERG MUNICIPALITY

**BLOUBERG LOCAL MUNCIPALITY**

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

| DESCRIPTION | DRAWING NO. | | NO. |
|---|---|---|---|
| ROAD 7: CROSS SECTIONS: CHAINAGE 1680 TO 1860 | BM01/25/26/R7/CS/05 | - | 31 |
| INTERSECTION 01: ROAD D1200 AND GA-KOBE ACCESS ROAD 7 | BM01/25/26/INT/RD7/01 | - | 32 |
| INTERSECTION 02: ROAD D1200 AND GA-KOBE ACCESS ROAD 1 | BM01/25/26/INT/RD1/01 | - | 33 |
| INTERSECTION 01: ROAD D1200 AND GA-KOBE ACCESS ROAD 7 (D3285) ROAD MARKING | BM01/25/26/RM/RD7/01 | - | 34 |
| INTERSECTION 02: ROAD D1200 AND GA-KOBE ACCESS ROAD 1 ROAD MARKING | BM01/25/26/RM/RD1/01 | - | 35 |
| INTERSECTION 01: ROAD D1200 AND GA-KOBE ROAD 7 (D3295) TYPICAL CROSS SECTION | BM01/25/26/TD/RD7/01 | - | 36 |

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C5.3 EPWP MINESTRERIAL DETERMINATION

**CONTRACT NO.: BM01/25/26**
**FOR**
**CONSTRUCTION OF KOBE ACCESS ROAD AND INTERNAL STREETS**

## C5.4 BLOUBERG MUNICIPAL SUPPLY CHAIN POLICY

Municipal Supply chain management (SCM) Policy (as amended) is obtainable on Blouberg Municipal website i.e. www.blouberg.gov.za under:

- Key document policies
- Finance Department

# BLOUBERG LOCAL MUNICIPALITY

CONTRACT NO.: BM01/25/26

FOR

CONSTRUCTION OF GA-KOBE ACCESS ROAD AND INTERNAL STREETS

BOOK OF DRAWINGS: TENDER DRAWINGS REV 00


ISSUED BY:

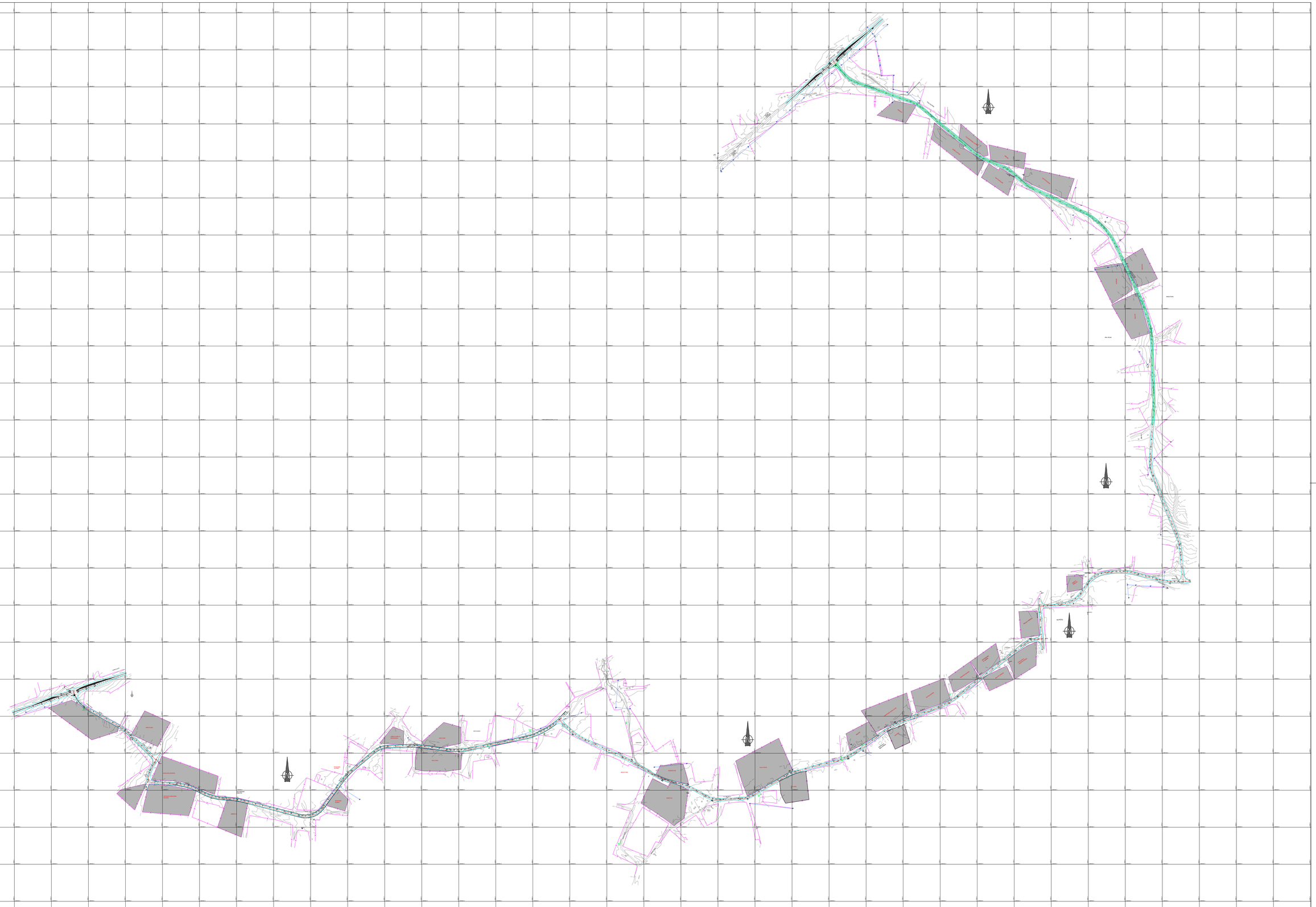
BLOUBERG LOCAL MUNICIPALITY

THE MUNICIPAL MANAGER
P.O.BOX 1593 Tel : (015) 505 7100
SENWABARWANA Fax : (015) 505 0296
0790

PREPARED BY:

DOLMEN ENGINEERS

CONSULTING ENGINEERS
P.O.BOX 468 Tel. No. 015 - 295 4885
BENDOR PARK Fax No. 015 - 295 8384
0713



| | |
|---|---|
| DESIGNED BY: | MP |
| DRAWN BY: | TM |
| CHECKED BY: | MP |
| ISSUED BY: | MP |

TENDER
Full Signatures

Client

Consulting Engineer

Consultant Drawing No.:DE67/KEY/01

APPROVED

Client
20 / /

Consulting Engineer
20 / /

| NO. | REVISION DETAILS | REV NO. | DATE | REVISED BY | APPRVD BY |
|---|---|---|---|---|---|
| 00 | ISSUED FOR TENDER PURPOSES | 00 | 06/2025 | | |
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| | | | | | |

PROJECT STATUS

| | |
|---|---|
| Information Drawing | ○ |
| Tender Drawing | ● |
| Construction Drawing | ○ |
| AS Built Drawing | ○ |


BLOUBERG LOCAL MUNICIPALITY

P.O.BOX 1593
SENWABARWANA
0790

Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384


CONTRACT NUMBER: BM01/25/26

PROJECT NAME:
GA-KOBE ACCESS ROAD AND INTERNAL STREETS

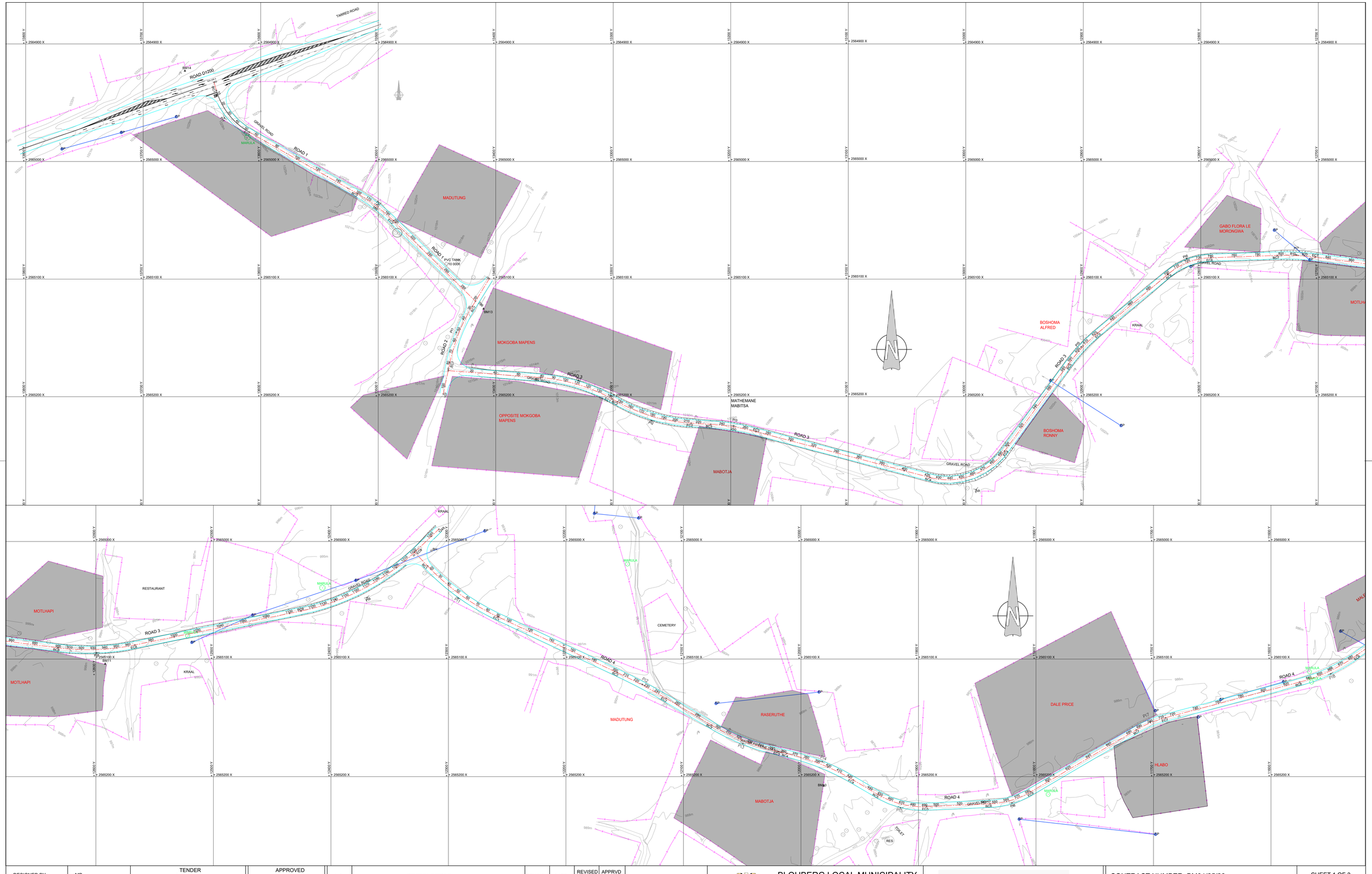
KEY PLAN LAYOUT

SHEET 1 OF 1

SCALE: AS SHOWN

DRAWING NO:
DE68/KEY/00

REVISION 00




| | |
|---|---|
| DESIGNED BY: | MP |
| DRAWN BY: | TM |
| CHECKED BY: | MP |
| ISSUED BY: | MP |

TENDER
Full Signatures

Client

Consulting Engineer

Consultant Drawing No.:DE67/KEY/01

APPROVED

Client
20 / /

Consulting Engineer
20 / /

| NO. | REVISION DETAILS | REV NO. | DATE | REVISED BY | APPRVD BY |
|---|---|---|---|---|---|
| 00 | ISSUED FOR TENDER PURPOSES | 00 | 06/2025 | | |
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| | | | | | |
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| | | | | | |
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PROJECT STATUS

| | |
|---|---|
| Information Drawing | ○ |
| Tender Drawing | ● |
| Construction Drawing | ○ |
| AS Built Drawing | ○ |


BLOUBERG LOCAL MUNICIPALITY

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0713

Tel: 015 295 4885
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CONTRACT NUMBER: BM01/25/26

PROJECT NAME:
GA-KOBE ACCESS ROAD AND INTERNAL STREETS

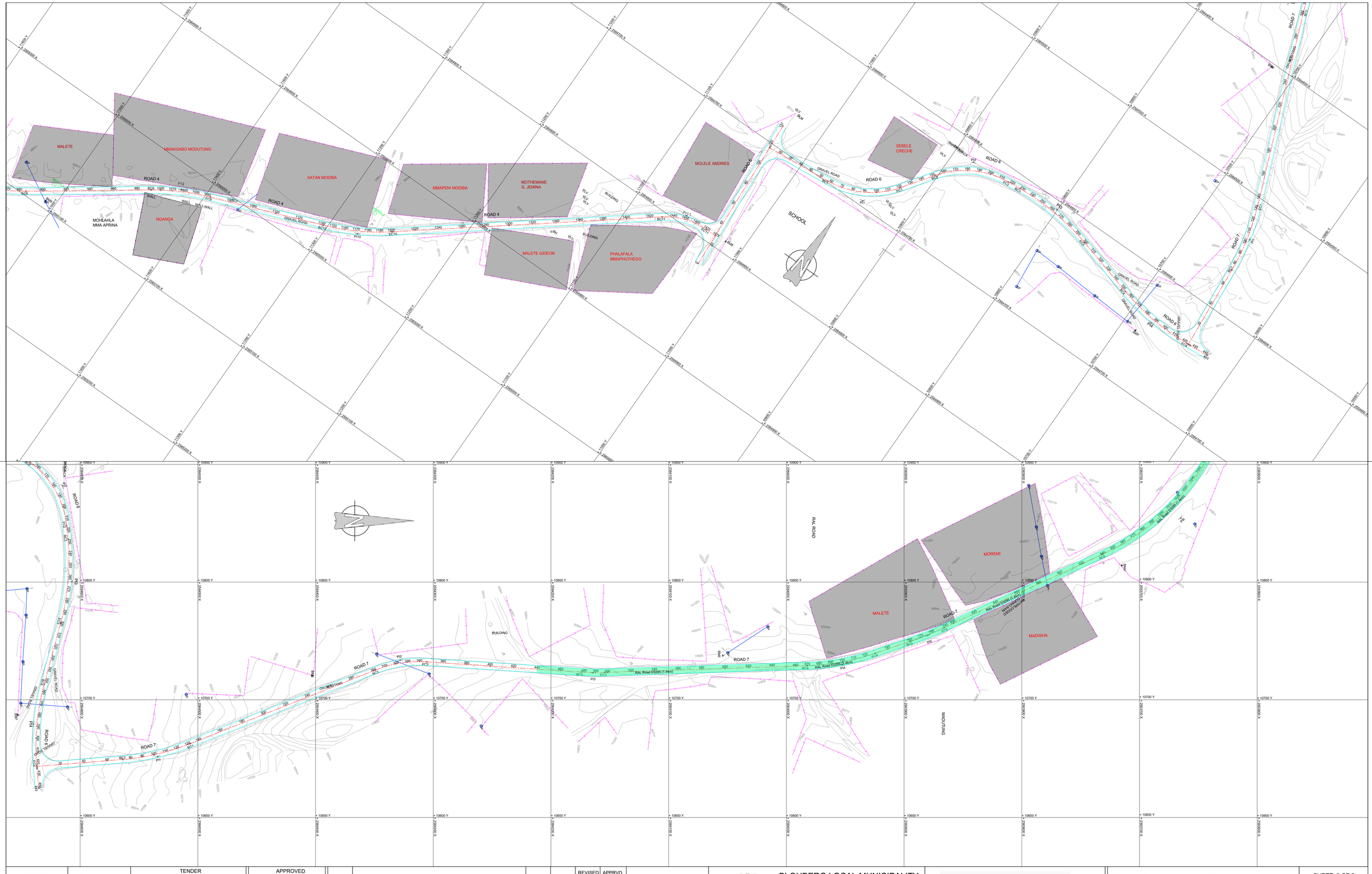
KEY PLAN LAYOUT 01

SHEET 1 OF 3

SCALE: AS SHOWN

DRAWING NO:
DE68KEY/01

REVISION 00




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DESIGNED BY: | MP | TENDER<br>Full Signatures<br>Client<br>Consulting Engineer<br>Consultant Drawing No.:DE67/KEY/02 | APPROVED<br>Client<br>20 / /<br>Consulting Engineer<br>20 / / | NO. | REVISION DETAILS | REV NO. | DATE | REVISED BY | APPRVD BY | PROJECT STATUS |
| DRAWN BY: | TM | | | 00 | ISSUED FOR TENDER PURPOSES | 00 | 06/2025 | | | Information Drawing ○ |
| CHECKED BY: | MP | | | | | | | | | Tender Drawing ● |
| ISSUED BY: | MP | | | | | | | | | Construction Drawing ○ |
| | | | | | | | | | | AS Built Drawing ○ |


BLOUBERG LOCAL MUNICIPALITY
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Tel: 015 295 4885
Fax: 015 295 8384


CONTRACT NUMBER: BM01/25/26

PROJECT NAME:
GA-KOBE ACCESS ROAD AND INTERNAL STREETS

KEY PLAN LAYOUT 02

SHEET 2 OF 3

SCALE: AS SHOWN

DRAWING NO:
DE68/KEY/02

REVISION 00

MOREMI

MORUKHULADI

MALETE NKERI

MORUKHULADI

SEKIBA

MALETE MMANGOATSO

LEHONG

MALETE FISH

ROAD 7

BRICKYARD

RAL Road D3265 (1.4km)

TARRED ROAD

ROAD D1200

| | |
|---|---|
| DESIGNED BY: | MP |
| DRAWN BY: | TM |
| CHECKED BY: | MP |
| ISSUED BY: | MP |

TENDER
Full Signatures

Client

Consulting Engineer

Consultant Drawing No.:DE67/KEY/03

APPROVED

Client
20 / /

Consulting Engineer
20 / /

| NO. | REVISION DETAILS | REV NO. | DATE | REVISED BY | APPRVD BY |
|---|---|---|---|---|---|
| 00 | ISSUED FOR TENDER PURPOSES | 00 | 06/2025 | | |

PROJECT STATUS

- Information Drawing ○
- Tender Drawing ●
- Construction Drawing ○
- AS Built Drawing ○


BLOUBERG LOCAL MUNICIPALITY

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0790

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DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384


CONTRACT NUMBER: BM01/25/26

PROJECT NAME:
GA-KOBE ACCESS ROAD AND INTERNAL STREETS

KEY PLAN LAYOUT 03

SHEET 3 of 3

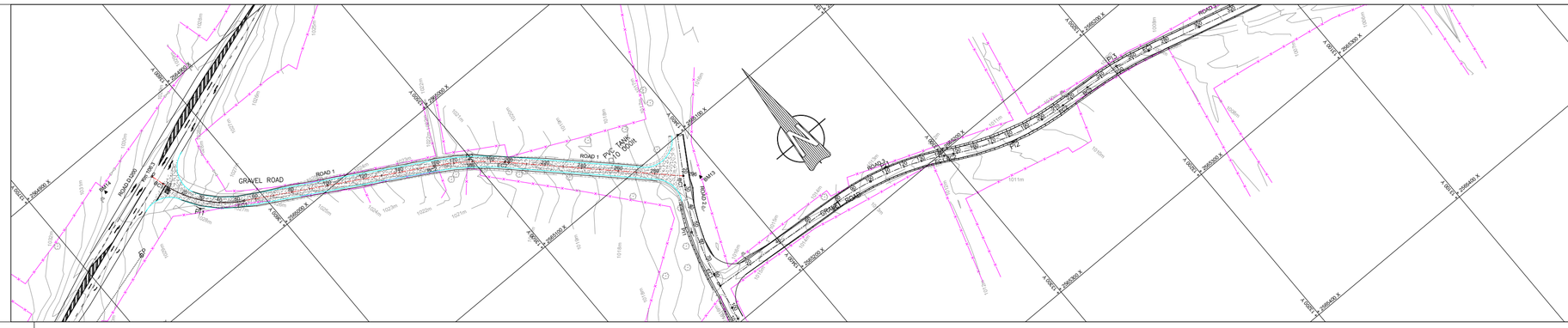
SCALE: AS SHOWN

DRAWING NO:
DE68/KEY/03

REVISION 00

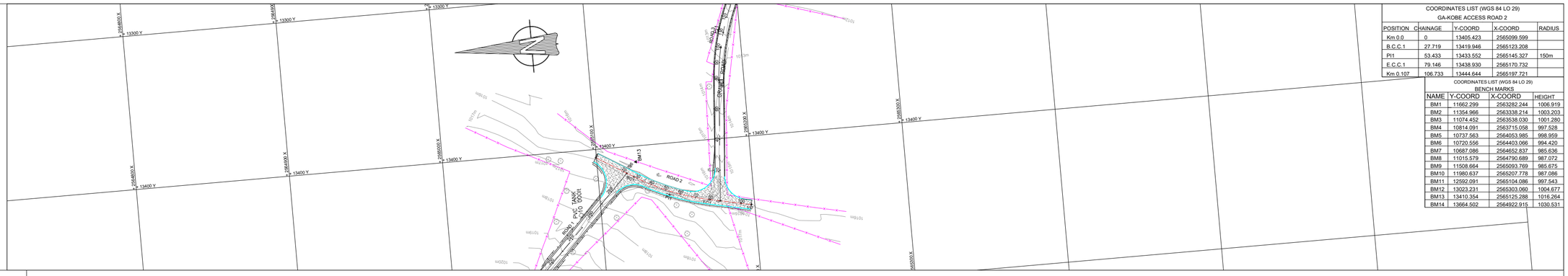
SETTING OUT

SCALE 1:1000



SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 2

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 0.0 | 0 | 13405.423 | 2565099.599 | |
| B.C.C.1 | 27.719 | 13419.946 | 2565123.208 | |
| PI1 | 53.433 | 13433.552 | 2565145.327 | 150m |
| E.C.C.1 | 79.146 | 13438.930 | 2565170.732 | |
| Km 0.107 | 106.733 | 13444.644 | 2565197.721 | |

COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

GUARDRAIL LEFT
SIDE DRAIN LEFT

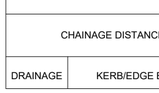
ROAD MARKING

GUARDRAIL RIGHT
SIDE DRAIN RIGHT

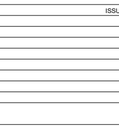
LEGEND :

GRADE LINE

GROUND LINE

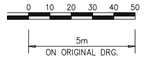



POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE




DATUM : 1009

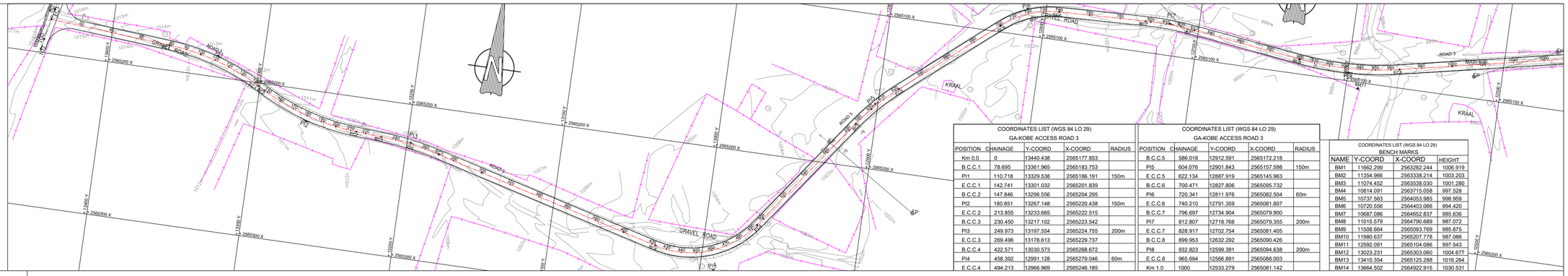
1039
1034
1029
1024
1019
1014

ROAD 2

| | | |

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 3

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 0.0 | 0 | 13440.438 | 2565177.853 | |
| B.C.C.1 | 78.695 | 13361.965 | 2565183.753 | |
| PI1 | 110.718 | 13329.538 | 2565186.191 | 150m |
| E.C.C.1 | 142.741 | 13301.032 | 2565201.839 | |
| B.C.C.2 | 147.846 | 13296.556 | 2565204.295 | |
| PI2 | 180.851 | 13267.148 | 2565220.438 | 150m |
| E.C.C.2 | 213.855 | 13233.665 | 2565222.515 | |
| B.C.C.3 | 230.450 | 13217.102 | 2565223.542 | |
| PI3 | 249.973 | 13197.554 | 2565224.755 | 200m |
| E.C.C.3 | 269.496 | 13178.613 | 2565229.737 | |
| B.C.C.4 | 422.571 | 13030.573 | 2565268.672 | |
| PI4 | 458.392 | 12991.128 | 2565279.046 | 60m |
| E.C.C.4 | 494.213 | 12966.969 | 2565246.185 | |

COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 3

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| B.C.C.5 | 586.018 | 12912.591 | 2565172.218 | |
| PI5 | 604.076 | 12901.843 | 2565157.598 | 150m |
| E.C.C.5 | 622.134 | 12887.919 | 2565145.963 | |
| B.C.C.6 | 700.471 | 12827.806 | 2565095.732 | |
| PI6 | 720.341 | 12811.976 | 2565082.504 | 60m |
| E.C.C.6 | 740.210 | 12791.359 | 2565081.807 | |
| B.C.C.7 | 796.697 | 12734.904 | 2565079.900 | |
| PI7 | 812.807 | 12718.768 | 2565079.355 | 200m |
| E.C.C.7 | 828.917 | 12702.754 | 2565081.405 | |
| B.C.C.8 | 899.953 | 12632.292 | 2565090.426 | |
| PI8 | 932.823 | 12599.391 | 2565094.638 | 200m |
| E.C.C.8 | 965.694 | 12566.891 | 2565088.003 | |
| Km 1.0 | 1000 | 12533.279 | 2565081.142 | |

COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

GUARDRAIL LEFT

SIDE DRAIN LEFT

ROAD MARKING

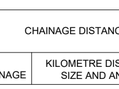
GUARDRAIL RIGHT

SIDE DRAIN RIGHT

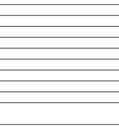
LEGEND :

GRADE LINE

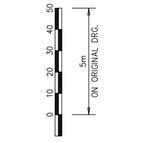
GROUND LINE

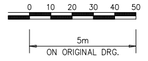



POSITION OF FINAL LEVELS

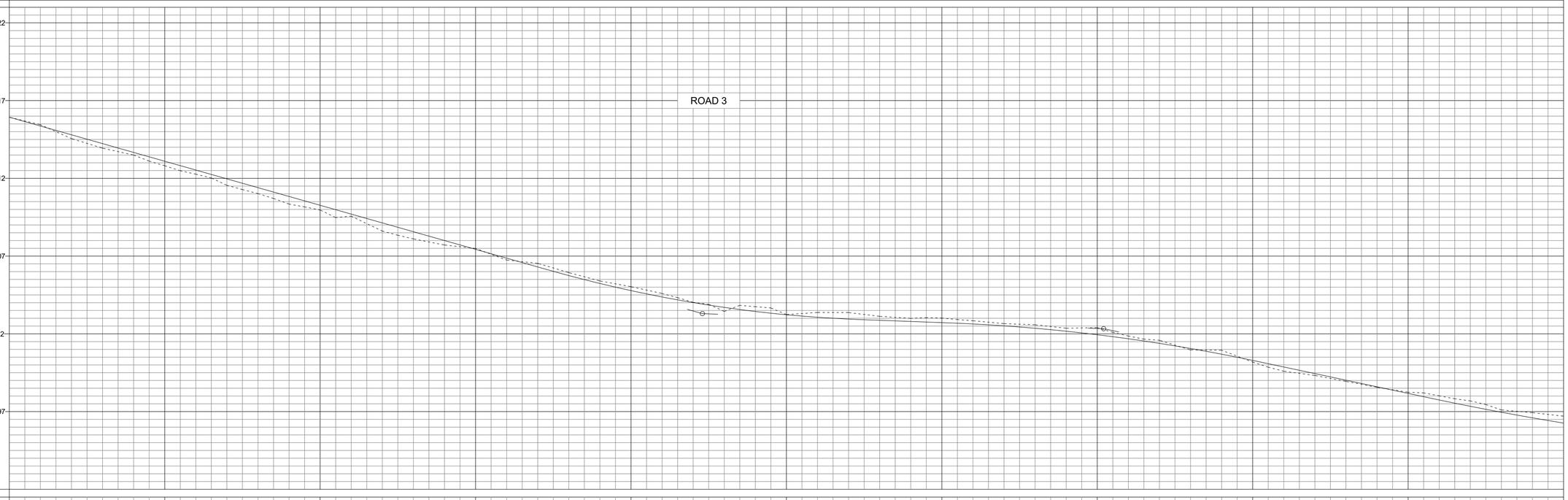



PROFILE OF GRADE LINE



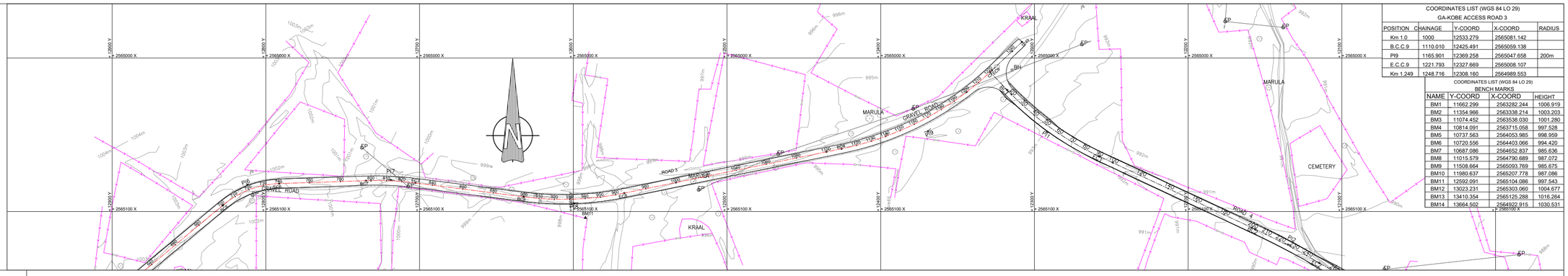

DATUM : 992




| | | |

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 3

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 1.0 | 1000 | 12533.279 | 2565081.142 | |
| B.C.C.9 | 1110.010 | 12425.491 | 2565059.138 | |
| PI9 | 1165.901 | 12369.258 | 2565047.658 | 200m |
| E.C.C.9 | 1221.793 | 12327.669 | 2565008.107 | |
| Km 1.249 | 1248.716 | 12308.160 | 2564989.553 | |

COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

GUARDRAIL LEFT

SIDE DRAIN LEFT

ROAD MARKING

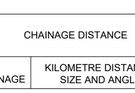
GUARDRAIL RIGHT

SIDE DRAIN RIGHT

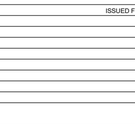
LEGEND :

GRADE LINE

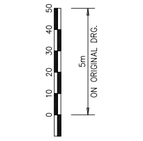
GROUND LINE

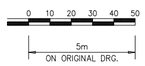



POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE




DATUM : 992

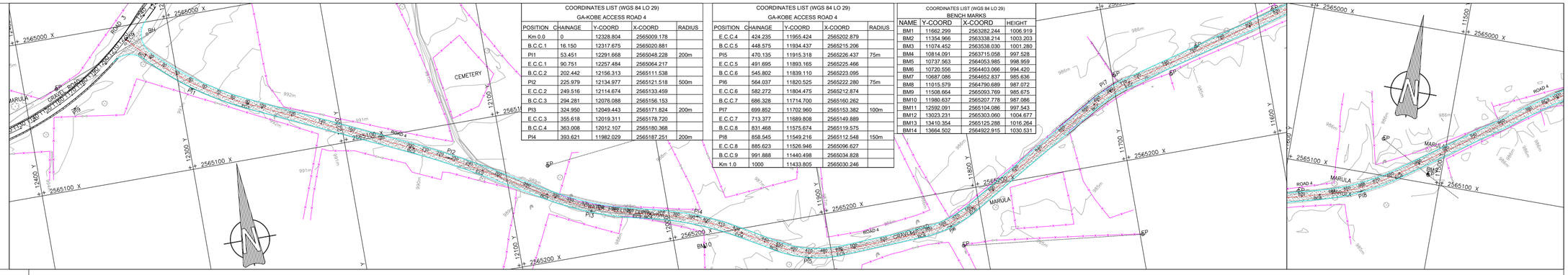
1022
1017
1012
1007
1002
997

ROAD 3

| | | |

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 4

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 0.0 | 0 | 12328.804 | 2565009.178 | |
| B.C.C.1 | 16.150 | 12317.675 | 2565020.881 | |
| PI1 | 53.451 | 12291.668 | 2565048.228 | 200m |
| E.C.C.1 | 90.751 | 12257.484 | 2565064.217 | |
| B.C.C.2 | 202.442 | 12156.313 | 2565111.538 | |
| PI2 | 225.979 | 12134.977 | 2565121.518 | 500m |
| E.C.C.2 | 249.516 | 12114.674 | 2565133.459 | |
| B.C.C.3 | 294.281 | 12076.088 | 2565156.153 | |
| PI3 | 324.950 | 12049.443 | 2565171.824 | 200m |
| E.C.C.3 | 355.618 | 12019.311 | 2565178.720 | |
| B.C.C.4 | 363.008 | 12012.107 | 2565180.368 | |
| PI4 | 393.621 | 11982.029 | 2565187.251 | 200m |

COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 4

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| E.C.C.4 | 424.235 | 11955.424 | 2565202.879 | |
| B.C.C.5 | 448.575 | 11934.437 | 2565215.206 | |
| PI5 | 470.135 | 11915.318 | 2565226.437 | 75m |
| E.C.C.5 | 491.695 | 11893.165 | 2565225.466 | |
| B.C.C.6 | 545.802 | 11839.110 | 2565223.095 | |
| PI6 | 564.037 | 11820.525 | 2565222.280 | 75m |
| E.C.C.6 | 582.272 | 11804.475 | 2565212.874 | |
| B.C.C.7 | 686.328 | 11714.700 | 2565160.262 | |
| PI7 | 699.852 | 11702.960 | 2565153.382 | 100m |
| E.C.C.7 | 713.377 | 11689.808 | 2565149.889 | |
| B.C.C.8 | 831.468 | 11575.674 | 2565119.575 | |
| PI8 | 858.545 | 11549.216 | 2565112.548 | 150m |
| E.C.C.8 | 885.623 | 11526.946 | 2565096.627 | |
| B.C.C.9 | 991.888 | 11440.498 | 2565034.828 | |
| Km 1.0 | 1000 | 11433.805 | 2565030.246 | |

COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

GUARDRAIL LEFT
SIDE DRAIN LEFT

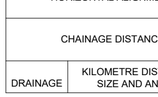
ROAD MARKING

GUARDRAIL RIGHT
SIDE DRAIN RIGHT

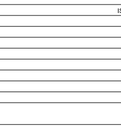
LEGEND :

GRADE LINE

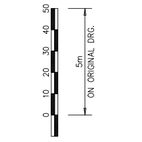
GROUND LINE

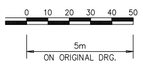



POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE



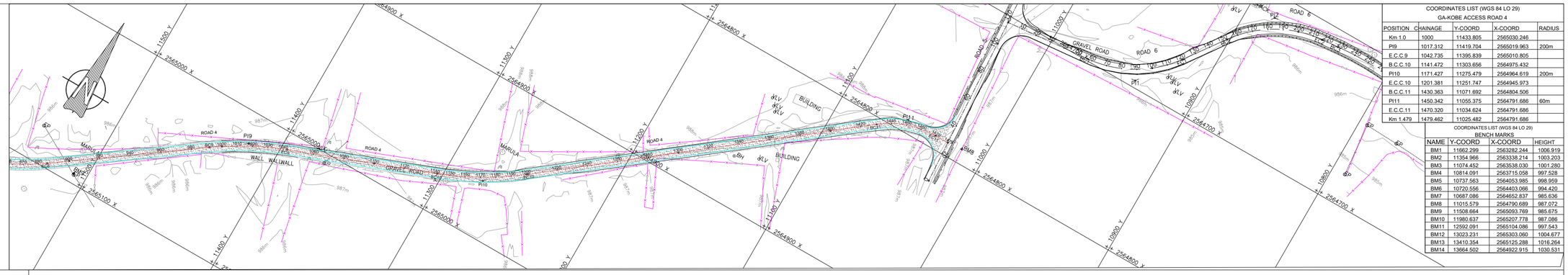

DATUM : 982




| | | |

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 4

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 1.0 | 1000 | 11433.805 | 2565030.246 | |
| PI9 | 1017.312 | 11419.704 | 2565019.963 | 200m |
| E.C.C.9 | 1042.735 | 11395.839 | 2565010.805 | |
| B.C.C.10 | 1141.472 | 11303.656 | 2564975.432 | |
| PI10 | 1171.427 | 11275.479 | 2564964.619 | 200m |
| E.C.C.10 | 1201.381 | 11251.747 | 2564945.973 | |
| B.C.C.11 | 1430.363 | 11071.692 | 2564804.506 | |
| PI11 | 1450.342 | 11055.375 | 2564791.686 | 60m |
| E.C.C.11 | 1470.320 | 11034.624 | 2564791.686 | |
| Km 1.479 | 1479.462 | 11025.482 | 2564791.686 | |

COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

GUARDRAIL LEFT
SIDE DRAIN LEFT

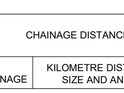
ROAD MARKING

GUARDRAIL RIGHT
SIDE DRAIN RIGHT

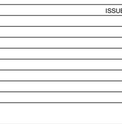
LEGEND :

GRADE LINE

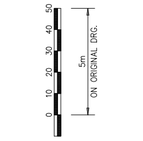
GROUND LINE

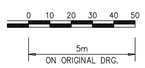



POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE




DATUM : 982

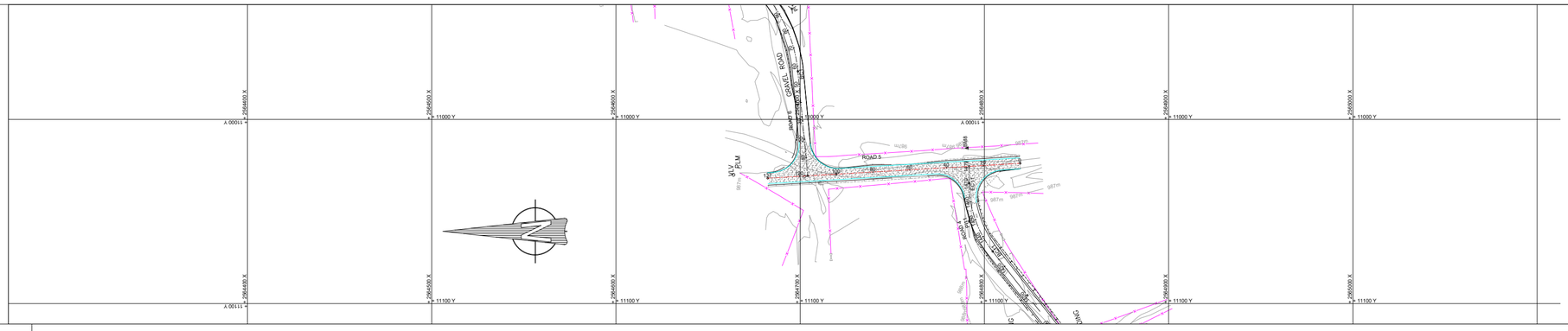
1012
1007
1002
997
992
987

ROAD 4

| | | |

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 5

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 0.0 | 0 | 11023.853 | 2564819.354 | |
| Km 0.137 | 137.225 | 11031.917 | 2564682.366 | |

COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12692.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

GUARDRAIL LEFT
SIDE DRAIN LEFT

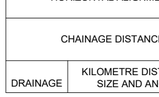
ROAD MARKING

GUARDRAIL RIGHT
SIDE DRAIN RIGHT

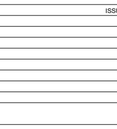
LEGEND :

———— GRADE LINE

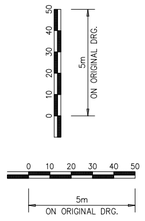
- - - - - - - - - - GROUND LINE




POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE







DATUM : 980

1010
1005
1000
995
990
985

ROAD 5

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PEG LEVELS ON STAKED LINE | | 986.815 | 987.013 | 986.785 | 986.778 | 986.869 | 987.063 | 987.069 | 987.035 | |
| FINAL ROAD LEVELS | $H_L$ 2,5 m LEFT | 986.755 | 986.787 | 986.819 | 986.851 | 986.883 | 986.915 | 986.947 | 986.975 | |
| | $H_C$ 0,0 m CENTRE | 986.815 | 986.847 | 986.879 | 986.911 | 986.843 | 986.975 | 987.007 | 987.035 | |
| | $H_R$ 2,5 m RIGHT | 986.755 | 986.787 | 986.819 | 986.851 | 986.883 | 986.915 | 986.947 | 986.975 | |
| GRADE | | 0.160 % | | | | | | | | |
| VERTICAL CURVES | | | | | | | | | | |
| SUPERELEVATION | | -2.0- | | | | | | | | |
| HORIZONTAL ALIGNMENT | | Direction 176.37.52 | | | | | | | | |
| CHAINAGE DISTANCE | | 0 | 20 | 40 | 50 | 60 | 80 | 100 | 120 | 137.225 |
| DRAINAGE | KILOMETRE DISTANCE, SIZE AND ANGLE | Kerb (LHS) / Kerb (RHS) | | | | | Kerb (LHS) / Kerb (RHS) | | | |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY
P.O.BOX 1593
SENWABARWANA
0790
Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS
DOLMEN CONSULTING ENGINEERS
P.O. BOX 468
BENDOR PARK
0713
Tel: 015 295 4885
Fax: 015 295 8384

BLM DATE
DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

**GA-KOBE ACCESS ROAD AND INTERNAL STREETS**

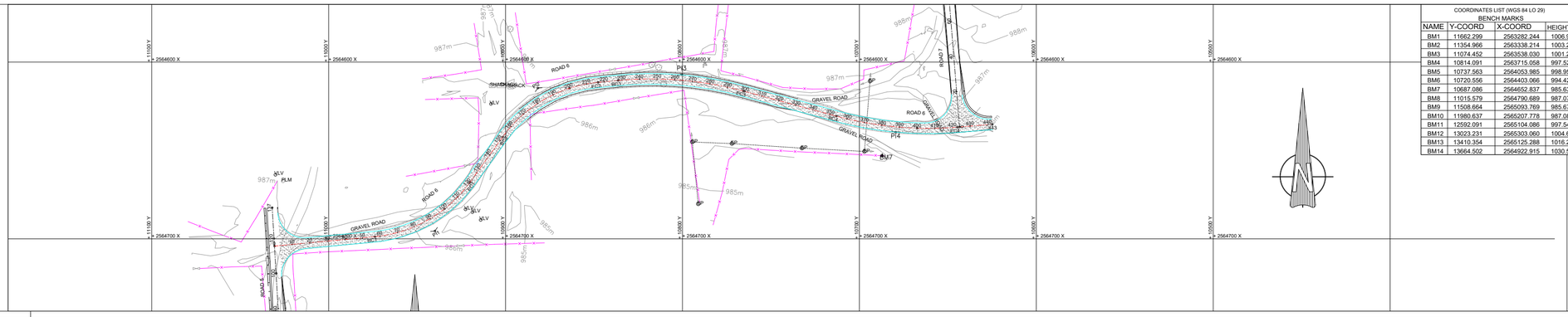
ROAD 5: LAYOUT PLAN AND LONGITUDINAL SECTION
FROM Km 0.0 TO Km 0.137

TENDER (Full signature)
BLM 20 / /
For: DOLMEN ENGINEERS CC 20 / /

SHEET 7 OF 10
SCALE N.T.S
DRAWING NUMBER DE68/R5/LS/01
REVISION 0

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)
BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

COORDINATES LIST (WGS 84 LO 29)
GA-KOBE ACCESS ROAD 6

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| Km 0.0 | 0 | 11030.637 | 2564704.101 | |
| B.C.C.1 | 57.009 | 10973.880 | 2564698.751 | |
| PI1 | 88.982 | 10939.969 | 2564695.555 | 75m |
| E.C.C.1 | 120.955 | 10920.061 | 2564687.917 | |
| B.C.C.2 | 152.475 | 10901.639 | 2564642.340 | |
| PI2 | 184.434 | 10881.741 | 2564614.715 | 75m |
| E.C.C.2 | 216.393 | 10847.847 | 2564611.508 | |
| B.C.C.3 | 227.863 | 10836.428 | 2564610.427 | |
| PI3 | 263.629 | 10800.437 | 2564607.022 | 200m |
| E.C.C.3 | 299.394 | 10765.531 | 2564616.432 | |
| B.C.C.4 | 353.774 | 10713.026 | 2564630.586 | |
| PI4 | 388.231 | 10679.424 | 2564639.644 | 200m |
| E.C.C.4 | 422.687 | 10644.737 | 2564636.820 | |
| Km 0.443 | 442.586 | 10624.904 | 2564635.205 | |

GUARDRAIL LEFT

SIDE DRAIN LEFT

ROAD MARKING

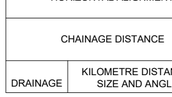
GUARDRAIL RIGHT

SIDE DRAIN RIGHT

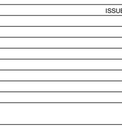
LEGEND :

GRADE LINE

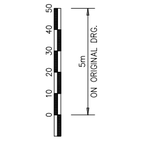
GROUND LINE

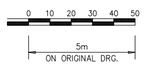



POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE




DATUM : 979

1019
1014
1009
1004
999
984

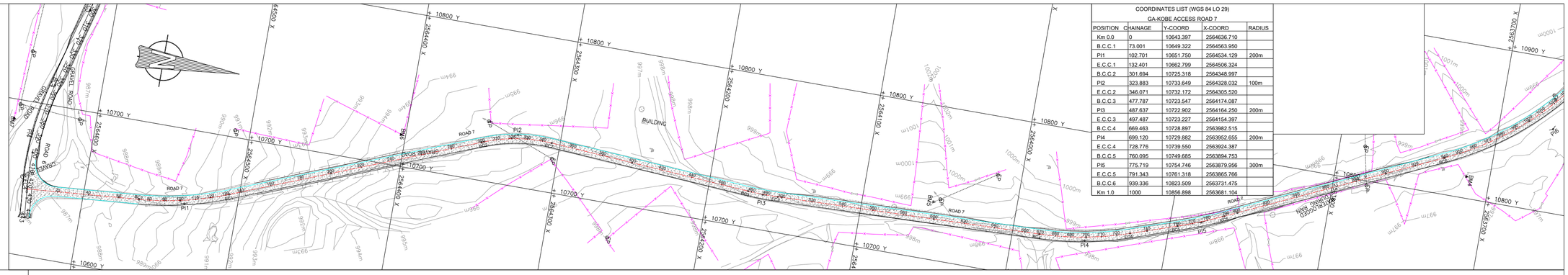
ROAD 6

PEG LEVELS ON STAKED LINE

| | | |

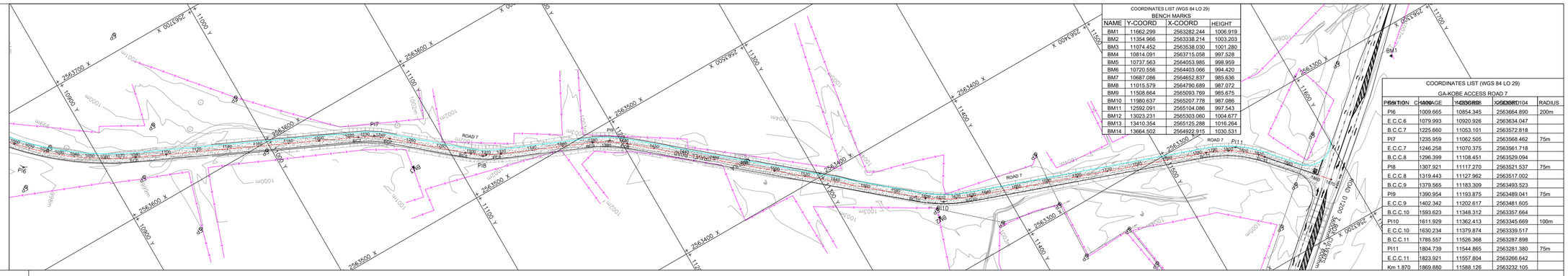
SETTING OUT

SCALE 1:1000


ROAD 7
PI1
PI2
PI3
PI4
PI5
PI6
BUILDING
GRAVEL ROAD
GRAVEL ROAD
GRAVEL ROAD

SETTING OUT

SCALE 1:1000




COORDINATES LIST (WGS 84 LO 29)

BENCH MARKS

| NAME | Y-COORD | X-COORD | HEIGHT |
|---|---|---|---|
| BM1 | 11662.299 | 2563282.244 | 1006.919 |
| BM2 | 11354.966 | 2563338.214 | 1003.203 |
| BM3 | 11074.452 | 2563538.030 | 1001.280 |
| BM4 | 10814.091 | 2563715.058 | 997.528 |
| BM5 | 10737.563 | 2564053.985 | 998.959 |
| BM6 | 10720.556 | 2564403.066 | 994.420 |
| BM7 | 10687.086 | 2564652.837 | 985.636 |
| BM8 | 11015.579 | 2564790.689 | 987.072 |
| BM9 | 11508.664 | 2565093.769 | 985.675 |
| BM10 | 11980.637 | 2565207.778 | 987.086 |
| BM11 | 12592.091 | 2565104.086 | 997.543 |
| BM12 | 13023.231 | 2565303.060 | 1004.677 |
| BM13 | 13410.354 | 2565125.288 | 1016.264 |
| BM14 | 13664.502 | 2564922.915 | 1030.531 |

COORDINATES LIST (WGS 84 LO 29)

GA-KOBE ACCESS ROAD 7

| POSITION | CHAINAGE | Y-COORD | X-COORD | RADIUS |
|---|---|---|---|---|
| PI6 | 1009.665 | 10854.345 | 2563664.890 | 200m |
| E.C.C.6 | 1079.993 | 10920.926 | 2563634.047 | |
| B.C.C.7 | 1225.660 | 11053.101 | 2563572.818 | |
| PI7 | 1235.959 | 11062.505 | 2563568.462 | 75m |
| E.C.C.7 | 1246.258 | 11070.375 | 2563561.718 | |
| B.C.C.8 | 1296.399 | 11108.451 | 2563529.094 | |
| PI8 | 1307.921 | 11117.270 | 2563521.537 | 75m |
| E.C.C.8 | 1319.443 | 11127.962 | 2563517.002 | |
| B.C.C.9 | 1379.565 | 11183.309 | 2563493.523 | |
| PI9 | 1390.954 | 11193.875 | 2563489.041 | 75m |
| E.C.C.9 | 1402.342 | 11202.617 | 2563481.605 | |
| B.C.C.10 | 1593.623 | 11348.312 | 2563357.664 | |
| PI10 | 1611.929 | 11362.413 | 2563345.669 | 100m |
| E.C.C.10 | 1630.234 | 11379.874 | 2563339.517 | |
| B.C.C.11 | 1785.557 | 11526.368 | 2563287.898 | |
| PI11 | 1804.739 | 11544.865 | 2563281.380 | 75m |
| E.C.C.11 | 1823.921 | 11557.804 | 2563266.642 | |
| Km 1.870 | 1869.880 | 11588.126 | 2563232.105 | |

GUARDRAIL LEFT

SIDE DRAIN LEFT

ROAD MARKING

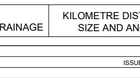
GUARDRAIL RIGHT

SIDE DRAIN RIGHT

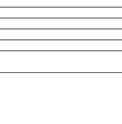
LEGEND :

GRADE LINE

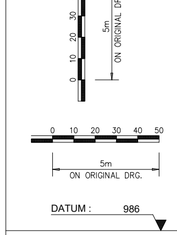
GROUND LINE



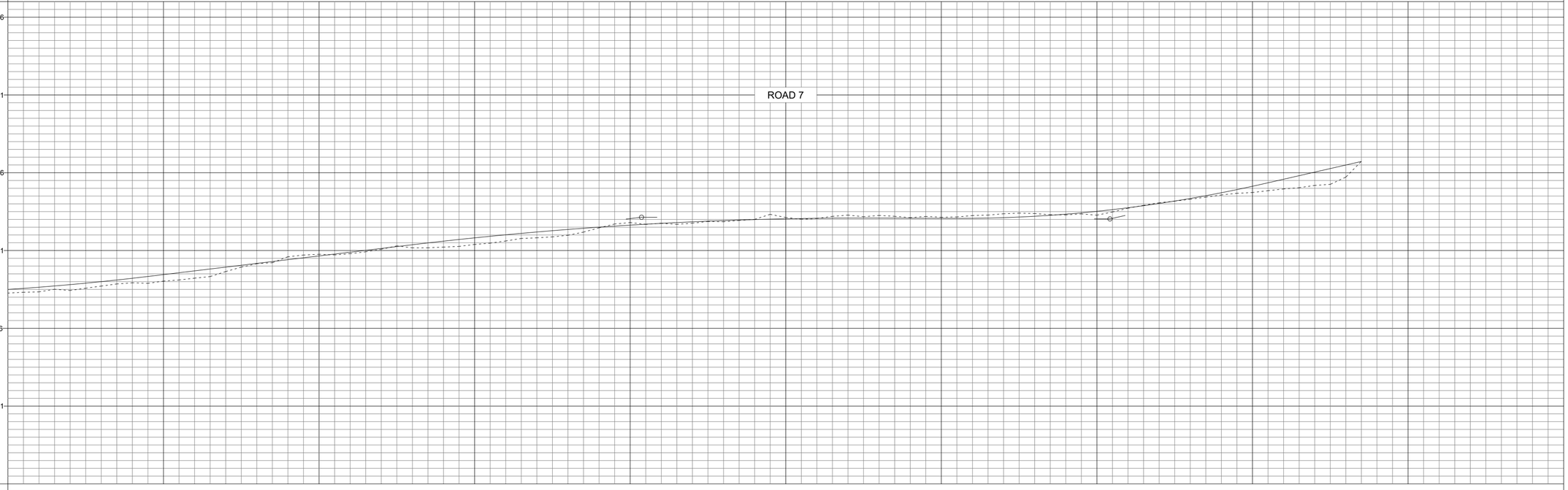

POSITION OF FINAL LEVELS




PROFILE OF GRADE LINE




DATUM : 986




| | | |

## CHAINAGE 50

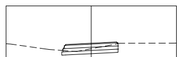
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1026



| | | | |
|---|---|---|---|
| FINISHED | 1026.490<br>1026.664 | | 1026.771<br>1026.710 |
| GROUND | | 1026.616 | |
| OFFSET | -3.261<br>-3.000 | 0.000 | 3.000<br>3.091 |

## CHAINAGE 40

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1026



| | | | |
|---|---|---|---|
| FINISHED | 1026.909<br>1027.188 | | 1027.208<br>1027.226 |
| GROUND | | 1026.989 | |
| OFFSET | -3.418<br>-3.000 | 0.000 | 3.000<br>3.123 |

## CHAINAGE 30

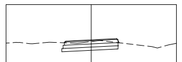
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1027



| | | | |
|---|---|---|---|
| FINISHED | 1027.524<br>1027.728 | | 1027.848<br>1027.825 |
| GROUND | | 1027.397 | |
| OFFSET | -3.307<br>-3.000 | 0.000 | 3.000<br>3.338 |

## CHAINAGE 20

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1027



| | | | |
|---|---|---|---|
| FINISHED | 1028.207<br>1028.284 | | 1028.454<br>1028.206 |
| GROUND | | 1028.266 | |
| OFFSET | -3.115<br>-3.000 | 0.000 | 3.000<br>3.288 |

## CHAINAGE 10

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1028



| | | | |
|---|---|---|---|
| FINISHED | 1029.020<br>1028.856 | | 1028.949<br>1029.236 |
| GROUND | | 1029.094 | |
| OFFSET | -4.497<br>-3.000 | 0.000 | 3.000<br>4.681 |

## CHAINAGE 0

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1029



| | | | |
|---|---|---|---|
| FINISHED | 1029.415<br>1029.432 | | 1029.432<br>1029.608 |
| GROUND | | 1029.492 | |
| OFFSET | -3.025<br>-3.000 | 0.000 | 3.000<br>4.514 |

## CHAINAGE 90

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1024



| | | | |
|---|---|---|---|
| FINISHED | 1024.929<br>1024.727 | | 1024.727<br>1024.924 |
| GROUND | | 1024.919 | |
| OFFSET | -4.553<br>-3.000 | 0.000 | 3.000<br>4.545 |

## CHAINAGE 80

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1024



| | | | |
|---|---|---|---|
| FINISHED | 1025.295<br>1025.187 | | 1025.187<br>1025.387 |
| GROUND | | 1025.047 | |
| OFFSET | -4.413<br>-3.000 | 0.000 | 3.000<br>4.549 |

## CHAINAGE 70

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1025



| | | | |
|---|---|---|---|
| FINISHED | 1025.619<br>1025.649 | | 1025.663<br>1025.783 |
| GROUND | | 1025.429 | |
| OFFSET | -3.006<br>-3.000 | 0.000 | 3.000<br>4.430 |

## CHAINAGE 60

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1025



| | | | |
|---|---|---|---|
| FINISHED | 1026.843<br>1026.749 | | 1026.191<br>1026.227 |
| GROUND | | 1025.946 | |
| OFFSET | -3.010<br>-3.000 | 0.000 | 3.000<br>4.304 |

## CHAINAGE 150

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1021



| | | | |
|---|---|---|---|
| FINISHED | 1022.572<br>1022.200 | | 1022.185<br>1022.529 |
| GROUND | | 1022.028 | |
| OFFSET | -4.808<br>-3.000 | 0.000 | 3.000<br>4.765 |

## CHAINAGE 140

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1022



| | | | |
|---|---|---|---|
| FINISHED | 1022.862<br>1022.602 | | 1022.602<br>1022.648 |
| GROUND | | 1022.426 | |
| OFFSET | -4.640<br>-3.000 | 0.000 | 3.000<br>4.319 |

## CHAINAGE 130

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1022



| | | | |
|---|---|---|---|
| FINISHED | 1023.249<br>1023.019 | | 1023.019<br>1023.105 |
| GROUND | | 1022.800 | |
| OFFSET | -4.594<br>-3.000 | 0.000 | 3.000<br>4.378 |

## CHAINAGE 120

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1023



| | | | |
|---|---|---|---|
| FINISHED | 1023.690<br>1023.436 | | 1023.436<br>1023.693 |
| GROUND | | 1023.270 | |
| OFFSET | -4.631<br>-3.000 | 0.000 | 3.000<br>4.635 |

## CHAINAGE 110

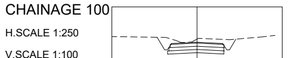
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1023



| | | | |
|---|---|---|---|
| FINISHED | 1024.122<br>1023.854 | | 1023.854<br>1024.094 |
| GROUND | | 1023.647 | |
| OFFSET | -4.653<br>-3.000 | 0.000 | 3.000<br>4.596 |

## CHAINAGE 100

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1023



| | | | |
|---|---|---|---|
| FINISHED | 1024.574<br>1024.282 | | 1024.282<br>1024.486 |
| GROUND | | 1024.490 | |
| OFFSET | -4.688<br>-3.000 | 0.000 | 3.000<br>4.555 |

## CHAINAGE 170

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1021



| | | | |
|---|---|---|---|
| FINISHED | 1021.594<br>1021.471 | | 1021.351<br>1021.628 |
| GROUND | | 1021.466 | |
| OFFSET | -4.435<br>-3.000 | 0.000 | 3.000<br>4.666 |

## CHAINAGE 160

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1021



| | | | |
|---|---|---|---|
| FINISHED | 1022.030<br>1021.855 | | 1021.768<br>1021.900 |
| GROUND | | 1021.608 | |
| OFFSET | -4.514<br>-3.000 | 0.000 | 3.000<br>4.448 |

## CHAINAGE 190

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1020



| | | | |
|---|---|---|---|
| FINISHED | 1020.483<br>1020.641 | | 1020.521<br>1020.892 |
| GROUND | | 1020.381 | |
| OFFSET | -3.237<br>-3.000 | 0.000 | 3.000<br>4.807 |

## CHAINAGE 180

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1020



| | | | |
|---|---|---|---|
| FINISHED | 1021.159<br>1021.055 | | 1020.935<br>1021.121 |
| GROUND | | 1021.125 | |
| OFFSET | -4.466<br>-3.000 | 0.000 | 3.000<br>4.530 |

## CHAINAGE 200

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1019



| | | | |
|---|---|---|---|
| FINISHED | 1020.141<br>1020.173 | | 1020.109<br>1020.467 |
| GROUND | | 1020.073 | |
| OFFSET | -3.049<br>-3.000 | 0.000 | 3.000<br>4.787 |

## CHAINAGE 210

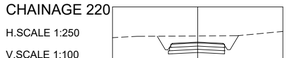
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1019



| | | | |
|---|---|---|---|
| FINISHED | 1019.491<br>1019.698 | | 1019.698<br>1020.094 |
| GROUND | | 1019.990 | |
| OFFSET | -4.509<br>-3.000 | 0.000 | 3.000<br>4.844 |

## CHAINAGE 190

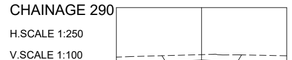
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1018



| | | | |
|---|---|---|---|
| FINISHED | 1019.625<br>1019.290 | | 1019.290<br>1019.654 |
| GROUND | | 1019.637 | |
| OFFSET | -4.754<br>-3.000 | 0.000 | 3.000<br>4.797 |

## CHAINAGE 290

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1016



| | | | |
|---|---|---|---|
| FINISHED | 1016.740<br>1016.480 | | 1016.480<br>1016.781 |
| GROUND | | 1016.790 | |
| OFFSET | -4.640<br>-3.000 | 0.000 | 3.000<br>4.701 |

## CHAINAGE 280

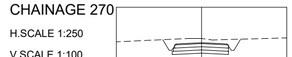
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1016



| | | | |
|---|---|---|---|
| FINISHED | 1017.102<br>1016.878 | | 1016.878<br>1017.152 |
| GROUND | | 1017.122 | |
| OFFSET | -4.587<br>-3.000 | 0.000 | 3.000<br>4.632 |

## CHAINAGE 270

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1016



| | | | |
|---|---|---|---|
| FINISHED | 1017.478<br>1017.276 | | 1017.276<br>1017.501 |
| GROUND | | 1017.534 | |
| OFFSET | -4.553<br>-3.000 | 0.000 | 3.000<br>4.587 |

## CHAINAGE 260

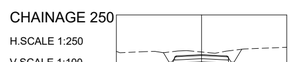
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1017



| | | | |
|---|---|---|---|
| FINISHED | 1017.739<br>1017.675 | | 1017.675<br>1017.851 |
| GROUND | | 1017.829 | |
| OFFSET | -4.346<br>-3.000 | 0.000 | 3.000<br>4.660 |

## CHAINAGE 250

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1017



| | | | |
|---|---|---|---|
| FINISHED | 1018.226<br>1018.076 | | 1018.076<br>1018.389 |
| GROUND | | 1018.239 | |
| OFFSET | -4.475<br>-3.000 | 0.000 | 3.000<br>4.720 |

## CHAINAGE 240

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1018



| | | | |
|---|---|---|---|
| FINISHED | 1018.724<br>1018.478 | | 1018.478<br>1018.750 |
| GROUND | | 1018.584 | |
| OFFSET | -4.618<br>-3.000 | 0.000 | 3.000<br>4.656 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
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| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

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BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 1:CROSS SECTIONS: CHAINAGE 0 TO 295.725

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R1/CS/01

SHEET 1 OF 16

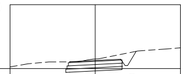
SCALE
N.T.S

REVISION
0

## CHAINAGE 50

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1016

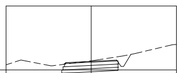


| | | | |
|---|---|---|---|
| FINISHED | 1016.316<br>1016.320 | | 1016.440<br>1016.811 |
| GROUND | | 1016.449 | |
| OFFSET | -3.005<br>-3.000 | 0.000 | 3.000<br>4.807 |

## CHAINAGE 40

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1016

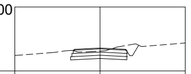


| | | | |
|---|---|---|---|
| FINISHED | 1016.268<br>1016.341 | | 1016.461<br>1016.729 |
| GROUND | | 1016.428 | |
| OFFSET | -3.110<br>-3.000 | 0.000 | 3.000<br>4.651 |

## CHAINAGE 100

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015



| | | | |
|---|---|---|---|
| FINISHED | 1016.846<br>1016.914 | | 1016.014<br>1016.204 |
| GROUND | | 1015.931 | |
| OFFSET | -3.101<br>-3.000 | 0.000 | 3.000<br>4.535 |

## CHAINAGE 30

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1016

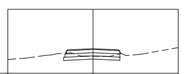


| | | | |
|---|---|---|---|
| FINISHED | 1016.403<br>1016.849 | | 1016.446<br>1016.668 |
| GROUND | | 1016.397 | |
| OFFSET | -4.330<br>-3.000 | 0.000 | 3.000<br>4.584 |

## CHAINAGE 90

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015

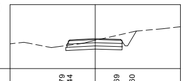


| | | | |
|---|---|---|---|
| FINISHED | 1016.843<br>1016.845 | | 1016.098<br>1015.927 |
| GROUND | | 1015.798 | |
| OFFSET | -3.228<br>-3.000 | 0.000 | 3.000<br>3.256 |

## CHAINAGE 20

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015

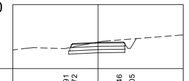


| | | | |
|---|---|---|---|
| FINISHED | 1016.079<br>1016.344 | | 1016.369<br>1016.760 |
| GROUND | | 1016.325 | |
| OFFSET | -3.398<br>-3.000 | 0.000 | 3.000<br>4.837 |

## CHAINAGE 80

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015

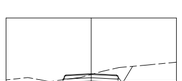


| | | | |
|---|---|---|---|
| FINISHED | 1016.661<br>1016.972 | | 1016.246<br>1016.405 |
| GROUND | | 1016.241 | |
| OFFSET | -3.272<br>-3.000 | 0.000 | 3.000<br>4.489 |

## CHAINAGE 10

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1016

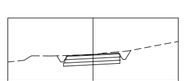


| | | | |
|---|---|---|---|
| FINISHED | 1016.098<br>1016.325 | | 1016.325<br>1016.730 |
| GROUND | | 1016.349 | |
| OFFSET | -3.341<br>-3.000 | 0.000 | 3.000<br>4.858 |

## CHAINAGE 70

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015

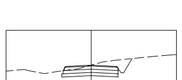


| | | | |
|---|---|---|---|
| FINISHED | 1016.226<br>1016.235 | | 1016.355<br>1016.479 |
| GROUND | | 1016.285 | |
| OFFSET | -4.237<br>-3.000 | 0.000 | 3.000<br>4.436 |

## CHAINAGE 0

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015

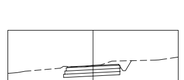


| | | | |
|---|---|---|---|
| FINISHED | 1016.101<br>1016.304 | | 1016.304<br>1016.674 |
| GROUND | | 1016.364 | |
| OFFSET | -3.304<br>-3.000 | 0.000 | 3.000<br>4.805 |

## CHAINAGE 60

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1015



| | | | |
|---|---|---|---|
| FINISHED | 1016.303<br>1016.594 | | 1016.404<br>1016.575 |
| GROUND | | 1016.358 | |
| OFFSET | -3.028<br>-3.000 | 0.000 | 3.000<br>4.507 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

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BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 2:CROSS SECTIONS: CHAINAGE 0 TO 106.733

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R2/CS/01

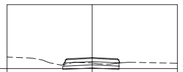
SHEET 2 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 50

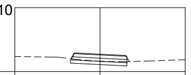
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1014



| | | | |
|---|---|---|---|
| FINISHED | 1014.178<br>1014.456 | | 1014.456<br>1014.264 |
| GROUND | | 1014.262 | |
| OFFSET | -3.421<br>-3.000 | 0.000 | 3.000<br>3.288 |

## CHAINAGE 110

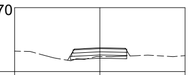
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1012



| | | | |
|---|---|---|---|
| FINISHED | 1012.892<br>1012.877 | | 1012.767<br>1012.465 |
| GROUND | | 1012.486 | |
| OFFSET | -3.411<br>-3.000 | 0.000 | 3.000<br>3.437 |

## CHAINAGE 170

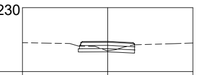
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1010



| | | | |
|---|---|---|---|
| FINISHED | 1010.631<br>1011.027 | | 1011.992<br>1010.252 |
| GROUND | | 1010.704 | |
| OFFSET | -3.289<br>-3.000 | 0.000 | 3.000<br>3.549 |

## CHAINAGE 230

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1008



| | | | |
|---|---|---|---|
| FINISHED | 1009.195<br>1009.411 | | 1009.357<br>1009.256 |
| GROUND | | 1008.880 | |
| OFFSET | -3.324<br>-3.000 | 0.000 | 3.000<br>3.152 |

## CHAINAGE 290

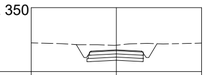
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1007



| | | | |
|---|---|---|---|
| FINISHED | 1007.539<br>1007.667 | | 1007.667<br>1007.712 |
| GROUND | | 1007.643 | |
| OFFSET | -3.181<br>-3.000 | 0.000 | 3.000<br>4.332 |

## CHAINAGE 350

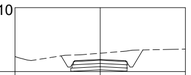
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1006.265<br>1005.968 | | 1005.968<br>1006.305 |
| GROUND | | 1006.238 | |
| OFFSET | -4.710<br>-3.000 | 0.000 | 3.000<br>4.770 |

## CHAINAGE 410

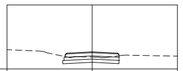
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1004.736<br>1004.510 | | 1004.510<br>1005.014 |
| GROUND | | 1004.860 | |
| OFFSET | -4.590<br>-3.000 | 0.000 | 3.000<br>5.006 |

## CHAINAGE 40

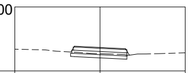
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1014



| | | | |
|---|---|---|---|
| FINISHED | 1014.584<br>1014.740 | | 1014.740<br>1014.618 |
| GROUND | | 1014.555 | |
| OFFSET | -3.234<br>-3.000 | 0.000 | 3.000<br>3.183 |

## CHAINAGE 100

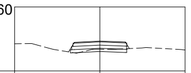
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1012



| | | | |
|---|---|---|---|
| FINISHED | 1012.806<br>1013.160 | | 1013.040<br>1012.736 |
| GROUND | | 1012.809 | |
| OFFSET | -3.417<br>-3.000 | 0.000 | 3.000<br>3.455 |

## CHAINAGE 160

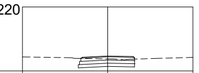
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1010



| | | | |
|---|---|---|---|
| FINISHED | 1010.891<br>1011.249 | | 1011.353<br>1011.048 |
| GROUND | | 1011.018 | |
| OFFSET | -3.073<br>-3.000 | 0.000 | 3.000<br>3.469 |

## CHAINAGE 220

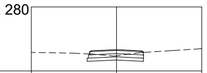
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1009



| | | | |
|---|---|---|---|
| FINISHED | 1009.583<br>1009.640 | | 1009.676<br>1009.553 |
| GROUND | | 1009.565 | |
| OFFSET | -3.085<br>-3.000 | 0.000 | 3.000<br>3.184 |

## CHAINAGE 280

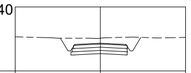
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1007



| | | | |
|---|---|---|---|
| FINISHED | 1007.705<br>1007.945 | | 1007.940<br>1007.863 |
| GROUND | | 1007.712 | |
| OFFSET | -3.223<br>-3.000 | 0.000 | 3.000<br>3.116 |

## CHAINAGE 340

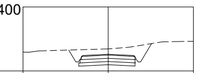
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1006.534<br>1006.241 | | 1006.241<br>1006.574 |
| GROUND | | 1006.535 | |
| OFFSET | -4.690<br>-3.000 | 0.000 | 3.000<br>4.750 |

## CHAINAGE 400

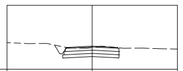
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1004.978<br>1004.720 | | 1004.720<br>1005.283 |
| GROUND | | 1005.032 | |
| OFFSET | -4.638<br>-3.000 | 0.000 | 3.000<br>5.069 |

## CHAINAGE 30

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1014



| | | | |
|---|---|---|---|
| FINISHED | 1015.104<br>1015.023 | | 1015.023<br>1015.010 |
| GROUND | | 1015.021 | |
| OFFSET | -4.416<br>-3.000 | 0.000 | 3.000<br>3.019 |

## CHAINAGE 90

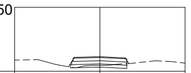
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1013



| | | | |
|---|---|---|---|
| FINISHED | 1013.166<br>1013.443 | | 1013.323<br>1013.026 |
| GROUND | | 1013.109 | |
| OFFSET | -3.395<br>-3.000 | 0.000 | 3.000<br>3.445 |

## CHAINAGE 150

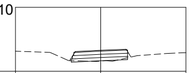
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1011



| | | | |
|---|---|---|---|
| FINISHED | 1011.229<br>1011.502 | | 1011.503<br>1011.180 |
| GROUND | | 1011.278 | |
| OFFSET | -3.066<br>-3.000 | 0.000 | 3.000<br>3.306 |

## CHAINAGE 210

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1009



| | | | |
|---|---|---|---|
| FINISHED | 1009.800<br>1009.924 | | 1010.031<br>1009.885 |
| GROUND | | 1009.476 | |
| OFFSET | -3.638<br>-3.000 | 0.000 | 3.000<br>3.349 |

## CHAINAGE 270

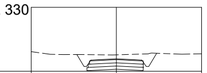
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1008



| | | | |
|---|---|---|---|
| FINISHED | 1008.995<br>1008.900 | | 1008.224<br>1008.170 |
| GROUND | | 1008.175 | |
| OFFSET | -3.193<br>-3.000 | 0.000 | 3.000<br>3.080 |

## CHAINAGE 330

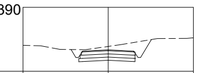
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1006



| | | | |
|---|---|---|---|
| FINISHED | 1006.783<br>1006.524 | | 1006.524<br>1006.844 |
| GROUND | | 1006.769 | |
| OFFSET | -4.639<br>-3.000 | 0.000 | 3.000<br>4.730 |

## CHAINAGE 390

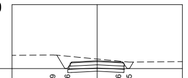
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1005.018<br>1004.943 | | 1004.943<br>1005.486 |
| GROUND | | 1005.164 | |
| OFFSET | -4.382<br>-3.000 | 0.000 | 3.000<br>5.064 |

## CHAINAGE 20

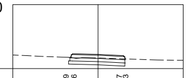
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1015



| | | | |
|---|---|---|---|
| FINISHED | 1015.629<br>1015.306 | | 1015.306<br>1015.305 |
| GROUND | | 1015.447 | |
| OFFSET | -4.734<br>-3.000 | 0.000 | 3.000<br>4.249 |

## CHAINAGE 80

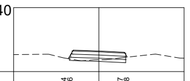
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1013



| | | | |
|---|---|---|---|
| FINISHED | 1013.618<br>1013.898 | | 1013.607<br>1013.463 |
| GROUND | | 1013.497 | |
| OFFSET | -3.295<br>-3.000 | 0.000 | 3.000<br>3.231 |

## CHAINAGE 140

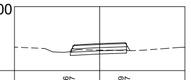
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1011



| | | | |
|---|---|---|---|
| FINISHED | 1011.604<br>1011.904 | | 1011.907<br>1011.676 |
| GROUND | | 1011.553 | |
| OFFSET | -3.033<br>-3.000 | 0.000 | 3.000<br>3.343 |

## CHAINAGE 200

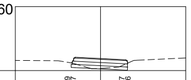
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1009



| | | | |
|---|---|---|---|
| FINISHED | 1009.806<br>1010.207 | | 1010.309<br>1009.937 |
| GROUND | | 1009.962 | |
| OFFSET | -3.466<br>-3.000 | 0.000 | 3.000<br>3.338 |

## CHAINAGE 260

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1008



| | | | |
|---|---|---|---|
| FINISHED | 1008.829<br>1008.827 | | 1008.607<br>1008.356 |
| GROUND | | 1008.194 | |
| OFFSET | -3.483<br>-3.000 | 0.000 | 3.000<br>3.228 |

## CHAINAGE 320

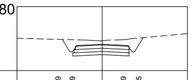
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1006



| | | | |
|---|---|---|---|
| FINISHED | 1006.771<br>1006.807 | | 1006.807<br>1007.069 |
| GROUND | | 1006.745 | |
| OFFSET | -3.053<br>-3.000 | 0.000 | 3.000<br>4.643 |

## CHAINAGE 380

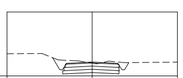
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1005.459<br>1005.179 | | 1005.179<br>1005.545 |
| GROUND | | 1005.401 | |
| OFFSET | -4.671<br>-3.000 | 0.000 | 3.000<br>4.799 |

## CHAINAGE 10

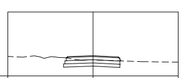
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1015



| | | | |
|---|---|---|---|
| FINISHED | 1015.663<br>1015.590 | | 1015.590<br>1015.625 |
| GROUND | | 1015.598 | |
| OFFSET | -4.645<br>-3.000 | 0.000 | 3.000<br>4.302 |

## CHAINAGE 70

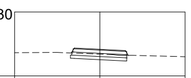
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1013



| | | | |
|---|---|---|---|
| FINISHED | 1013.841<br>1013.898 | | 1013.890<br>1013.704 |
| GROUND | | 1013.751 | |
| OFFSET | -3.100<br>-3.000 | 0.000 | 3.000<br>3.278 |

## CHAINAGE 130

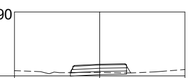
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1011



| | | | |
|---|---|---|---|
| FINISHED | 1012.075<br>1012.210 | | 1012.190<br>1011.990 |
| GROUND | | 1012.021 | |
| OFFSET | -3.253<br>-3.000 | 0.000 | 3.000<br>3.343 |

## CHAINAGE 190

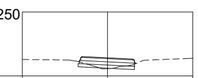
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1010



| | | | |
|---|---|---|---|
| FINISHED | 1010.156<br>1010.400 | | 1010.270<br>1010.141 |
| GROUND | | 1010.162 | |
| OFFSET | -3.502<br>-3.000 | 0.000 | 3.000<br>3.643 |

## CHAINAGE 250

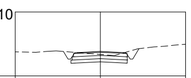
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1008



| | | | |
|---|---|---|---|
| FINISHED | 1008.667<br>1008.910 | | 1008.399<br>1008.377 |
| GROUND | | 1008.341 | |
| OFFSET | -3.185<br>-3.000 | 0.000 | 3.000<br>3.321 |

## CHAINAGE 310

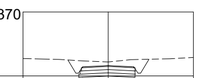
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1006



| | | | |
|---|---|---|---|
| FINISHED | 1007.147<br>1007.090 | | 1007.090<br>1007.279 |
| GROUND | | 1007.008 | |
| OFFSET | -4.335<br>-3.000 | 0.000 | 3.000<br>4.532 |

## CHAINAGE 370

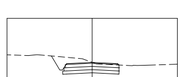
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1006.748<br>1006.426 | | 1006.426<br>1006.782 |
| GROUND | | 1006.655 | |
| OFFSET | -4.733<br>-3.000 | 0.000 | 3.000<br>4.784 |

## CHAINAGE 0

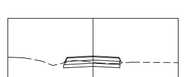
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1015



| | | | |
|---|---|---|---|
| FINISHED | 1016.234<br>1015.873 | | 1015.873<br>1015.810 |
| GROUND | | 1015.933 | |
| OFFSET | -4.702<br>-3.000 | 0.000 | 3.000<br>3.095 |

## CHAINAGE 60

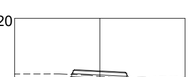
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1013



| | | | |
|---|---|---|---|
| FINISHED | 1013.812<br>1014.173 | | 1014.173<br>1013.984 |
| GROUND | | 1013.839 | |
| OFFSET | -3.392<br>-3.000 | 0.000 | 3.000<br>3.403 |

## CHAINAGE 120

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1012



| | | | |
|---|---|---|---|
| FINISHED | 1012.365<br>1012.668 | | 1012.470<br>1012.270 |
| GROUND | | 1012.268 | |
| OFFSET | -3.143<br>-3.000 | 0.000 | 3.000<br>3.306 |

## CHAINAGE 180

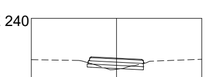
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1010



| | | | |
|---|---|---|---|
| FINISHED | 1010.184<br>1010.775 | | 1010.831<br>1010.408 |
| GROUND | | 1010.345 | |
| OFFSET | -3.869<br>-3.000 | 0.000 | 3.000<br>3.604 |

## CHAINAGE 240

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1008



| | | | |
|---|---|---|---|
| FINISHED | 1008.823<br>1008.764 | | 1009.074<br>1008.893 |
| GROUND | | 1008.699 | |
| OFFSET | -3.468<br>-3.000 | 0.000 | 3.000<br>3.272 |

## CHAINAGE 300

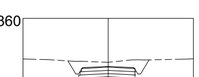
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1007



| | | | |
|---|---|---|---|
| FINISHED | 1007.398<br>1007.374 | | 1007.374<br>1007.595 |
| GROUND | | 1007.493 | |
| OFFSET | -4.396<br>-3.000 | 0.000 | 3.000<br>4.583 |

## CHAINAGE 360

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1006.002<br>1005.686 | | 1005.686<br>1006.050 |
| GROUND | | 1005.937 | |
| OFFSET | -4.725<br>-3.000 | 0.000 | 3.000<br>4.795 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY

P.O.BOX 1593
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0790

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DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384

BLM _____ DATE _____

DOLMEN ENGINEERS CC _____ DATE _____

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 3:CROSS SECTIONS: CHAINAGE 0 TO 410

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R3/CS/01

SHEET 3 OF 16

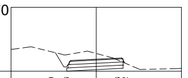
SCALE
N.T.S

REVISION
0

## CHAINAGE 470

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

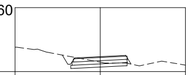


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.870 | 1003.503 | | 1003.623 | 1003.382 |
| GROUND | | | 1003.852 | | |
| OFFSET | -4.799 | -3.000 | 0.000 | 3.000 | 3.382 |

## CHAINAGE 460

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

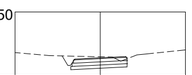


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.774 | 1003.649 | | 1003.760 | 1003.351 |
| GROUND | | | 1003.442 | | |
| OFFSET | -4.451 | -3.000 | 0.000 | 3.000 | 3.615 |

## CHAINAGE 450

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

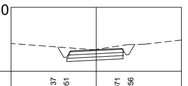


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.938 | 1003.790 | | 1003.910 | 1003.806 |
| GROUND | | | 1003.895 | | |
| OFFSET | -4.473 | -3.000 | 0.000 | 3.000 | 3.166 |

## CHAINAGE 440

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

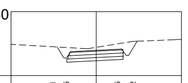


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1004.137 | 1003.951 | | 1004.071 | 1004.256 |
| GROUND | | | 1004.026 | | |
| OFFSET | -4.528 | -3.000 | 0.000 | 3.000 | 4.527 |

## CHAINAGE 430

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

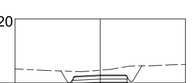


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1004.341 | 1004.125 | | 1004.245 | 1004.672 |
| GROUND | | | 1004.326 | | |
| OFFSET | -4.573 | -3.000 | 0.000 | 3.000 | 4.800 |

## CHAINAGE 420

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004

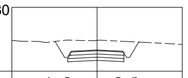


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1004.560 | 1004.311 | | 1004.373 | 1004.798 |
| GROUND | | | 1004.595 | | |
| OFFSET | -4.623 | -3.000 | 0.000 | 3.000 | 4.888 |

## CHAINAGE 530

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

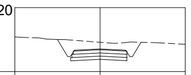


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.397 | 1002.939 | | 1002.939 | 1003.368 |
| GROUND | | | 1003.445 | | |
| OFFSET | -4.937 | -3.000 | 0.000 | 3.000 | 4.893 |

## CHAINAGE 520

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

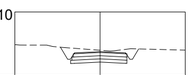


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.506 | 1003.003 | | 1003.003 | 1003.374 |
| GROUND | | | 1003.374 | | |
| OFFSET | -5.005 | -3.000 | 0.000 | 3.000 | 4.808 |

## CHAINAGE 510

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

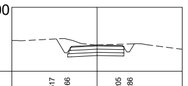


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.347 | 1003.078 | | 1003.078 | 1003.266 |
| GROUND | | | 1003.202 | | |
| OFFSET | -4.663 | -3.000 | 0.000 | 3.000 | 4.532 |

## CHAINAGE 500

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

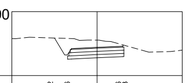


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.517 | 1003.166 | | 1003.205 | 1003.266 |
| GROUND | | | 1003.237 | | |
| OFFSET | -4.776 | -3.000 | 0.000 | 3.000 | 4.372 |

## CHAINAGE 490

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

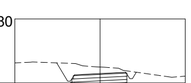


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.762 | 1003.266 | | 1003.318 | 1003.243 |
| GROUND | | | 1003.863 | | |
| OFFSET | -4.994 | -3.000 | 0.000 | 3.000 | 4.748 |

## CHAINAGE 480

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.940 | 1003.379 | | 1003.499 | 1003.501 |
| GROUND | | | 1003.744 | | |
| OFFSET | -5.092 | -3.000 | 0.000 | 3.000 | 4.254 |

## CHAINAGE 590

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

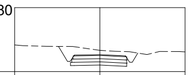


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.121 | 1002.806 | | 1002.698 | 1002.965 |
| GROUND | | | 1003.040 | | |
| OFFSET | -4.722 | -3.000 | 0.000 | 3.000 | 4.651 |

## CHAINAGE 580

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

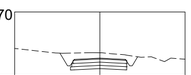


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.180 | 1002.773 | | 1002.736 | 1002.868 |
| GROUND | | | 1002.994 | | |
| OFFSET | -4.862 | -3.000 | 0.000 | 3.000 | 4.449 |

## CHAINAGE 570

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

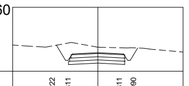


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.067 | 1002.773 | | 1002.773 | 1002.897 |
| GROUND | | | 1003.085 | | |
| OFFSET | -4.691 | -3.000 | 0.000 | 3.000 | 4.436 |

## CHAINAGE 560

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

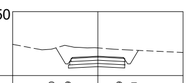


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.222 | 1002.811 | | 1002.811 | 1003.090 |
| GROUND | | | 1003.126 | | |
| OFFSET | -4.867 | -3.000 | 0.000 | 3.000 | 4.668 |

## CHAINAGE 550

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

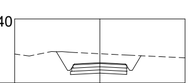


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.300 | 1002.849 | | 1002.849 | 1003.181 |
| GROUND | | | 1003.297 | | |
| OFFSET | -4.927 | -3.000 | 0.000 | 3.000 | 4.748 |

## CHAINAGE 540

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

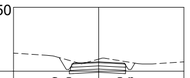


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.464 | 1002.888 | | 1002.888 | 1003.274 |
| GROUND | | | 1003.368 | | |
| OFFSET | -5.113 | -3.000 | 0.000 | 3.000 | 4.829 |

## CHAINAGE 650

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

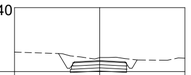


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.839 | 1002.380 | | 1002.380 | 1002.378 |
| GROUND | | | 1002.589 | | |
| OFFSET | -4.638 | -3.000 | 0.000 | 3.000 | 4.247 |

## CHAINAGE 640

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

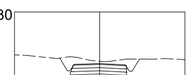


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.846 | 1002.454 | | 1002.454 | 1002.545 |
| GROUND | | | 1002.668 | | |
| OFFSET | -4.838 | -3.000 | 0.000 | 3.000 | 4.387 |

## CHAINAGE 630

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

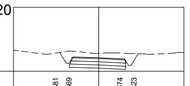


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.832 | 1002.542 | | 1002.518 | 1002.791 |
| GROUND | | | 1002.684 | | |
| OFFSET | -4.686 | -3.000 | 0.000 | 3.000 | 4.659 |

## CHAINAGE 620

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

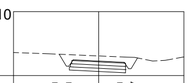


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.881 | 1002.669 | | 1002.574 | 1002.823 |
| GROUND | | | 1002.840 | | |
| OFFSET | -4.568 | -3.000 | 0.000 | 3.000 | 4.823 |

## CHAINAGE 610

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

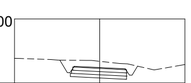


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.001 | 1002.741 | | 1002.621 | 1002.827 |
| GROUND | | | 1002.821 | | |
| OFFSET | -4.639 | -3.000 | 0.000 | 3.000 | 4.558 |

## CHAINAGE 600

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

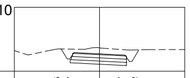


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1003.065 | 1002.780 | | 1002.660 | 1002.786 |
| GROUND | | | 1003.013 | | |
| OFFSET | -4.678 | -3.000 | 0.000 | 3.000 | 4.439 |

## CHAINAGE 710

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

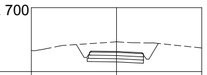


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.045 | 1001.877 | | 1001.757 | 1002.002 |
| GROUND | | | 1002.096 | | |
| OFFSET | -4.503 | -3.000 | 0.000 | 3.000 | 4.618 |

## CHAINAGE 700

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

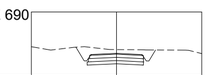


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.267 | 1001.959 | | 1001.882 | 1002.320 |
| GROUND | | | 1002.400 | | |
| OFFSET | -4.713 | -3.000 | 0.000 | 3.000 | 4.906 |

## CHAINAGE 690

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

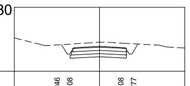


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.346 | 1002.005 | | 1001.999 | 1002.215 |
| GROUND | | | 1002.235 | | |
| OFFSET | -4.762 | -3.000 | 0.000 | 3.000 | 4.574 |

## CHAINAGE 680

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

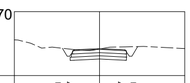


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.246 | 1002.108 | | 1002.108 | 1002.277 |
| GROUND | | | 1002.362 | | |
| OFFSET | -4.458 | -3.000 | 0.000 | 3.000 | 4.503 |

## CHAINAGE 670

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

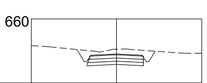


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.281 | 1002.207 | | 1002.207 | 1002.361 |
| GROUND | | | 1002.247 | | |
| OFFSET | -4.361 | -3.000 | 0.000 | 3.000 | 4.480 |

## CHAINAGE 660

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

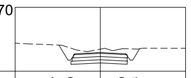


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1002.566 | 1002.298 | | 1002.298 | 1002.487 |
| GROUND | | | 1002.579 | | |
| OFFSET | -4.652 | -3.000 | 0.000 | 3.000 | 4.533 |

## CHAINAGE 770

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1000

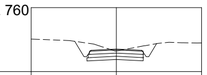


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.227 | 1000.819 | | 1000.819 | 1001.054 |
| GROUND | | | 1001.036 | | |
| OFFSET | -4.863 | -3.000 | 0.000 | 3.000 | 4.603 |

## CHAINAGE 760

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1000

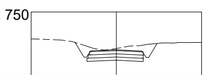


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.419 | 1000.997 | | 1000.997 | 1001.312 |
| GROUND | | | 1000.964 | | |
| OFFSET | -4.884 | -3.000 | 0.000 | 3.000 | 4.723 |

## CHAINAGE 750

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1000

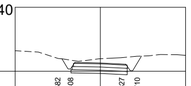


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.570 | 1001.178 | | 1001.166 | 1001.522 |
| GROUND | | | 1001.282 | | |
| OFFSET | -4.841 | -3.000 | 0.000 | 3.000 | 4.784 |

## CHAINAGE 740

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

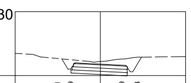


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.592 | 1001.408 | | 1001.327 | 1001.710 |
| GROUND | | | 1001.585 | | |
| OFFSET | -4.511 | -3.000 | 0.000 | 3.000 | 4.825 |

## CHAINAGE 730

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

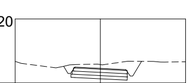


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.781 | 1001.599 | | 1001.479 | 1001.863 |
| GROUND | | | 1001.660 | | |
| OFFSET | -4.523 | -3.000 | 0.000 | 3.000 | 4.826 |

## CHAINAGE 720

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1001

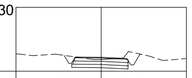


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.778 | 1001.742 | | 1001.622 | 1002.012 |
| GROUND | | | 1001.860 | | |
| OFFSET | -4.304 | -3.000 | 0.000 | 3.000 | 4.835 |

## CHAINAGE 830

H.SCALE 1:250

V.SCALE 1:100
DATUM = 999

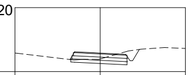


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 999.744 | 999.668 | | 999.596 | 999.806 |
| GROUND | | | 999.551 | | |
| OFFSET | -4.364 | -3.000 | 0.000 | 3.000 | 4.565 |

## CHAINAGE 820

H.SCALE 1:250

V.SCALE 1:100
DATUM = 999

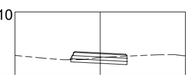


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 999.584 | 999.528 | | 999.608 | 1000.039 |
| GROUND | | | 999.594 | | |
| OFFSET | -3.546 | -3.000 | 0.000 | 3.000 | 4.597 |

## CHAINAGE 810

H.SCALE 1:250

V.SCALE 1:100
DATUM = 999

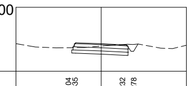


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 999.758 | 1000.140 | | 1000.020 | 999.925 |
| GROUND | | | 999.898 | | |
| OFFSET | -3.573 | -3.000 | 0.000 | 3.000 | 3.142 |

## CHAINAGE 800

H.SCALE 1:250

V.SCALE 1:100
DATUM = 999

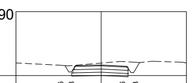


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1000.104 | 1000.335 | | 1000.232 | 1000.278 |
| GROUND | | | 1000.181 | | |
| OFFSET | -3.346 | -3.000 | 0.000 | 3.000 | 4.320 |

## CHAINAGE 790

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1000

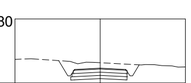


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1000.466 | 1000.468 | | 1000.436 | 1000.613 |
| GROUND | | | 1000.586 | | |
| OFFSET | -4.247 | -3.000 | 0.000 | 3.000 | 4.515 |

## CHAINAGE 780

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1000



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 1001.045 | 1000.632 | | 1000.632 | 1000.847 |
| GROUND | | | 1000.947 | | |
| OFFSET | -4.870 | -3.000 | 0.000 | 3.000 | 4.573 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY

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DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384

BLM _____ DATE _____

DOLMEN ENGINEERS CC _____ DATE _____

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 3:CROSS SECTIONS: CHAINAGE 420 TO 830

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

SHEET 4 OF 16

SCALE
N.T.S

DRAWING NUMBER
DE68/R3/CS/02

REVISION
0

## CHAINAGE 890

H.SCALE 1:250

V.SCALE 1:100
DATUM = 998



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 998.604 | 998.322 | | 998.331 | 998.561 |
| GROUND | | | 998.420 | | |
| OFFSET | -4.873 | -3.000 | 0.000 | 3.000 | 4.595 |

## CHAINAGE 880

H.SCALE 1:250

V.SCALE 1:100
DATUM = 998



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 998.485 | 998.434 | | 998.534 | 998.936 |
| GROUND | | | 998.560 | | |
| OFFSET | -3.105 | -3.000 | 0.000 | 3.000 | 4.853 |

## CHAINAGE 870

H.SCALE 1:250

V.SCALE 1:100
DATUM = 998

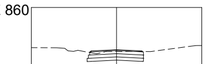


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 998.915 | 998.747 | | 998.747 | 998.836 |
| GROUND | | | 998.801 | | |
| OFFSET | -4.502 | -3.000 | 0.000 | 3.000 | 4.384 |

## CHAINAGE 860

H.SCALE 1:250

V.SCALE 1:100
DATUM = 998

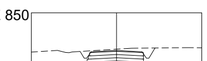


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 998.882 | 998.856 | | 998.959 | 998.933 |
| GROUND | | | 998.942 | | |
| OFFSET | -3.115 | -3.000 | 0.000 | 3.000 | 3.039 |

## CHAINAGE 850

H.SCALE 1:250

V.SCALE 1:100
DATUM = 998



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 999.186 | 999.171 | | 999.171 | 999.348 |
| GROUND | | | 999.293 | | |
| OFFSET | -4.272 | -3.000 | 0.000 | 3.000 | 4.516 |

## CHAINAGE 840

H.SCALE 1:250

V.SCALE 1:100
DATUM = 999

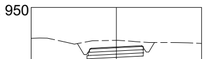


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 999.121 | 999.344 | | 999.383 | 999.324 |
| GROUND | | | 999.323 | | |
| OFFSET | -3.005 | -3.000 | 0.000 | 3.000 | 3.089 |

## CHAINAGE 950

H.SCALE 1:250

V.SCALE 1:100
DATUM = 996

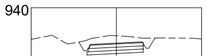


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 997.304 | 997.086 | | 997.206 | 997.354 |
| GROUND | | | 997.454 | | |
| OFFSET | -4.577 | -3.000 | 0.000 | 3.000 | 4.472 |

## CHAINAGE 940

H.SCALE 1:250

V.SCALE 1:100
DATUM = 996



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 997.394 | 997.241 | | 997.401 | 997.579 |
| GROUND | | | 997.697 | | |
| OFFSET | -4.420 | -3.000 | 0.000 | 3.000 | 4.518 |

## CHAINAGE 930

H.SCALE 1:250

V.SCALE 1:100
DATUM = 997

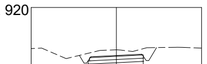


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 997.052 | 997.481 | | 997.601 | 997.793 |
| GROUND | | | 997.826 | | |
| OFFSET | -4.957 | -3.000 | 0.000 | 3.000 | 4.539 |

## CHAINAGE 920

H.SCALE 1:250

V.SCALE 1:100
DATUM = 997



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 997.750 | 997.686 | | 997.806 | 998.117 |
| GROUND | | | 998.012 | | |
| OFFSET | -4.345 | -3.000 | 0.000 | 3.000 | 4.715 |

## CHAINAGE 910

H.SCALE 1:250

V.SCALE 1:100
DATUM = 997



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 998.275 | 997.897 | | 998.017 | 998.174 |
| GROUND | | | 998.200 | | |
| OFFSET | -4.816 | -3.000 | 0.000 | 3.000 | 4.485 |

## CHAINAGE 900

H.SCALE 1:250

V.SCALE 1:100
DATUM = 997

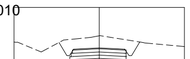


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 998.443 | 998.110 | | 998.190 | 998.447 |
| GROUND | | | 998.242 | | |
| OFFSET | -4.751 | -3.000 | 0.000 | 3.000 | 4.636 |

## CHAINAGE 1010

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995

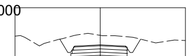


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.354 | 996.039 | | 996.039 | 996.378 |
| GROUND | | | 996.699 | | |
| OFFSET | -4.722 | -3.000 | 0.000 | 3.000 | 4.758 |

## CHAINAGE 1000

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.530 | 996.200 | | 996.200 | 996.526 |
| GROUND | | | 996.706 | | |
| OFFSET | -4.745 | -3.000 | 0.000 | 3.000 | 4.740 |

## CHAINAGE 990

H.SCALE 1:250

V.SCALE 1:100
DATUM = 996



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.648 | 996.366 | | 996.366 | 996.994 |
| GROUND | | | 996.866 | | |
| OFFSET | -4.673 | -3.000 | 0.000 | 3.000 | 5.193 |

## CHAINAGE 980

H.SCALE 1:250

V.SCALE 1:100
DATUM = 996

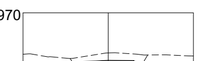


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.794 | 996.537 | | 996.537 | 996.981 |
| GROUND | | | 996.931 | | |
| OFFSET | -4.634 | -3.000 | 0.000 | 3.000 | 4.916 |

## CHAINAGE 970

H.SCALE 1:250

V.SCALE 1:100
DATUM = 996



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.864 | 996.715 | | 996.764 | 997.019 |
| GROUND | | | 997.118 | | |
| OFFSET | -4.459 | -3.000 | 0.000 | 3.000 | 4.633 |

## CHAINAGE 960

H.SCALE 1:250

V.SCALE 1:100
DATUM = 996

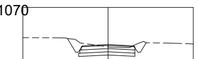


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 997.042 | 996.998 | | 997.018 | 997.169 |
| GROUND | | | 997.106 | | |
| OFFSET | -4.467 | -3.000 | 0.000 | 3.000 | 4.478 |

## CHAINAGE 1070

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 995.546 | 995.197 | | 995.197 | 995.343 |
| GROUND | | | 995.152 | | |
| OFFSET | -4.774 | -3.000 | 0.000 | 3.000 | 4.469 |

## CHAINAGE 1060

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 995.499 | 995.324 | | 995.324 | 995.462 |
| GROUND | | | 995.274 | | |
| OFFSET | -4.514 | -3.000 | 0.000 | 3.000 | 4.457 |

## CHAINAGE 1050

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995

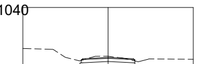


| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.302 | 995.452 | | 995.455 | 995.304 |
| GROUND | | | 995.343 | | |
| OFFSET | -3.106 | -3.000 | 0.000 | 3.000 | 3.226 |

## CHAINAGE 1040

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 996.510 | 995.538 | | 995.593 | 995.487 |
| GROUND | | | 995.711 | | |
| OFFSET | -3.111 | -3.000 | 0.000 | 3.000 | 3.159 |

## CHAINAGE 1030

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 995.747 | 995.736 | | 995.736 | 995.746 |
| GROUND | | | 995.906 | | |
| OFFSET | -4.266 | -3.000 | 0.000 | 3.000 | 4.265 |

## CHAINAGE 1020

H.SCALE 1:250

V.SCALE 1:100
DATUM = 995



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 995.939 | 995.889 | | 995.885 | 996.022 |
| GROUND | | | 996.051 | | |
| OFFSET | -3.007 | -3.000 | 0.000 | 3.000 | 4.456 |

## CHAINAGE 1130

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.453 | 994.660 | | 994.680 | 994.570 |
| GROUND | | | 994.559 | | |
| OFFSET | -3.161 | -3.000 | 0.000 | 3.000 | 3.203 |

## CHAINAGE 1120

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.482 | 994.652 | | 994.772 | 994.662 |
| GROUND | | | 994.671 | | |
| OFFSET | -3.255 | -3.000 | 0.000 | 3.000 | 3.259 |

## CHAINAGE 1110

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.597 | 994.750 | | 994.830 | 994.699 |
| GROUND | | | 994.587 | | |
| OFFSET | -3.229 | -3.000 | 0.000 | 3.000 | 3.105 |

## CHAINAGE 1100

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.825 | 994.693 | | 994.892 | 994.752 |
| GROUND | | | 994.857 | | |
| OFFSET | -3.942 | -3.000 | 0.000 | 3.000 | 3.041 |

## CHAINAGE 1090

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 995.071 | 994.962 | | 994.987 | 994.867 |
| GROUND | | | 994.789 | | |
| OFFSET | -4.413 | -3.000 | 0.000 | 3.000 | 3.111 |

## CHAINAGE 1080

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 995.294 | 995.077 | | 995.077 | 995.173 |
| GROUND | | | 994.930 | | |
| OFFSET | -4.575 | -3.000 | 0.000 | 3.000 | 4.395 |

## CHAINAGE 1190

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 993.954 | 994.127 | | 994.247 | 993.965 |
| GROUND | | | 993.978 | | |
| OFFSET | -3.260 | -3.000 | 0.000 | 3.000 | 3.423 |

## CHAINAGE 1180

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.073 | 994.165 | | 994.305 | 994.028 |
| GROUND | | | 994.045 | | |
| OFFSET | -3.168 | -3.000 | 0.000 | 3.000 | 3.416 |

## CHAINAGE 1170

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.056 | 994.249 | | 994.369 | 994.088 |
| GROUND | | | 994.120 | | |
| OFFSET | -3.290 | -3.000 | 0.000 | 3.000 | 3.422 |

## CHAINAGE 1160

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.194 | 994.318 | | 994.438 | 994.143 |
| GROUND | | | 994.128 | | |
| OFFSET | -3.186 | -3.000 | 0.000 | 3.000 | 3.442 |

## CHAINAGE 1150

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.120 | 994.383 | | 994.513 | 994.361 |
| GROUND | | | 994.369 | | |
| OFFSET | -3.410 | -3.000 | 0.000 | 3.000 | 3.243 |

## CHAINAGE 1140

H.SCALE 1:250

V.SCALE 1:100
DATUM = 994



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.471 | 994.474 | | 994.594 | 994.490 |
| GROUND | | | 994.539 | | |
| OFFSET | -3.004 | -3.000 | 0.000 | 3.000 | 3.195 |

## CHAINAGE 1240

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.022 | 993.903 | | 993.993 | 993.836 |
| GROUND | | | 993.908 | | |
| OFFSET | -4.429 | -3.000 | 0.000 | 3.000 | 3.101 |

## CHAINAGE 1230

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 994.046 | 993.945 | | 993.966 | 993.869 |
| GROUND | | | 993.988 | | |
| OFFSET | -4.402 | -3.000 | 0.000 | 3.000 | 3.146 |

## CHAINAGE 1220

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 993.938 | 993.897 | | 994.088 | 993.876 |
| GROUND | | | 993.918 | | |
| OFFSET | -3.074 | -3.000 | 0.000 | 3.000 | 3.306 |

## CHAINAGE 1210

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 993.886 | 993.888 | | 994.149 | 993.749 |
| GROUND | | | 993.892 | | |
| OFFSET | -3.214 | -3.000 | 0.000 | 3.000 | 3.599 |

## CHAINAGE 1200

H.SCALE 1:250

V.SCALE 1:100
DATUM = 993



| | | | | | |
|---|---|---|---|---|---|
| FINISHED | 993.877 | 993.875 | | 994.195 | 993.844 |
| GROUND | | | 993.945 | | |
| OFFSET | -3.267 | -3.000 | 0.000 | 3.000 | 3.228 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY

P.O.BOX 1593
SENWABARWANA
0790

Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384

BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 3:CROSS SECTIONS: CHAINAGE 840 TO 1240

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R3/CS/03

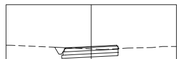
SHEET 5 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 50

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 993.004<br>992.977 | | 993.097<br>992.938 |
| GROUND | | 992.923 | |
| OFFSET | -4.291<br>-3.000 | 0.000 | 3.000<br>3.238 |

## CHAINAGE 110

H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 991.891<br>991.911 | | 991.911<br>991.877 |
| GROUND | | 991.640 | |
| OFFSET | -3.464<br>-3.000 | 0.000 | 3.000<br>3.061 |

## CHAINAGE 170

H.SCALE 1:250
V.SCALE 1:100
DATUM = 990



| | | | |
|---|---|---|---|
| FINISHED | 990.627<br>990.644 | | 990.844<br>990.844 |
| GROUND | | 990.621 | |
| OFFSET | -3.326<br>-3.000 | 0.000 | 3.000<br>3.002 |

## CHAINAGE 230

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.677<br>989.898 | | 989.778<br>989.633 |
| GROUND | | 989.665 | |
| OFFSET | -3.332<br>-3.000 | 0.000 | 3.000<br>3.218 |

## CHAINAGE 290

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.772<br>988.719 | | 988.788<br>988.750 |
| GROUND | | 988.699 | |
| OFFSET | -4.330<br>-3.000 | 0.000 | 3.000<br>3.071 |

## CHAINAGE 350

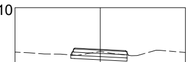
H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.929<br>987.774 | | 987.884<br>987.866 |
| GROUND | | 987.689 | |
| OFFSET | -4.483<br>-3.000 | 0.000 | 3.000<br>3.018 |

## CHAINAGE 410

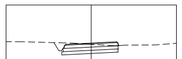
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.782<br>987.103 | | 986.983<br>986.761 |
| GROUND | | 986.945 | |
| OFFSET | -3.481<br>-3.000 | 0.000 | 3.000<br>3.333 |

## CHAINAGE 40

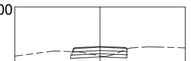
H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 993.234<br>993.154 | | 993.274<br>993.096 |
| GROUND | | 993.156 | |
| OFFSET | -4.389<br>-3.000 | 0.000 | 3.000<br>3.267 |

## CHAINAGE 100

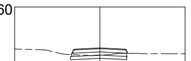
H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 991.996<br>992.088 | | 992.102<br>992.015 |
| GROUND | | 991.707 | |
| OFFSET | -3.276<br>-3.000 | 0.000 | 3.000<br>3.131 |

## CHAINAGE 160

H.SCALE 1:250
V.SCALE 1:100
DATUM = 990



| | | | |
|---|---|---|---|
| FINISHED | 990.764<br>991.022 | | 991.022<br>990.835 |
| GROUND | | 990.737 | |
| OFFSET | -3.387<br>-3.000 | 0.000 | 3.000<br>3.004 |

## CHAINAGE 220

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.766<br>990.076 | | 989.956<br>989.818 |
| GROUND | | 989.793 | |
| OFFSET | -3.465<br>-3.000 | 0.000 | 3.000<br>3.208 |

## CHAINAGE 280

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 989.095<br>988.891 | | 988.891<br>988.958 |
| GROUND | | 988.998 | |
| OFFSET | -4.556<br>-3.000 | 0.000 | 3.000<br>4.351 |

## CHAINAGE 340

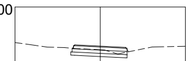
H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 988.047<br>987.920 | | 988.040<br>988.124 |
| GROUND | | 988.141 | |
| OFFSET | -4.440<br>-3.000 | 0.000 | 3.000<br>4.376 |

## CHAINAGE 400

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.064<br>987.224 | | 987.104<br>986.897 |
| GROUND | | 986.994 | |
| OFFSET | -3.240<br>-3.000 | 0.000 | 3.000<br>3.311 |

## CHAINAGE 30

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 993.411<br>993.332 | | 993.452<br>993.331 |
| GROUND | | 993.366 | |
| OFFSET | -4.388<br>-3.000 | 0.000 | 3.000<br>3.181 |

## CHAINAGE 90

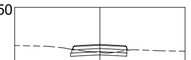
H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 992.216<br>992.298 | | 992.301<br>992.089 |
| GROUND | | 992.188 | |
| OFFSET | -3.113<br>-3.000 | 0.000 | 3.000<br>3.384 |

## CHAINAGE 150

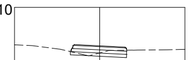
H.SCALE 1:250
V.SCALE 1:100
DATUM = 990



| | | | |
|---|---|---|---|
| FINISHED | 991.026<br>991.200 | | 991.200<br>991.067 |
| GROUND | | 990.879 | |
| OFFSET | -3.258<br>-3.000 | 0.000 | 3.000<br>3.320 |

## CHAINAGE 210

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.927<br>990.254 | | 990.134<br>989.988 |
| GROUND | | 989.890 | |
| OFFSET | -3.490<br>-3.000 | 0.000 | 3.000<br>3.219 |

## CHAINAGE 270

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.818<br>989.008 | | 989.068<br>989.160 |
| GROUND | | 988.896 | |
| OFFSET | -3.375<br>-3.000 | 0.000 | 3.000<br>4.388 |

## CHAINAGE 330

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 988.194<br>988.071 | | 988.191<br>987.990 |
| GROUND | | 987.635 | |
| OFFSET | -4.433<br>-3.000 | 0.000 | 3.000<br>3.513 |

## CHAINAGE 390

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.383<br>987.349 | | 987.229<br>987.082 |
| GROUND | | 987.194 | |
| OFFSET | -4.301<br>-3.000 | 0.000 | 3.000<br>3.221 |

## CHAINAGE 20

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 993.575<br>993.510 | | 993.617<br>993.616 |
| GROUND | | 993.719 | |
| OFFSET | -4.348<br>-3.000 | 0.000 | 3.000<br>4.249 |

## CHAINAGE 80

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 992.244<br>992.340 | | 992.364<br>992.461 |
| GROUND | | 992.387 | |
| OFFSET | -3.154<br>-3.000 | 0.000 | 3.000<br>3.154 |

## CHAINAGE 140

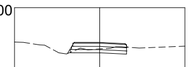
H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 991.248<br>991.358 | | 991.378<br>991.178 |
| GROUND | | 991.210 | |
| OFFSET | -3.195<br>-3.000 | 0.000 | 3.000<br>3.311 |

## CHAINAGE 200

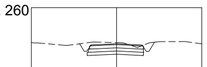
H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.844<br>990.314 | | 990.311<br>990.145 |
| GROUND | | 990.061 | |
| OFFSET | -3.795<br>-3.000 | 0.000 | 3.000<br>3.249 |

## CHAINAGE 260

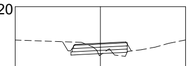
H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 989.304<br>989.251 | | 989.345<br>989.380 |
| GROUND | | 989.359 | |
| OFFSET | -4.331<br>-3.000 | 0.000 | 3.000<br>4.451 |

## CHAINAGE 320

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 988.356<br>988.227 | | 988.327<br>988.302 |
| GROUND | | 987.732 | |
| OFFSET | -4.444<br>-3.000 | 0.000 | 3.000<br>3.018 |

## CHAINAGE 380

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.646<br>987.479 | | 987.299<br>987.247 |
| GROUND | | 987.331 | |
| OFFSET | -4.501<br>-3.000 | 0.000 | 3.000<br>3.188 |

## CHAINAGE 10

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 993.711<br>993.607 | | 993.723<br>993.684 |
| GROUND | | 993.704 | |
| OFFSET | -4.286<br>-3.000 | 0.000 | 3.000<br>3.099 |

## CHAINAGE 70

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 992.452<br>992.552 | | 992.741<br>992.648 |
| GROUND | | 992.570 | |
| OFFSET | -3.103<br>-3.000 | 0.000 | 3.000<br>3.140 |

## CHAINAGE 130

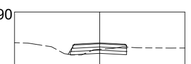
H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 991.383<br>991.585 | | 991.561<br>991.191 |
| GROUND | | 991.235 | |
| OFFSET | -3.244<br>-3.000 | 0.000 | 3.000<br>3.208 |

## CHAINAGE 190

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 990.016<br>990.469 | | 990.489<br>990.304 |
| GROUND | | 990.249 | |
| OFFSET | -3.720<br>-3.000 | 0.000 | 3.000<br>3.202 |

## CHAINAGE 250

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.115<br>988.955 | | 989.433<br>989.542 |
| GROUND | | 989.392 | |
| OFFSET | -3.577<br>-3.000 | 0.000 | 3.000<br>4.429 |

## CHAINAGE 310

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.552<br>988.386 | | 988.526<br>988.505 |
| GROUND | | 988.420 | |
| OFFSET | -4.498<br>-3.000 | 0.000 | 3.000<br>3.922 |

## CHAINAGE 370

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.653<br>987.613 | | 987.493<br>987.387 |
| GROUND | | 987.427 | |
| OFFSET | -3.090<br>-3.000 | 0.000 | 3.000<br>3.204 |

## CHAINAGE 0

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 994.005<br>993.865 | | 993.865<br>993.839 |
| GROUND | | 993.925 | |
| OFFSET | -4.505<br>-3.000 | 0.000 | 3.000<br>3.040 |

## CHAINAGE 60

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 992.719<br>992.799 | | 992.819<br>992.764 |
| GROUND | | 992.703 | |
| OFFSET | -3.126<br>-3.000 | 0.000 | 3.000<br>3.223 |

## CHAINAGE 120

H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 991.457<br>991.552 | | 991.478<br>991.449 |
| GROUND | | 991.268 | |
| OFFSET | -3.168<br>-3.000 | 0.000 | 3.000<br>3.008 |

## CHAINAGE 180

H.SCALE 1:250
V.SCALE 1:100
DATUM = 990



| | | | |
|---|---|---|---|
| FINISHED | 990.416<br>990.667 | | 990.667<br>990.563 |
| GROUND | | 990.370 | |
| OFFSET | -3.377<br>-3.000 | 0.000 | 3.000<br>3.193 |

## CHAINAGE 240

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.522<br>989.571 | | 989.601<br>989.552 |
| GROUND | | 989.484 | |
| OFFSET | -3.588<br>-3.000 | 0.000 | 3.000<br>3.074 |

## CHAINAGE 300

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.422<br>988.550 | | 988.570<br>988.514 |
| GROUND | | 988.073 | |
| OFFSET | -3.183<br>-3.000 | 0.000 | 3.000<br>3.550 |

## CHAINAGE 360

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.549<br>987.631 | | 987.680<br>987.640 |
| GROUND | | 987.428 | |
| OFFSET | -3.123<br>-3.000 | 0.000 | 3.000<br>3.060 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

DESIGNED BY M.P
CHECKED BY M.P
DRAWN BY T.M
CHECKED BY M.P

BLOUBERG LOCAL MUNICIPALITY
P.O.BOX 1593
SENWABARWANA
0790
Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS
DOLMEN CONSULTING ENGINEERS
P.O. BOX 468
BENDOR PARK
0713
Tel: 015 295 4885
Fax: 015 295 8384

BLM DATE
DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 4:CROSS SECTIONS: CHAINAGE 0 TO 410

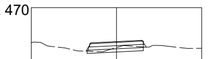
TENDER (Full signature)
BLM 20 / /
For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R4/CS/01

SHEET 6 OF 16
SCALE
N.T.S
REVISION 0

## CHAINAGE 470

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.954<br>986.347 | | 986.467<br>986.146 |
| GROUND | | 986.125 | |
| OFFSET | -3.000<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.481 |

## CHAINAGE 530

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.777<br>985.885 | | 985.865<br>986.025 |
| GROUND | | 985.730 | |
| OFFSET | -3.132<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.099 |

## CHAINAGE 590

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.386<br>985.537 | | 985.562<br>985.414 |
| GROUND | | 985.344 | |
| OFFSET | -3.226<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.222 |

## CHAINAGE 650

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.576<br>985.364 | | 985.364<br>985.395 |
| GROUND | | 985.402 | |
| OFFSET | -4.568<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.040 |

## CHAINAGE 710

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.652<br>985.449 | | 985.345<br>985.329 |
| GROUND | | 985.477 | |
| OFFSET | -4.554<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.226 |

## CHAINAGE 770

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.405<br>985.481 | | 985.481<br>985.119 |
| GROUND | | 985.175 | |
| OFFSET | -3.115<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.542 |

## CHAINAGE 830

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.672<br>985.767 | | 985.771<br>985.153 |
| GROUND | | 985.232 | |
| OFFSET | -3.044<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.927 |

## CHAINAGE 460

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.349<br>986.442 | | 986.560<br>986.360 |
| GROUND | | 986.357 | |
| OFFSET | -3.144<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.202 |

## CHAINAGE 520

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.705<br>985.834 | | 985.884<br>985.666 |
| GROUND | | 985.730 | |
| OFFSET | -3.209<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.015 |

## CHAINAGE 580

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.445<br>985.561 | | 985.677<br>985.366 |
| GROUND | | 985.407 | |
| OFFSET | -3.204<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.487 |

## CHAINAGE 640

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.648<br>985.382 | | 985.306<br>985.229 |
| GROUND | | 985.493 | |
| OFFSET | -4.648<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.222 |

## CHAINAGE 700

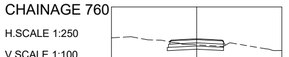
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.748<br>985.459 | | 985.338<br>985.446 |
| GROUND | | 985.535 | |
| OFFSET | -4.686<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.413 |

## CHAINAGE 760

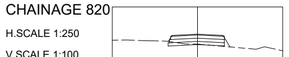
H.SCALE 1:250
V.SCALE 1:100
DATUM = 984



| | | | |
|---|---|---|---|
| FINISHED | 985.369<br>985.448 | | 985.448<br>985.206 |
| GROUND | | 985.226 | |
| OFFSET | -3.134<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.383 |

## CHAINAGE 820

H.SCALE 1:250
V.SCALE 1:100
DATUM = 984



| | | | |
|---|---|---|---|
| FINISHED | 985.660<br>985.760 | | 985.664<br>985.124 |
| GROUND | | 985.298 | |
| OFFSET | -3.167<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.911 |

## CHAINAGE 450

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.680<br>986.542 | | 986.672<br>986.447 |
| GROUND | | 986.350 | |
| OFFSET | -4.457<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.277 |

## CHAINAGE 510

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.929<br>986.008 | | 986.008<br>985.868 |
| GROUND | | 985.897 | |
| OFFSET | -3.104<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.239 |

## CHAINAGE 570

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.455<br>985.629 | | 985.749<br>985.476 |
| GROUND | | 985.436 | |
| OFFSET | -3.262<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.409 |

## CHAINAGE 630

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.464<br>985.405 | | 985.401<br>985.323 |
| GROUND | | 985.390 | |
| OFFSET | -4.339<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.126 |

## CHAINAGE 690

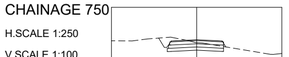
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.828<br>985.441 | | 985.334<br>985.520 |
| GROUND | | 985.598 | |
| OFFSET | -4.831<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.528 |

## CHAINAGE 750

H.SCALE 1:250
V.SCALE 1:100
DATUM = 984



| | | | |
|---|---|---|---|
| FINISHED | 985.556<br>985.419 | | 985.419<br>985.142 |
| GROUND | | 985.341 | |
| OFFSET | -4.455<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.418 |

## CHAINAGE 810

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.243<br>985.338 | | 985.028<br>985.101 |
| GROUND | | 985.147 | |
| OFFSET | -3.127<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.790 |

## CHAINAGE 440

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.822<br>986.886 | | 986.844<br>986.644 |
| GROUND | | 986.538 | |
| OFFSET | -3.188<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.402 |

## CHAINAGE 500

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.048<br>986.086 | | 986.127<br>985.829 |
| GROUND | | 986.063 | |
| OFFSET | -3.057<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.418 |

## CHAINAGE 560

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.580<br>985.680 | | 985.802<br>985.469 |
| GROUND | | 985.466 | |
| OFFSET | -3.162<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.499 |

## CHAINAGE 620

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.305<br>985.353 | | 985.431<br>985.230 |
| GROUND | | 985.396 | |
| OFFSET | -3.114<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.108 |

## CHAINAGE 680

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.668<br>985.370 | | 985.335<br>985.507 |
| GROUND | | 985.561 | |
| OFFSET | -4.697<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.508 |

## CHAINAGE 740

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.384<br>985.304 | | 985.394<br>985.333 |
| GROUND | | 985.246 | |
| OFFSET | -3.088<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.091 |

## CHAINAGE 800

H.SCALE 1:250
V.SCALE 1:100
DATUM = 984



| | | | |
|---|---|---|---|
| FINISHED | 985.296<br>985.259 | | 985.591<br>985.073 |
| GROUND | | 985.170 | |
| OFFSET | -3.088<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.777 |

## CHAINAGE 430

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.932<br>986.992 | | 986.747<br>986.504 |
| GROUND | | 986.545 | |
| OFFSET | -3.100<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.311 |

## CHAINAGE 490

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.063<br>986.169 | | 986.261<br>986.064 |
| GROUND | | 986.176 | |
| OFFSET | -3.129<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.296 |

## CHAINAGE 550

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.751<br>985.738 | | 985.848<br>985.605 |
| GROUND | | 985.602 | |
| OFFSET | -4.269<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.493 |

## CHAINAGE 610

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.592<br>985.462 | | 985.462<br>985.350 |
| GROUND | | 985.384 | |
| OFFSET | -4.445<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.108 |

## CHAINAGE 670

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.780<br>985.341 | | 985.341<br>985.384 |
| GROUND | | 985.484 | |
| OFFSET | -4.908<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.314 |

## CHAINAGE 730

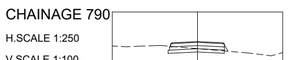
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.170<br>985.373 | | 985.373<br>985.337 |
| GROUND | | 985.296 | |
| OFFSET | -3.205<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.054 |

## CHAINAGE 790

H.SCALE 1:250
V.SCALE 1:100
DATUM = 984



| | | | |
|---|---|---|---|
| FINISHED | 985.322<br>985.284 | | 985.167<br>985.164 |
| GROUND | | 985.280 | |
| OFFSET | -3.244<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.056 |

## CHAINAGE 420

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.866<br>986.909 | | 986.888<br>986.688 |
| GROUND | | 986.701 | |
| OFFSET | -3.132<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.400 |

## CHAINAGE 480

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.104<br>986.256 | | 986.370<br>985.909 |
| GROUND | | 986.180 | |
| OFFSET | -3.227<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.208 |

## CHAINAGE 540

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.907<br>985.799 | | 985.688<br>985.752 |
| GROUND | | 985.816 | |
| OFFSET | -4.411<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.108 |

## CHAINAGE 600

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.378<br>985.398 | | 985.498<br>985.339 |
| GROUND | | 985.341 | |
| OFFSET | -3.085<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.223 |

## CHAINAGE 660

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.555<br>985.350 | | 985.350<br>985.602 |
| GROUND | | 985.529 | |
| OFFSET | -4.558<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.478 |

## CHAINAGE 720

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.516<br>985.390 | | 985.357<br>985.376 |
| GROUND | | 985.378 | |
| OFFSET | -3.142<br>-3.000 | 0.000<br>0.000 | 3.000<br>4.278 |

## CHAINAGE 780

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.515<br>985.518 | | 985.138<br>985.138 |
| GROUND | | 985.185 | |
| OFFSET | -4.247<br>-3.000 | 0.000<br>0.000 | 3.000<br>3.991 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

DESIGNED BY M.P
CHECKED BY M.P
DRAWN BY T.M
CHECKED BY M.P

BLOUBERG LOCAL MUNICIPALITY
P.O.BOX 1593
SENWABARWANA
0790
Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS
DOLMEN CONSULTING ENGINEERS
P.O. BOX 468
BENDOR PARK
0713
Tel: 015 295 4885
Fax: 015 295 8384

BLM DATE
DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 4:CROSS SECTIONS: CHAINAGE 420 TO 830

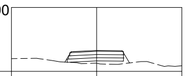
TENDER (Full signature)
20 / /
BLM
20 / /
For: DOLMEN ENGINEERS CC

SHEET 7 OF 16
SCALE N.T.S
DRAWING NUMBER DE68/R4/CS/02
REVISION 0

## CHAINAGE 890

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

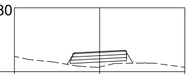


| | | | |
|---|---|---|---|
| FINISHED | 985.434<br>985.822 | | 985.070<br>985.395 |
| GROUND | | 985.381 | |
| OFFSET | -3.731<br>-3.000 | 0.000 | 3.000<br>3.863 |

## CHAINAGE 880

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

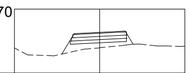


| | | | |
|---|---|---|---|
| FINISHED | 985.344<br>985.859 | | 986.005<br>985.397 |
| GROUND | | 985.218 | |
| OFFSET | -3.811<br>-3.000 | 0.000 | 3.000<br>3.911 |

## CHAINAGE 870

H.SCALE 1:250

V.SCALE 1:100
DATUM = 984

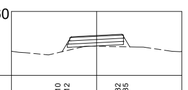


| | | | |
|---|---|---|---|
| FINISHED | 984.890<br>985.846 | | 985.968<br>985.350 |
| GROUND | | 985.186 | |
| OFFSET | -4.417<br>-3.000 | 0.000 | 3.000<br>3.927 |

## CHAINAGE 860

H.SCALE 1:250

V.SCALE 1:100
DATUM = 984

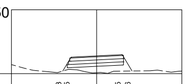


| | | | |
|---|---|---|---|
| FINISHED | 985.110<br>985.812 | | 985.932<br>985.335 |
| GROUND | | 985.364 | |
| OFFSET | -4.052<br>-3.000 | 0.000 | 3.000<br>3.895 |

## CHAINAGE 850

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

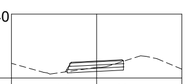


| | | | |
|---|---|---|---|
| FINISHED | 985.123<br>985.775 | | 985.895<br>985.126 |
| GROUND | | 985.045 | |
| OFFSET | -3.978<br>-3.000 | 0.000 | 3.000<br>4.153 |

## CHAINAGE 840

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

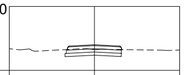


| | | | |
|---|---|---|---|
| FINISHED | 985.287<br>985.736 | | 985.658<br>985.183 |
| GROUND | | 985.499 | |
| OFFSET | -3.905<br>-3.000 | 0.000 | 3.000<br>3.113 |

## CHAINAGE 950

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

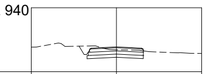


| | | | |
|---|---|---|---|
| FINISHED | 985.978<br>986.179 | | 986.142<br>985.976 |
| GROUND | | 985.873 | |
| OFFSET | -3.617<br>-3.000 | 0.000 | 3.000<br>3.249 |

## CHAINAGE 940

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

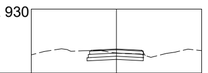


| | | | |
|---|---|---|---|
| FINISHED | 986.198<br>986.105 | | 986.105<br>985.976 |
| GROUND | | 986.032 | |
| OFFSET | -4.389<br>-3.000 | 0.000 | 3.000<br>3.194 |

## CHAINAGE 930

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

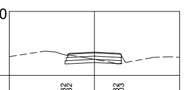


| | | | |
|---|---|---|---|
| FINISHED | 986.054<br>986.054 | | 986.069<br>985.818 |
| GROUND | | 985.692 | |
| OFFSET | -3.923<br>-3.000 | 0.000 | 3.000<br>3.376 |

## CHAINAGE 920

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

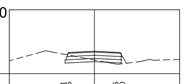


| | | | |
|---|---|---|---|
| FINISHED | 986.032<br>986.032 | | 986.023<br>985.803 |
| GROUND | | 985.751 | |
| OFFSET | -3.100<br>-3.000 | 0.000 | 3.000<br>3.224 |

## CHAINAGE 910

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

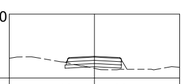


| | | | |
|---|---|---|---|
| FINISHED | 986.081<br>986.081 | | 986.095<br>985.460 |
| GROUND | | 985.640 | |
| OFFSET | -3.771<br>-3.000 | 0.000 | 3.000<br>3.759 |

## CHAINAGE 900

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

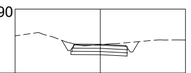


| | | | |
|---|---|---|---|
| FINISHED | 985.628<br>985.628 | | 985.648<br>985.406 |
| GROUND | | 985.453 | |
| OFFSET | -3.440<br>-3.000 | 0.000 | 3.000<br>3.826 |

## CHAINAGE 990

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

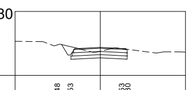


| | | | |
|---|---|---|---|
| FINISHED | 986.535<br>986.356 | | 986.289<br>986.474 |
| GROUND | | 986.332 | |
| OFFSET | -4.519<br>-3.000 | 0.000 | 3.000<br>4.527 |

## CHAINAGE 980

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

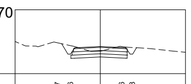


| | | | |
|---|---|---|---|
| FINISHED | 986.448<br>986.253 | | 986.253<br>986.250 |
| GROUND | | 986.130 | |
| OFFSET | -4.544<br>-3.000 | 0.000 | 3.000<br>3.944 |

## CHAINAGE 970

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

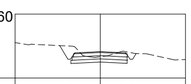


| | | | |
|---|---|---|---|
| FINISHED | 986.407<br>986.216 | | 986.216<br>986.218 |
| GROUND | | 986.055 | |
| OFFSET | -4.537<br>-3.000 | 0.000 | 3.000<br>4.254 |

## CHAINAGE 960

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985

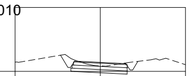


| | | | |
|---|---|---|---|
| FINISHED | 986.521<br>986.179 | | 986.179<br>986.149 |
| GROUND | | 986.000 | |
| OFFSET | -4.763<br>-3.000 | 0.000 | 3.000<br>4.205 |

## CHAINAGE 1010

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986

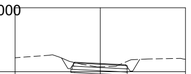


| | | | |
|---|---|---|---|
| FINISHED | 986.759<br>986.483 | | 986.363<br>986.469 |
| GROUND | | 986.257 | |
| OFFSET | -4.665<br>-3.000 | 0.000 | 3.000<br>4.410 |

## CHAINAGE 1000

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.643<br>986.446 | | 986.326<br>986.578 |
| GROUND | | 986.229 | |
| OFFSET | -4.545<br>-3.000 | 0.000 | 3.000<br>4.629 |

## CHAINAGE 990

H.SCALE 1:250

V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.535<br>986.356 | | 986.289<br>986.474 |
| GROUND | | 986.332 | |
| OFFSET | -4.519<br>-3.000 | 0.000 | 3.000<br>4.527 |

## CHAINAGE 1010

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.759<br>986.483 | | 986.363<br>986.469 |
| GROUND | | 986.257 | |
| OFFSET | -4.665<br>-3.000 | 0.000 | 3.000<br>4.410 |

## CHAINAGE 1020

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.663<br>986.519 | | 986.399<br>986.466 |
| GROUND | | 986.416 | |
| OFFSET | -4.465<br>-3.000 | 0.000 | 3.000<br>4.349 |

## CHAINAGE 1030

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.995<br>986.556 | | 986.436<br>986.580 |
| GROUND | | 986.621 | |
| OFFSET | -4.909<br>-3.000 | 0.000 | 3.000<br>4.465 |

## CHAINAGE 1040

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.882<br>986.573 | | 986.473<br>986.707 |
| GROUND | | 986.802 | |
| OFFSET | -4.715<br>-3.000 | 0.000 | 3.000<br>4.602 |

## CHAINAGE 1050

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.412<br>986.538 | | 986.510<br>986.895 |
| GROUND | | 986.846 | |
| OFFSET | -5.562<br>-3.000 | 0.000 | 3.000<br>4.828 |

## CHAINAGE 1060

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.276<br>986.546 | | 986.546<br>987.083 |
| GROUND | | 986.883 | |
| OFFSET | -5.345<br>-3.000 | 0.000 | 3.000<br>5.054 |

## CHAINAGE 1070

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.710<br>986.583 | | 986.583<br>987.013 |
| GROUND | | 986.880 | |
| OFFSET | -4.440<br>-3.000 | 0.000 | 3.000<br>4.884 |

## CHAINAGE 1080

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.031<br>986.620 | | 986.620<br>987.043 |
| GROUND | | 986.955 | |
| OFFSET | -4.886<br>-3.000 | 0.000 | 3.000<br>4.885 |

## CHAINAGE 1090

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.009<br>986.657 | | 986.657<br>987.245 |
| GROUND | | 987.026 | |
| OFFSET | -4.778<br>-3.000 | 0.000 | 3.000<br>5.132 |

## CHAINAGE 1100

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.124<br>986.693 | | 986.693<br>987.228 |
| GROUND | | 987.048 | |
| OFFSET | -4.896<br>-3.000 | 0.000 | 3.000<br>5.052 |

## CHAINAGE 1110

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.218<br>986.730 | | 986.730<br>987.058 |
| GROUND | | 987.058 | |
| OFFSET | -4.982<br>-3.000 | 0.000 | 3.000<br>4.741 |

## CHAINAGE 1120

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.211<br>986.766 | | 986.766<br>986.721 |
| GROUND | | 987.073 | |
| OFFSET | -4.917<br>-3.000 | 0.000 | 3.000<br>4.183 |

## CHAINAGE 1130

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.283<br>986.800 | | 986.900<br>986.857 |
| GROUND | | 987.102 | |
| OFFSET | -4.974<br>-3.000 | 0.000 | 3.000<br>4.335 |

## CHAINAGE 1140

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.491<br>986.833 | | 986.902<br>986.877 |
| GROUND | | 987.090 | |
| OFFSET | -5.238<br>-3.000 | 0.000 | 3.000<br>4.362 |

## CHAINAGE 1150

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.274<br>986.863 | | 986.983<br>987.131 |
| GROUND | | 986.908 | |
| OFFSET | -4.866<br>-3.000 | 0.000 | 3.000<br>4.472 |

## CHAINAGE 1160

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.212<br>986.892 | | 987.013<br>987.143 |
| GROUND | | 986.735 | |
| OFFSET | -4.730<br>-3.000 | 0.000 | 3.000<br>4.333 |

## CHAINAGE 1170

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.225<br>986.919 | | 987.032<br>986.802 |
| GROUND | | 986.770 | |
| OFFSET | -4.709<br>-3.000 | 0.000 | 3.000<br>4.344 |

## CHAINAGE 1180

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.169<br>986.944 | | 987.064<br>986.844 |
| GROUND | | 986.850 | |
| OFFSET | -4.589<br>-3.000 | 0.000 | 3.000<br>3.534 |

## CHAINAGE 1190

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.920<br>986.997 | | 987.067<br>986.909 |
| GROUND | | 986.765 | |
| OFFSET | -3.220<br>-3.000 | 0.000 | 3.000<br>3.051 |

## CHAINAGE 1200

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.196<br>986.998 | | 987.078<br>986.999 |
| GROUND | | 986.964 | |
| OFFSET | -4.662<br>-3.000 | 0.000 | 3.000<br>3.118 |

## CHAINAGE 1210

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.414<br>987.007 | | 987.026<br>986.923 |
| GROUND | | 986.960 | |
| OFFSET | -4.860<br>-3.000 | 0.000 | 3.000<br>3.154 |

## CHAINAGE 1220

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.380<br>987.025 | | 987.025<br>986.969 |
| GROUND | | 986.931 | |
| OFFSET | -4.782<br>-3.000 | 0.000 | 3.000<br>3.084 |

## CHAINAGE 1230

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.476<br>987.040 | | 987.040<br>987.136 |
| GROUND | | 986.957 | |
| OFFSET | -4.904<br>-3.000 | 0.000 | 3.000<br>4.394 |

## CHAINAGE 1240

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.642<br>987.054 | | 987.054<br>987.243 |
| GROUND | | 987.051 | |
| OFFSET | -5.132<br>-3.000 | 0.000 | 3.000<br>4.534 |

## CHAINAGE 1250

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.572<br>987.066 | | 987.066<br>987.360 |
| GROUND | | 987.069 | |
| OFFSET | -5.009<br>-3.000 | 0.000 | 3.000<br>4.691 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

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BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 4:CROSS SECTIONS: CHAINAGE 840 TO 1250

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R4/CS/03

SHEET 8 OF 16

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N.T.S

REVISION
0

## CHAINAGE 1310

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.916 | 987.908 | | 987.098 | 987.428 | |
| GROUND | | | 987.314 | | | |
| OFFSET | -5.476 | -3.000 | 0.000 | 3.000 | 4.745 | |

## CHAINAGE 1300

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.790 | 987.098 | | 987.098 | 987.488 | |
| GROUND | | | 987.291 | | | |
| OFFSET | -5.289 | -3.000 | 0.000 | 3.000 | 4.836 | |

## CHAINAGE 1290

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.666 | 987.095 | | 987.095 | 987.368 | |
| GROUND | | | 987.409 | | | |
| OFFSET | -5.106 | -3.000 | 0.000 | 3.000 | 4.660 | |

## CHAINAGE 1280

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.492 | 987.090 | | 987.090 | 987.279 | |
| GROUND | | | 987.318 | | | |
| OFFSET | -4.852 | -3.000 | 0.000 | 3.000 | 4.533 | |

## CHAINAGE 1270

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.384 | 987.084 | | 987.084 | 987.245 | |
| GROUND | | | 987.160 | | | |
| OFFSET | -4.700 | -3.000 | 0.000 | 3.000 | 4.491 | |

## CHAINAGE 1260

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.446 | 987.076 | | 987.076 | 987.279 | |
| GROUND | | | 987.229 | | | |
| OFFSET | -4.805 | -3.000 | 0.000 | 3.000 | 4.555 | |

## CHAINAGE 1370

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.825 | 987.064 | | 987.064 | 987.748 | |
| GROUND | | | 987.729 | | | |
| OFFSET | -5.392 | -3.000 | 0.000 | 3.000 | 5.276 | |

## CHAINAGE 1360

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.600 | 987.074 | | 987.074 | 987.404 | |
| GROUND | | | 987.391 | | | |
| OFFSET | -5.038 | -3.000 | 0.000 | 3.000 | 4.744 | |

## CHAINAGE 1350

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.742 | 987.083 | | 987.083 | 987.191 | |
| GROUND | | | 987.193 | | | |
| OFFSET | -5.238 | -3.000 | 0.000 | 3.000 | 4.413 | |

## CHAINAGE 1340

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.827 | 987.089 | | 987.089 | 987.148 | |
| GROUND | | | 987.105 | | | |
| OFFSET | -5.356 | -3.000 | 0.000 | 3.000 | 4.338 | |

## CHAINAGE 1330

H.SCALE 1:250

V.SCALE 1:100

DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.887 | 987.094 | | 987.094 | 987.467 | |
| GROUND | | | 987.160 | | | |
| OFFSET | -5.439 | -3.000 | 0.000 | 3.000 | 4.809 | |

## CHAINAGE 1320

H.SCALE 1:250

V.SCALE 1:100

DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.957 | 987.097 | | 987.097 | 987.752 | |
| GROUND | | | 987.270 | | | |
| OFFSET | -5.540 | -3.000 | 0.000 | 3.000 | 5.232 | |

## CHAINAGE 1430

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.270 | 987.043 | | 986.966 | 986.954 | |
| GROUND | | | 987.254 | | | |
| OFFSET | -4.580 | -3.000 | 0.000 | 3.000 | 4.202 | |

## CHAINAGE 1420

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.136 | 986.991 | | 986.985 | 987.447 | |
| GROUND | | | 987.133 | | | |
| OFFSET | -4.468 | -3.000 | 0.000 | 3.000 | 4.943 | |

## CHAINAGE 1410

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.120 | 987.004 | | 987.004 | 987.686 | |
| GROUND | | | 987.106 | | | |
| OFFSET | -4.425 | -3.000 | 0.000 | 3.000 | 5.273 | |

## CHAINAGE 1400

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.309 | 987.022 | | 987.022 | 987.617 | |
| GROUND | | | 987.575 | | | |
| OFFSET | -4.681 | -3.000 | 0.000 | 3.000 | 5.443 | |

## CHAINAGE 1390

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.385 | 987.038 | | 987.038 | 987.579 | |
| GROUND | | | 987.433 | | | |
| OFFSET | -4.772 | -3.000 | 0.000 | 3.000 | 5.063 | |

## CHAINAGE 1380

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.470 | 987.052 | | 987.052 | 987.570 | |
| GROUND | | | 987.420 | | | |
| OFFSET | -4.878 | -3.000 | 0.000 | 3.000 | 5.028 | |

## CHAINAGE 1470

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 986.715 | 986.967 | | 986.890 | 986.951 | |
| GROUND | | | 986.864 | | | |
| OFFSET | -3.376 | -3.000 | 0.000 | 3.000 | 4.342 | |

## CHAINAGE 1460

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 986.953 | 987.029 | | 986.909 | 987.011 | |
| GROUND | | | 986.882 | | | |
| OFFSET | -3.159 | -3.000 | 0.000 | 3.000 | 4.404 | |

## CHAINAGE 1450

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.017 | 987.048 | | 986.928 | 987.206 | |
| GROUND | | | 987.277 | | | |
| OFFSET | -3.046 | -3.000 | 0.000 | 3.000 | 4.667 | |

## CHAINAGE 1440

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 987.274 | 987.067 | | 986.947 | 987.091 | |
| GROUND | | | 987.112 | | | |
| OFFSET | -4.560 | -3.000 | 0.000 | 3.000 | 4.466 | |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
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| | |
|---|---|
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BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 4:CROSS SECTIONS: CHAINAGE 1260 TO 1470

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R4/CS/04

SHEET 9 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 50

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.012<br>986.855 | | 986.835<br>986.885 |
| GROUND | | 986.715 | |
| OFFSET | -4.515<br>-3.000 | 0.000 | 3.000<br>4.325 |

## CHAINAGE 110

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.140<br>986.931 | | 986.931<br>986.811 |
| GROUND | | 987.184 | |
| OFFSET | -4.563<br>-3.000 | 0.000 | 3.000<br>3.181 |

## CHAINAGE 40

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986

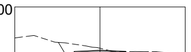


| | | | |
|---|---|---|---|
| FINISHED | 987.073<br>986.819 | | 986.819<br>986.942 |
| GROUND | | 986.785 | |
| OFFSET | -4.630<br>-3.000 | 0.000 | 3.000<br>4.434 |

## CHAINAGE 100

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.337<br>986.915 | | 986.915<br>986.812 |
| GROUND | | 987.063 | |
| OFFSET | -4.883<br>-3.000 | 0.000 | 3.000<br>3.008 |

## CHAINAGE 30

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.770<br>986.803 | | 986.803<br>987.015 |
| GROUND | | 986.892 | |
| OFFSET | -3.050<br>-3.000 | 0.000 | 3.000<br>4.568 |

## CHAINAGE 90

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.313<br>986.899 | | 986.899<br>987.125 |
| GROUND | | 987.050 | |
| OFFSET | -4.870<br>-3.000 | 0.000 | 3.000<br>4.589 |

## CHAINAGE 20

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.643<br>986.787 | | 986.787<br>987.051 |
| GROUND | | 987.013 | |
| OFFSET | -4.334<br>-3.000 | 0.000 | 3.000<br>4.646 |

## CHAINAGE 80

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.193<br>986.883 | | 986.883<br>986.934 |
| GROUND | | 986.969 | |
| OFFSET | -4.715<br>-3.000 | 0.000 | 3.000<br>4.326 |

## CHAINAGE 10

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.707<br>986.771 | | 986.771<br>987.037 |
| GROUND | | 987.003 | |
| OFFSET | -4.244<br>-3.000 | 0.000 | 3.000<br>4.649 |

## CHAINAGE 70

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986

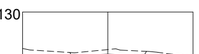


| | | | |
|---|---|---|---|
| FINISHED | 987.155<br>986.867 | | 986.867<br>986.852 |
| GROUND | | 986.875 | |
| OFFSET | -4.682<br>-3.000 | 0.000 | 3.000<br>3.023 |

## CHAINAGE 130

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.101<br>986.963 | | 986.963<br>987.154 |
| GROUND | | 987.238 | |
| OFFSET | -4.456<br>-3.000 | 0.000 | 3.000<br>4.536 |

## CHAINAGE 0

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.701<br>986.755 | | 986.755<br>986.960 |
| GROUND | | 986.815 | |
| OFFSET | -3.061<br>-3.000 | 0.000 | 3.000<br>4.557 |

## CHAINAGE 60

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.154<br>986.851 | | 986.851<br>986.856 |
| GROUND | | 986.778 | |
| OFFSET | -4.704<br>-3.000 | 0.000 | 3.000<br>3.023 |

## CHAINAGE 120

H.SCALE 1:250

V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.156<br>986.947 | | 986.947<br>986.969 |
| GROUND | | 987.069 | |
| OFFSET | -4.563<br>-3.000 | 0.000 | 3.000<br>3.102 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
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| | |
|---|---|
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| DRAWN BY | T.M |
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BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 5:CROSS SECTIONS: CHAINAGE 0 TO 137.225

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R5/CS/01

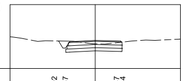
SHEET 10 OF 16

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N.T.S

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## CHAINAGE 50

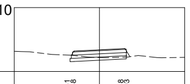
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.292<br>986.257 | | 986.287<br>986.234 |
| GROUND | | 986.153 | |
| OFFSET | -4.302<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 110

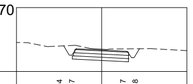
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.761<br>986.064 | | 986.078<br>986.003 |
| GROUND | | 986.655 | |
| OFFSET | -3.206<br>-3.000 | 0.000 | 3.000<br>3.578 |

## CHAINAGE 170

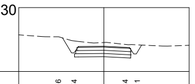
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.204<br>986.067 | | 985.947<br>986.068 |
| GROUND | | 986.046 | |
| OFFSET | -4.456<br>-3.000 | 0.000 | 3.000<br>4.432 |

## CHAINAGE 230

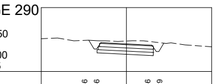
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.576<br>986.174 | | 986.124<br>986.241 |
| GROUND | | 986.360 | |
| OFFSET | -4.853<br>-3.000 | 0.000 | 3.000<br>4.424 |

## CHAINAGE 290

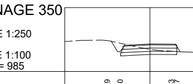
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.466<br>986.356 | | 986.236<br>986.329 |
| GROUND | | 986.429 | |
| OFFSET | -4.415<br>-3.000 | 0.000 | 3.000<br>4.389 |

## CHAINAGE 350

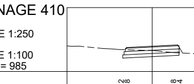
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.419<br>986.230 | | 986.283<br>986.283 |
| GROUND | | 986.043 | |
| OFFSET | -4.533<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 410

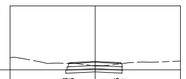
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.022<br>986.128 | | 985.249<br>985.864 |
| GROUND | | 985.984 | |
| OFFSET | -3.158<br>-3.000 | 0.000 | 3.000<br>3.576 |

## CHAINAGE 40

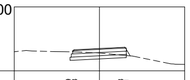
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.308<br>986.333 | | 986.335<br>986.291 |
| GROUND | | 986.182 | |
| OFFSET | -3.040<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 100

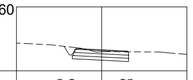
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.888<br>986.888 | | 986.108<br>986.107 |
| GROUND | | 986.839 | |
| OFFSET | -3.148<br>-3.000 | 0.000 | 3.000<br>3.816 |

## CHAINAGE 160

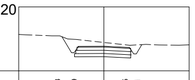
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.150<br>986.049 | | 985.923<br>985.923 |
| GROUND | | 985.893 | |
| OFFSET | -4.402<br>-3.000 | 0.000 | 3.000<br>3.004 |

## CHAINAGE 220

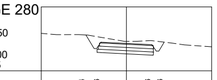
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.603<br>986.149 | | 986.095<br>986.231 |
| GROUND | | 986.331 | |
| OFFSET | -4.932<br>-3.000 | 0.000 | 3.000<br>4.454 |

## CHAINAGE 280

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.684<br>986.346 | | 986.226<br>986.346 |
| GROUND | | 986.380 | |
| OFFSET | -4.757<br>-3.000 | 0.000 | 3.000<br>4.431 |

## CHAINAGE 340

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.386<br>986.240 | | 986.240<br>986.240 |
| GROUND | | 986.227 | |
| OFFSET | -4.470<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 400

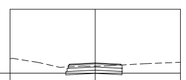
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.223<br>986.146 | | 985.266<br>985.907 |
| GROUND | | 985.119 | |
| OFFSET | -4.365<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 30

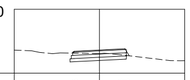
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.226<br>986.420 | | 986.420<br>986.381 |
| GROUND | | 986.335 | |
| OFFSET | -3.186<br>-3.000 | 0.000 | 3.000<br>3.039 |

## CHAINAGE 90

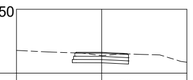
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.741<br>986.074 | | 986.146<br>985.816 |
| GROUND | | 985.920 | |
| OFFSET | -3.128<br>-3.000 | 0.000 | 3.000<br>3.466 |

## CHAINAGE 150

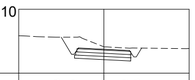
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.951<br>985.981 | | 985.918<br>985.908 |
| GROUND | | 985.827 | |
| OFFSET | -3.045<br>-3.000 | 0.000 | 3.000<br>3.070 |

## CHAINAGE 210

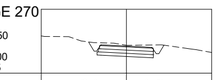
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.688<br>986.184 | | 986.064<br>986.176 |
| GROUND | | 986.237 | |
| OFFSET | -5.006<br>-3.000 | 0.000 | 3.000<br>4.417 |

## CHAINAGE 270

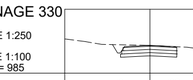
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.466<br>986.332 | | 986.212<br>986.314 |
| GROUND | | 986.307 | |
| OFFSET | -4.451<br>-3.000 | 0.000 | 3.000<br>4.403 |

## CHAINAGE 330

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.341<br>986.245 | | 986.255<br>986.255 |
| GROUND | | 986.293 | |
| OFFSET | -4.393<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 390

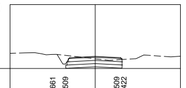
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.136<br>986.165 | | 985.285<br>985.906 |
| GROUND | | 986.050 | |
| OFFSET | -3.044<br>-3.000 | 0.000 | 3.000<br>3.398 |

## CHAINAGE 20

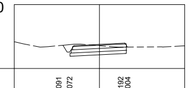
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.661<br>986.509 | | 986.529<br>986.422 |
| GROUND | | 986.458 | |
| OFFSET | -4.477<br>-3.000 | 0.000 | 3.000<br>3.130 |

## CHAINAGE 80

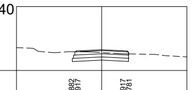
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.091<br>986.072 | | 986.192<br>986.004 |
| GROUND | | 986.070 | |
| OFFSET | -4.279<br>-3.000 | 0.000 | 3.000<br>3.282 |

## CHAINAGE 140

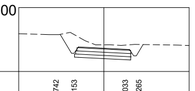
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.882<br>985.917 | | 985.917<br>985.917 |
| GROUND | | 985.841 | |
| OFFSET | -3.051<br>-3.000 | 0.000 | 3.000<br>3.004 |

## CHAINAGE 200

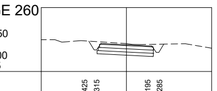
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.742<br>986.153 | | 986.033<br>986.265 |
| GROUND | | 986.253 | |
| OFFSET | -5.133<br>-3.000 | 0.000 | 3.000<br>4.598 |

## CHAINAGE 260

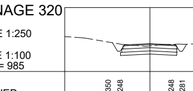
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.425<br>986.315 | | 986.195<br>986.285 |
| GROUND | | 986.310 | |
| OFFSET | -4.415<br>-3.000 | 0.000 | 3.000<br>4.385 |

## CHAINAGE 320

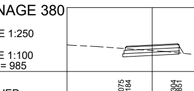
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.350<br>986.248 | | 986.248<br>986.261 |
| GROUND | | 986.201 | |
| OFFSET | -4.403<br>-3.000 | 0.000 | 3.000<br>4.300 |

## CHAINAGE 380

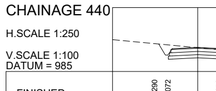
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.075<br>986.184 | | 986.304<br>986.304 |
| GROUND | | 985.984 | |
| OFFSET | -3.163<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 440

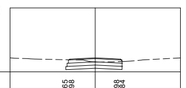
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.290<br>986.072 | | 985.972<br>985.898 |
| GROUND | | 986.116 | |
| OFFSET | -4.577<br>-3.000 | 0.000 | 3.000<br>3.111 |

## CHAINAGE 10

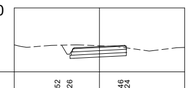
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.565<br>986.598 | | 986.588<br>986.484 |
| GROUND | | 986.461 | |
| OFFSET | -3.050<br>-3.000 | 0.000 | 3.000<br>3.172 |

## CHAINAGE 70

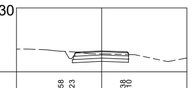
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.252<br>986.126 | | 986.246<br>986.124 |
| GROUND | | 986.227 | |
| OFFSET | -4.439<br>-3.000 | 0.000 | 3.000<br>3.183 |

## CHAINAGE 130

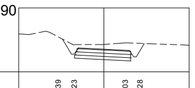
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.958<br>985.923 | | 985.918<br>985.918 |
| GROUND | | 985.844 | |
| OFFSET | -4.302<br>-3.000 | 0.000 | 3.000<br>3.102 |

## CHAINAGE 190

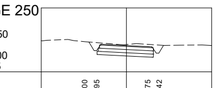
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.539<br>986.123 | | 986.003<br>986.328 |
| GROUND | | 986.284 | |
| OFFSET | -4.874<br>-3.000 | 0.000 | 3.000<br>4.737 |

## CHAINAGE 250

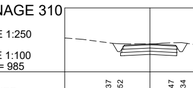
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.400<br>986.295 | | 986.175<br>986.242 |
| GROUND | | 986.280 | |
| OFFSET | -4.408<br>-3.000 | 0.000 | 3.000<br>4.350 |

## CHAINAGE 310

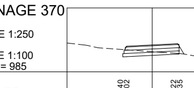
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.337<br>986.252 | | 986.247<br>986.334 |
| GROUND | | 986.311 | |
| OFFSET | -4.378<br>-3.000 | 0.000 | 3.000<br>4.380 |

## CHAINAGE 370

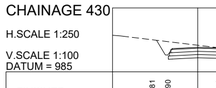
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.040<br>986.202 | | 986.352<br>986.335 |
| GROUND | | 985.948 | |
| OFFSET | -3.243<br>-3.000 | 0.000 | 3.000<br>3.001 |

## CHAINAGE 430

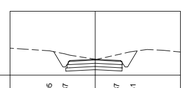
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.481<br>986.090 | | 986.118<br>986.118 |
| GROUND | | 986.248 | |
| OFFSET | -4.836<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 0

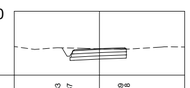
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.105<br>986.687 | | 986.687<br>987.141 |
| GROUND | | 986.747 | |
| OFFSET | -4.877<br>-3.000 | 0.000 | 3.000<br>4.931 |

## CHAINAGE 60

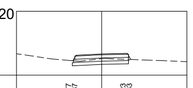
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.283<br>986.187 | | 986.289<br>986.218 |
| GROUND | | 986.240 | |
| OFFSET | -4.384<br>-3.000 | 0.000 | 3.000<br>3.108 |

## CHAINAGE 120

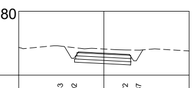
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 985.677<br>985.697 | | 986.033<br>985.998 |
| GROUND | | 985.775 | |
| OFFSET | -3.000<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 180

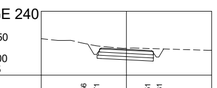
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.343<br>986.092 | | 985.972<br>986.187 |
| GROUND | | 986.229 | |
| OFFSET | -4.626<br>-3.000 | 0.000 | 3.000<br>4.572 |

## CHAINAGE 240

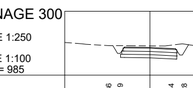
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.456<br>986.271 | | 986.151<br>986.231 |
| GROUND | | 986.264 | |
| OFFSET | -4.528<br>-3.000 | 0.000 | 3.000<br>4.369 |

## CHAINAGE 300

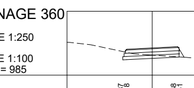
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.386<br>986.319 | | 986.244<br>986.428 |
| GROUND | | 986.375 | |
| OFFSET | -4.350<br>-3.000 | 0.000 | 3.000<br>4.527 |

## CHAINAGE 360

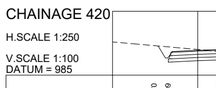
H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.067<br>986.218 | | 985.338<br>985.941 |
| GROUND | | 985.941 | |
| OFFSET | -3.186<br>-3.000 | 0.000 | 3.000<br>3.145 |

## CHAINAGE 420

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.370<br>986.109 | | 986.269<br>986.269 |
| GROUND | | 986.205 | |
| OFFSET | -4.641<br>-3.000 | 0.000 | 3.000<br>3.052 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY

P.O.BOX 1593
SENWABARWANA
0790

Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384

BLM _____ DATE _____

DOLMEN ENGINEERS CC _____ DATE _____

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 6:CROSS SECTIONS: CHAINAGE 0 TO 442.586

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R6/CS/01

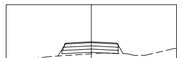
SHEET 11 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 50

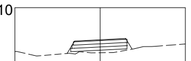
H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.589<br>986.196 | | 988.196<br>987.700 |
| GROUND | | 987.693 | |
| OFFSET | -3.910<br>-3.000 | 0.000 | 3.000<br>3.744 |

## CHAINAGE 110

H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.849<br>990.434 | | 990.554<br>990.052 |
| GROUND | | 989.885 | |
| OFFSET | -3.878<br>-3.000 | 0.000 | 3.000<br>3.754 |

## CHAINAGE 170

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 992.427<br>992.386 | | 992.386<br>992.633 |
| GROUND | | 992.554 | |
| OFFSET | -4.312<br>-3.000 | 0.000 | 3.000<br>4.621 |

## CHAINAGE 230

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 994.232<br>994.049 | | 994.049<br>994.698 |
| GROUND | | 994.439 | |
| OFFSET | -4.505<br>-3.000 | 0.000 | 3.000<br>5.223 |

## CHAINAGE 290

H.SCALE 1:250
V.SCALE 1:100
DATUM = 994



| | | | |
|---|---|---|---|
| FINISHED | 995.007<br>995.426 | | 995.426<br>995.926 |
| GROUND | | 995.017 | |
| OFFSET | -3.608<br>-3.000 | 0.000 | 3.000<br>3.998 |

## CHAINAGE 350

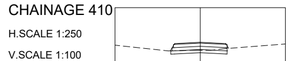
H.SCALE 1:250
V.SCALE 1:100
DATUM = 995



| | | | |
|---|---|---|---|
| FINISHED | 996.032<br>996.514 | | 996.514<br>996.807 |
| GROUND | | 995.856 | |
| OFFSET | -3.646<br>-3.000 | 0.000 | 3.000<br>3.861 |

## CHAINAGE 410

H.SCALE 1:250
V.SCALE 1:100
DATUM = 996



| | | | |
|---|---|---|---|
| FINISHED | 996.972<br>997.315 | | 997.315<br>997.888 |
| GROUND | | 997.093 | |
| OFFSET | -3.515<br>-3.000 | 0.000 | 3.000<br>3.340 |

## CHAINAGE 40

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.398<br>987.296 | | 987.296<br>987.493 |
| GROUND | | 987.460 | |
| OFFSET | -3.665<br>-3.000 | 0.000 | 3.000<br>3.488 |

## CHAINAGE 100

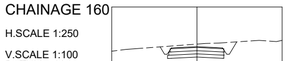
H.SCALE 1:250
V.SCALE 1:100
DATUM = 989



| | | | |
|---|---|---|---|
| FINISHED | 989.403<br>990.081 | | 990.201<br>989.600 |
| GROUND | | 989.411 | |
| OFFSET | -4.017<br>-3.000 | 0.000 | 3.000<br>3.902 |

## CHAINAGE 160

H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 992.129<br>992.080 | | 992.080<br>992.363 |
| GROUND | | 992.258 | |
| OFFSET | -4.323<br>-3.000 | 0.000 | 3.000<br>4.675 |

## CHAINAGE 220

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 994.003<br>993.792 | | 993.792<br>994.518 |
| GROUND | | 994.215 | |
| OFFSET | -4.567<br>-3.000 | 0.000 | 3.000<br>5.339 |

## CHAINAGE 280

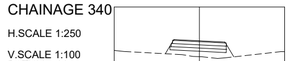
H.SCALE 1:250
V.SCALE 1:100
DATUM = 994



| | | | |
|---|---|---|---|
| FINISHED | 994.978<br>995.276 | | 995.276<br>995.888 |
| GROUND | | 994.897 | |
| OFFSET | -3.800<br>-3.000 | 0.000 | 3.000<br>3.902 |

## CHAINAGE 340

H.SCALE 1:250
V.SCALE 1:100
DATUM = 995



| | | | |
|---|---|---|---|
| FINISHED | 996.906<br>996.473 | | 996.353<br>996.659 |
| GROUND | | 995.669 | |
| OFFSET | -4.000<br>-3.000 | 0.000 | 3.000<br>4.040 |

## CHAINAGE 400

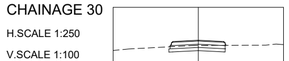
H.SCALE 1:250
V.SCALE 1:100
DATUM = 996



| | | | |
|---|---|---|---|
| FINISHED | 996.847<br>997.202 | | 997.202<br>996.808 |
| GROUND | | 996.824 | |
| OFFSET | -3.532<br>-3.000 | 0.000 | 3.000<br>3.560 |

## CHAINAGE 30

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 987.148<br>987.397 | | 987.397<br>987.216 |
| GROUND | | 987.211 | |
| OFFSET | -3.374<br>-3.000 | 0.000 | 3.000<br>3.271 |

## CHAINAGE 90

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.955<br>989.720 | | 989.840<br>989.038 |
| GROUND | | 989.110 | |
| OFFSET | -4.148<br>-3.000 | 0.000 | 3.000<br>4.204 |

## CHAINAGE 150

H.SCALE 1:250
V.SCALE 1:100
DATUM = 991



| | | | |
|---|---|---|---|
| FINISHED | 991.792<br>991.767 | | 991.767<br>991.806 |
| GROUND | | 991.910 | |
| OFFSET | -4.267<br>-3.000 | 0.000 | 3.000<br>4.308 |

## CHAINAGE 210

H.SCALE 1:250
V.SCALE 1:100
DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 993.780<br>993.527 | | 993.527<br>994.153 |
| GROUND | | 994.009 | |
| OFFSET | -4.609<br>-3.000 | 0.000 | 3.000<br>5.190 |

## CHAINAGE 270

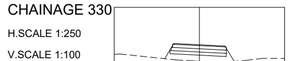
H.SCALE 1:250
V.SCALE 1:100
DATUM = 994



| | | | |
|---|---|---|---|
| FINISHED | 994.741<br>994.999 | | 994.999<br>994.855 |
| GROUND | | 994.776 | |
| OFFSET | -3.987<br>-3.000 | 0.000 | 3.000<br>3.276 |

## CHAINAGE 330

H.SCALE 1:250
V.SCALE 1:100
DATUM = 995



| | | | |
|---|---|---|---|
| FINISHED | 996.599<br>996.303 | | 996.183<br>996.460 |
| GROUND | | 995.466 | |
| OFFSET | -4.071<br>-3.000 | 0.000 | 3.000<br>4.085 |

## CHAINAGE 390

H.SCALE 1:250
V.SCALE 1:100
DATUM = 996



| | | | |
|---|---|---|---|
| FINISHED | 996.728<br>997.080 | | 997.080<br>996.514 |
| GROUND | | 996.609 | |
| OFFSET | -3.513<br>-3.000 | 0.000 | 3.000<br>3.849 |

## CHAINAGE 20

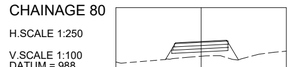
H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.128<br>986.697 | | 986.997<br>987.064 |
| GROUND | | 986.676 | |
| OFFSET | -3.404<br>-3.000 | 0.000 | 3.000<br>4.351 |

## CHAINAGE 80

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.666<br>989.351 | | 989.471<br>988.549 |
| GROUND | | 988.719 | |
| OFFSET | -4.177<br>-3.000 | 0.000 | 3.000<br>4.383 |

## CHAINAGE 140

H.SCALE 1:250
V.SCALE 1:100
DATUM = 991

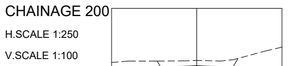


| | | | |
|---|---|---|---|
| FINISHED | 991.321<br>991.146 | | 991.376<br>991.576 |
| GROUND | | 991.273 | |
| OFFSET | -3.187<br>-3.000 | 0.000 | 3.000<br>3.104 |

## CHAINAGE 200

H.SCALE 1:250
V.SCALE 1:100

DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 993.535<br>993.253 | | 993.253<br>993.650 |
| GROUND | | 993.555 | |
| OFFSET | -4.668<br>-3.000 | 0.000 | 3.000<br>4.846 |

## CHAINAGE 260

H.SCALE 1:250
V.SCALE 1:100
DATUM = 994



| | | | |
|---|---|---|---|
| FINISHED | 994.694<br>994.772 | | 994.773<br>994.906 |
| GROUND | | 994.794 | |
| OFFSET | -3.135<br>-3.000 | 0.000 | 3.000<br>4.462 |

## CHAINAGE 320

H.SCALE 1:250
V.SCALE 1:100
DATUM = 995



| | | | |
|---|---|---|---|
| FINISHED | 996.367<br>996.126 | | 996.006<br>996.334 |
| GROUND | | 995.332 | |
| OFFSET | -4.152<br>-3.000 | 0.000 | 3.000<br>4.497 |

## CHAINAGE 380

H.SCALE 1:250
V.SCALE 1:100
DATUM = 996



| | | | |
|---|---|---|---|
| FINISHED | 996.617<br>996.851 | | 996.951<br>996.378 |
| GROUND | | 996.474 | |
| OFFSET | -3.501<br>-3.000 | 0.000 | 3.000<br>3.859 |

## CHAINAGE 10

H.SCALE 1:250
V.SCALE 1:100
DATUM = 986



| | | | |
|---|---|---|---|
| FINISHED | 986.591<br>986.594 | | 986.598<br>986.742 |
| GROUND | | 986.714 | |
| OFFSET | -3.008<br>-3.000 | 0.000 | 3.000<br>4.466 |

## CHAINAGE 70

H.SCALE 1:250
V.SCALE 1:100
DATUM = 988



| | | | |
|---|---|---|---|
| FINISHED | 988.245<br>988.974 | | 989.032<br>988.412 |
| GROUND | | 988.361 | |
| OFFSET | -4.093<br>-3.000 | 0.000 | 3.000<br>3.931 |

## CHAINAGE 130

H.SCALE 1:250
V.SCALE 1:100
DATUM = 990



| | | | |
|---|---|---|---|
| FINISHED | 990.177<br>991.177 | | 991.014<br>991.048 |
| GROUND | | 990.849 | |
| OFFSET | -3.970<br>-3.000 | 0.000 | 3.000<br>3.509 |

## CHAINAGE 190

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 993.119<br>992.972 | | 992.972<br>993.355 |
| GROUND | | 993.157 | |
| OFFSET | -4.470<br>-3.000 | 0.000 | 3.000<br>4.824 |

## CHAINAGE 250

H.SCALE 1:250
V.SCALE 1:100
DATUM = 994



| | | | |
|---|---|---|---|
| FINISHED | 994.599<br>994.540 | | 994.540<br>995.156 |
| GROUND | | 994.699 | |
| OFFSET | -4.339<br>-3.000 | 0.000 | 3.000<br>5.174 |

## CHAINAGE 310

H.SCALE 1:250
V.SCALE 1:100
DATUM = 995



| | | | |
|---|---|---|---|
| FINISHED | 996.343<br>995.943 | | 995.820<br>996.029 |
| GROUND | | 995.233 | |
| OFFSET | -3.881<br>-3.000 | 0.000 | 3.000<br>3.892 |

## CHAINAGE 370

H.SCALE 1:250
V.SCALE 1:100
DATUM = 996



| | | | |
|---|---|---|---|
| FINISHED | 996.473<br>996.813 | | 996.813<br>996.290 |
| GROUND | | 996.407 | |
| OFFSET | -3.557<br>-3.000 | 0.000 | 3.000<br>3.784 |

## CHAINAGE 0

H.SCALE 1:250
V.SCALE 1:100
DATUM = 985



| | | | |
|---|---|---|---|
| FINISHED | 986.196<br>986.196 | | 986.198<br>986.260 |
| GROUND | | 986.258 | |
| OFFSET | -4.247<br>-3.000 | 0.000 | 3.000<br>4.343 |

## CHAINAGE 60

H.SCALE 1:250
V.SCALE 1:100
DATUM = 987



| | | | |
|---|---|---|---|
| FINISHED | 987.883<br>988.589 | | 988.589<br>988.008 |
| GROUND | | 988.615 | |
| OFFSET | -4.059<br>-3.000 | 0.000 | 3.000<br>3.792 |

## CHAINAGE 120

H.SCALE 1:250
V.SCALE 1:100
DATUM = 990



| | | | |
|---|---|---|---|
| FINISHED | 990.207<br>990.207 | | 990.192<br>990.207 |
| GROUND | | 990.436 | |
| OFFSET | -3.008<br>-3.000 | 0.000 | 3.000<br>3.001 |

## CHAINAGE 180

H.SCALE 1:250
V.SCALE 1:100
DATUM = 992



| | | | |
|---|---|---|---|
| FINISHED | 992.794<br>992.683 | | 992.683<br>993.030 |
| GROUND | | 992.874 | |
| OFFSET | -4.306<br>-3.000 | 0.000 | 3.000<br>4.771 |

## CHAINAGE 240

H.SCALE 1:250
V.SCALE 1:100

DATUM = 993



| | | | |
|---|---|---|---|
| FINISHED | 994.438<br>994.299 | | 994.299<br>995.097 |
| GROUND | | 994.793 | |
| OFFSET | -4.459<br>-3.000 | 0.000 | 3.000<br>5.447 |

## CHAINAGE 300

H.SCALE 1:250
V.SCALE 1:100
DATUM = 995



| | | | |
|---|---|---|---|
| FINISHED | 996.593<br>995.699 | | 995.627<br>996.060 |
| GROUND | | 995.106 | |
| OFFSET | -3.833<br>-3.000 | 0.000 | 3.000<br>3.812 |

## CHAINAGE 360

H.SCALE 1:250
V.SCALE 1:100
DATUM = 996



| | | | |
|---|---|---|---|
| FINISHED | 996.837<br>996.668 | | 996.668<br>996.208 |
| GROUND | | 996.234 | |
| OFFSET | -3.645<br>-3.000 | 0.000 | 3.000<br>3.888 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY

P.O.BOX 1593
SENWABARWANA
0790

Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS

DOLMEN CONSULTING ENGINEERS

P.O. BOX 468
BENDOR PARK
0713

Tel: 015 295 4885
Fax: 015 295 8384

BLM _____ DATE _____

DOLMEN ENGINEERS CC _____ DATE _____

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD

GA-KOBE ROAD 7:CROSS SECTIONS: CHAINAGE 0 TO 410

TENDER
(Full signature)

BLM 20 / /

For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R7/CS/01

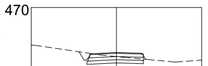
SHEET 12 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 470

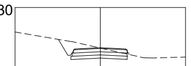
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.921<br>997.829 | | 997.553<br>997.597 |
| GROUND | | 997.696 | |
| OFFSET | -4.389<br>-3.000 | 0.000 | 3.000<br>3.429 |

## CHAINAGE 530

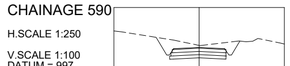
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.502 | 998.005 | 998.055<br>997.792 |
| GROUND | | 998.095 | |
| OFFSET | -4.921<br>-3.000 | 0.000 | 3.000<br>3.366 |

## CHAINAGE 590

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.600 | 998.068 | 998.068<br>998.424 |
| GROUND | | 998.221 | |
| OFFSET | -5.048<br>-3.000 | 0.000 | 3.000<br>4.784 |

## CHAINAGE 650

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.357 | 998.070 | 998.070<br>997.922 |
| GROUND | | 998.033 | |
| OFFSET | -4.680<br>-3.000 | 0.000 | 3.000<br>3.221 |

## CHAINAGE 710

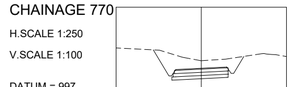
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.497 | 998.071 | 998.191<br>998.182 |
| GROUND | | 998.178 | |
| OFFSET | -4.889<br>-3.000 | 0.000 | 3.000<br>3.013 |

## CHAINAGE 770

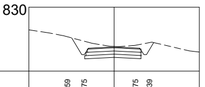
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.997 | 998.073 | 998.193<br>998.690 |
| GROUND | | 998.489 | |
| OFFSET | -5.636<br>-3.000 | 0.000 | 3.000<br>4.995 |

## CHAINAGE 830

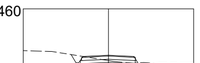
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.559<br>998.075 | | 998.075<br>998.339 |
| GROUND | | 998.156 | |
| OFFSET | -4.976<br>-3.000 | 0.000 | 3.000<br>4.647 |

## CHAINAGE 460

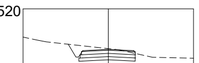
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.863<br>997.783 | | 997.788<br>997.900 |
| GROUND | | 997.572 | |
| OFFSET | -4.384<br>-3.000 | 0.000 | 3.000<br>3.405 |

## CHAINAGE 520

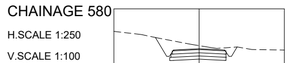
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.338 | 998.037 | 998.037<br>997.903 |
| GROUND | | 998.132 | |
| OFFSET | -4.701<br>-3.000 | 0.000 | 3.000<br>3.201 |

## CHAINAGE 580

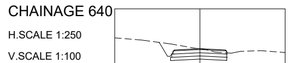
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.655 | 998.068 | 998.068<br>998.209 |
| GROUND | | 998.271 | |
| OFFSET | -5.131<br>-3.000 | 0.000 | 3.000<br>4.462 |

## CHAINAGE 640

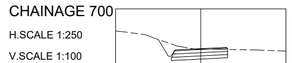
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.424 | 998.069 | 998.069<br>997.851 |
| GROUND | | 998.129 | |
| OFFSET | -4.782<br>-3.000 | 0.000 | 3.000<br>3.207 |

## CHAINAGE 700

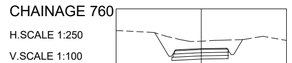
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.562 | 998.071 | 998.191<br>998.092 |
| GROUND | | 998.112 | |
| OFFSET | -4.967<br>-3.000 | 0.000 | 3.000<br>3.149 |

## CHAINAGE 760

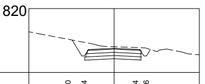
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.876<br>998.073 | | 998.152<br>998.557 |
| GROUND | | 998.478 | |
| OFFSET | -5.454<br>-3.000 | 0.000 | 3.000<br>4.858 |

## CHAINAGE 820

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.520<br>998.074 | | 998.074<br>998.076 |
| GROUND | | 998.208 | |
| OFFSET | -4.918<br>-3.000 | 0.000 | 3.000<br>4.233 |

## CHAINAGE 450

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.623<br>997.690 | | 997.690<br>997.903 |
| GROUND | | 997.426 | |
| OFFSET | -3.100<br>-3.000 | 0.000 | 3.000<br>3.000 |

## CHAINAGE 510

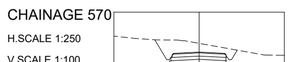
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.311 | 998.012 | 998.012<br>997.893 |
| GROUND | | 998.092 | |
| OFFSET | -4.699<br>-3.000 | 0.000 | 3.000<br>3.179 |

## CHAINAGE 570

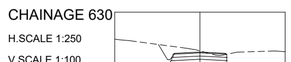
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.703 | 998.068 | 998.068<br>998.216 |
| GROUND | | 998.538 | |
| OFFSET | -5.203<br>-3.000 | 0.000 | 3.000<br>4.472 |

## CHAINAGE 630

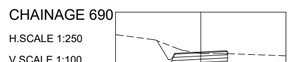
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.481 | 998.069 | 998.069<br>998.077 |
| GROUND | | 998.183 | |
| OFFSET | -4.867<br>-3.000 | 0.000 | 3.000<br>3.078 |

## CHAINAGE 690

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.662 | 998.071 | 998.191<br>998.054 |
| GROUND | | 998.260 | |
| OFFSET | -5.137<br>-3.000 | 0.000 | 3.000<br>3.206 |

## CHAINAGE 750

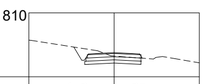
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.710 | 998.072 | 998.080<br>998.519 |
| GROUND | | 998.465 | |
| OFFSET | -5.207<br>-3.000 | 0.000 | 3.000<br>4.968 |

## CHAINAGE 810

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.395<br>998.074 | | 998.074<br>997.871 |
| GROUND | | 997.970 | |
| OFFSET | -4.732<br>-3.000 | 0.000 | 3.000<br>3.304 |

## CHAINAGE 440

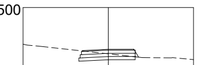
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.493<br>997.688 | | 997.693<br>997.934 |
| GROUND | | 997.345 | |
| OFFSET | -3.173<br>-3.000 | 0.000 | 3.000<br>3.001 |

## CHAINAGE 500

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.998<br>997.998 | | 998.040<br>997.888 |
| GROUND | | 997.625 | |
| OFFSET | -3.020<br>-3.000 | 0.000 | 3.000<br>3.008 |

## CHAINAGE 560

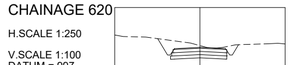
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.655 | 998.067 | 998.067<br>998.081 |
| GROUND | | 998.439 | |
| OFFSET | -5.132<br>-3.000 | 0.000 | 3.000<br>4.271 |

## CHAINAGE 620

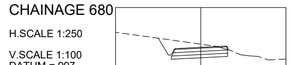
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.537 | 998.069 | 998.069<br>998.255 |
| GROUND | | 998.211 | |
| OFFSET | -4.932<br>-3.000 | 0.000 | 3.000<br>4.529 |

## CHAINAGE 680

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.558 | 998.070 | 998.190<br>998.024 |
| GROUND | | 998.280 | |
| OFFSET | -4.962<br>-3.000 | 0.000 | 3.000<br>3.250 |

## CHAINAGE 740

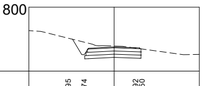
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.613<br>998.072 | | 998.072<br>998.481 |
| GROUND | | 998.498 | |
| OFFSET | -5.062<br>-3.000 | 0.000 | 3.000<br>4.864 |

## CHAINAGE 800

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.495<br>998.074 | | 998.062<br>998.050 |
| GROUND | | 998.178 | |
| OFFSET | -4.882<br>-3.000 | 0.000 | 3.000<br>3.063 |

## CHAINAGE 430

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.453<br>997.518 | | 997.518<br>997.287 |
| GROUND | | 997.281 | |
| OFFSET | -3.128<br>-3.000 | 0.000 | 3.000<br>3.347 |

## CHAINAGE 490

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.021<br>997.936 | | 998.056<br>997.697 |
| GROUND | | 997.863 | |
| OFFSET | -4.377<br>-3.000 | 0.000 | 3.000<br>3.539 |

## CHAINAGE 550

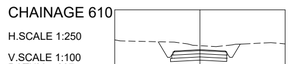
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.599 | 998.067 | 998.067<br>998.044 |
| GROUND | | 998.334 | |
| OFFSET | -5.048<br>-3.000 | 0.000 | 3.000<br>4.104 |

## CHAINAGE 610

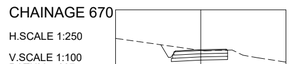
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.502 | 998.069 | 998.069<br>998.391 |
| GROUND | | 998.317 | |
| OFFSET | -4.900<br>-3.000 | 0.000 | 3.000<br>4.734 |

## CHAINAGE 670

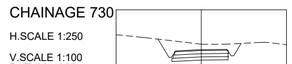
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.361 | 998.070 | 998.154<br>998.106 |
| GROUND | | 998.098 | |
| OFFSET | -4.886<br>-3.000 | 0.000 | 3.000<br>3.092 |

## CHAINAGE 730

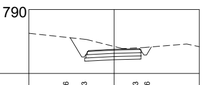
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.624 | 998.072 | 998.143<br>998.424 |
| GROUND | | 998.388 | |
| OFFSET | -5.078<br>-3.000 | 0.000 | 3.000<br>4.671 |

## CHAINAGE 790

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.076<br>998.073 | | 998.163<br>998.284 |
| GROUND | | 998.286 | |
| OFFSET | -5.154<br>-3.000 | 0.000 | 3.000<br>4.374 |

## CHAINAGE 420

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.132<br>997.421 | | 997.421<br>997.198 |
| GROUND | | 997.101 | |
| OFFSET | -3.439<br>-3.000 | 0.000 | 3.000<br>3.335 |

## CHAINAGE 480

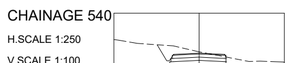
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 997.972<br>997.887 | | 997.982<br>997.668 |
| GROUND | | 997.801 | |
| OFFSET | -4.378<br>-3.000 | 0.000 | 3.000<br>3.472 |

## CHAINAGE 540

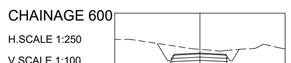
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.517 | 998.065 | 998.068<br>998.208 |
| GROUND | | 998.186 | |
| OFFSET | -4.929<br>-3.000 | 0.000 | 3.000<br>4.190 |

## CHAINAGE 600

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.579 | 998.068 | 998.068<br>998.304 |
| GROUND | | 998.301 | |
| OFFSET | -5.016<br>-3.000 | 0.000 | 3.000<br>4.603 |

## CHAINAGE 660

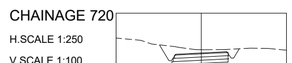
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.178<br>998.070 | | 998.082<br>998.045 |
| GROUND | | 998.155 | |
| OFFSET | -4.412<br>-3.000 | 0.000 | 3.000<br>3.055 |

## CHAINAGE 720

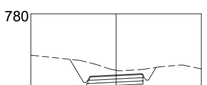
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.511<br>998.072 | | 998.192<br>998.330 |
| GROUND | | 998.296 | |
| OFFSET | -4.909<br>-3.000 | 0.000 | 3.000<br>4.457 |

## CHAINAGE 780

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | |
|---|---|---|---|
| FINISHED | 998.866<br>998.073 | | 998.193<br>998.486 |
| GROUND | | 998.353 | |
| OFFSET | -5.440<br>-3.000 | 0.000 | 3.000<br>4.689 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY
P.O.BOX 1593
SENWABARWANA
0790
Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS
DOLMEN CONSULTING ENGINEERS
P.O. BOX 468
BENDOR PARK
0713
Tel: 015 295 4885
Fax: 015 295 8384

BLM _____ DATE _____
DOLMEN ENGINEERS CC _____ DATE _____

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD

GA-KOBE ROAD 7:CROSS SECTIONS: CHAINAGE 420 TO 830

TENDER (Full signature)
BLM 20 / /
For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R7/CS/02

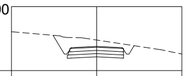
SHEET 13 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 890

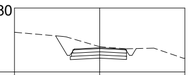
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.656 | 998.076 | | | 998.076 | 998.169 |
| GROUND | | | 998.433 | | | |
| OFFSET | -5.120 | -3.000 | 0.000 | | 3.000 | 4.389 |

## CHAINAGE 880

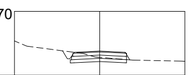
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.695 | 998.076 | | | 998.076 | 998.097 |
| GROUND | | | 998.186 | | | |
| OFFSET | -5.179 | -3.000 | 0.000 | | 3.000 | 4.262 |

## CHAINAGE 870

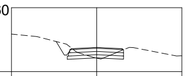
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.148 | 998.076 | | | 998.076 | 997.722 |
| GROUND | | | 997.840 | | | |
| OFFSET | -4.358 | -3.000 | 0.000 | | 3.000 | 3.358 |

## CHAINAGE 860

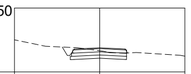
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 999.413 | 999.075 | | | 998.075 | 998.075 |
| GROUND | | | 997.635 | | | |
| OFFSET | -4.756 | -3.000 | 0.000 | | 3.000 | 3.000 |

## CHAINAGE 850

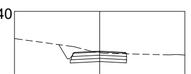
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.169 | 998.075 | | | 998.075 | 998.099 |
| GROUND | | | 997.995 | | | |
| OFFSET | -4.391 | -3.000 | 0.000 | | 3.000 | 3.070 |

## CHAINAGE 840

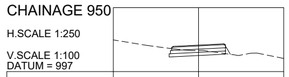
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.440 | 998.075 | | | 998.075 | 998.098 |
| GROUND | | | 998.060 | | | |
| OFFSET | -4.797 | -3.000 | 0.000 | | 3.000 | 3.100 |

## CHAINAGE 950

H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.077 | 998.184 | | | 998.304 | 997.811 |
| GROUND | | | 997.989 | | | |
| OFFSET | -3.160 | -3.000 | 0.000 | | 3.000 | 3.799 |

## CHAINAGE 940

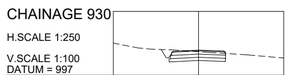
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.219 | 998.151 | | | 998.235 | 998.027 |
| GROUND | | | 998.094 | | | |
| OFFSET | -4.552 | -3.000 | 0.000 | | 3.000 | 3.313 |

## CHAINAGE 930

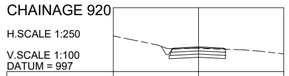
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.210 | 998.124 | | | 998.137 | 998.023 |
| GROUND | | | 998.107 | | | |
| OFFSET | -4.379 | -3.000 | 0.000 | | 3.000 | 3.171 |

## CHAINAGE 920

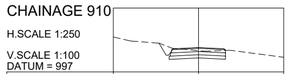
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.184 | 998.103 | | | 998.103 | 998.050 |
| GROUND | | | 998.086 | | | |
| OFFSET | -4.371 | -3.000 | 0.000 | | 3.000 | 3.080 |

## CHAINAGE 910

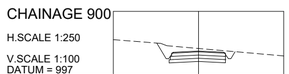
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.349 | 998.088 | | | 998.088 | 998.009 |
| GROUND | | | 998.000 | | | |
| OFFSET | -4.641 | -3.000 | 0.000 | | 3.000 | 3.119 |

## CHAINAGE 900

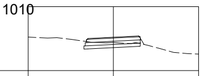
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.512 | 998.079 | | | 998.079 | 998.108 |
| GROUND | | | 998.258 | | | |
| OFFSET | -4.900 | -3.000 | 0.000 | | 3.000 | 4.294 |

## CHAINAGE 1010

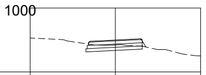
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.368 | 998.368 | | | 998.626 | 998.298 |
| GROUND | | | 998.318 | | | |
| OFFSET | -3.213 | -3.000 | 0.000 | | 3.000 | 3.897 |

## CHAINAGE 1000

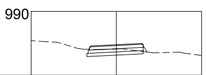
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.308 | 998.308 | | | 998.568 | 998.170 |
| GROUND | | | 998.264 | | | |
| OFFSET | -3.105 | -3.000 | 0.000 | | 3.000 | 3.881 |

## CHAINAGE 990

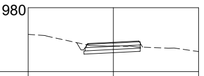
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.315 | 998.315 | | | 998.486 | 998.086 |
| GROUND | | | 998.234 | | | |
| OFFSET | -3.038 | -3.000 | 0.000 | | 3.000 | 3.870 |

## CHAINAGE 980

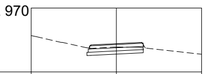
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.361 | 998.318 | | | 998.438 | 998.148 |
| GROUND | | | 998.202 | | | |
| OFFSET | -4.314 | -3.000 | 0.000 | | 3.000 | 3.436 |

## CHAINAGE 970

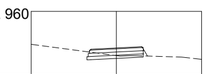
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.321 | 998.321 | | | 998.387 | 998.122 |
| GROUND | | | 998.170 | | | |
| OFFSET | -3.215 | -3.000 | 0.000 | | 3.000 | 3.386 |

## CHAINAGE 960

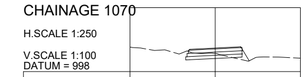
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.033 | 998.033 | | | 998.343 | 997.953 |
| GROUND | | | 997.924 | | | |
| OFFSET | -3.184 | -3.000 | 0.000 | | 3.000 | 3.888 |

## CHAINAGE 1070

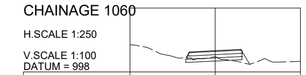
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.847 | 998.847 | | | 999.165 | 998.804 |
| GROUND | | | 998.853 | | | |
| OFFSET | -3.147 | -3.000 | 0.000 | | 3.000 | 3.951 |

## CHAINAGE 1060

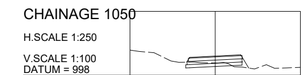
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.655 | 998.655 | | | 999.060 | 998.355 |
| GROUND | | | 998.714 | | | |
| OFFSET | -3.127 | -3.000 | 0.000 | | 3.000 | 4.056 |

## CHAINAGE 1050

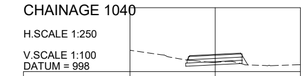
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.613 | 998.841 | | | 998.961 | 998.307 |
| GROUND | | | 998.577 | | | |
| OFFSET | -3.343 | -3.000 | 0.000 | | 3.000 | 3.937 |

## CHAINAGE 1040

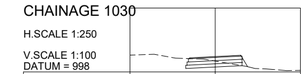
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.540 | 998.749 | | | 998.869 | 998.313 |
| GROUND | | | 998.431 | | | |
| OFFSET | -3.313 | -3.000 | 0.000 | | 3.000 | 3.844 |

## CHAINAGE 1030

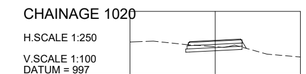
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.627 | 998.662 | | | 998.782 | 998.248 |
| GROUND | | | 998.511 | | | |
| OFFSET | -3.052 | -3.000 | 0.000 | | 3.000 | 3.900 |

## CHAINAGE 1020

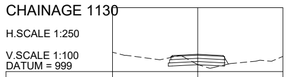
H.SCALE 1:250
V.SCALE 1:100
DATUM = 997



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.434 | 998.581 | | | 998.703 | 998.190 |
| GROUND | | | 998.340 | | | |
| OFFSET | -3.221 | -3.000 | 0.000 | | 3.000 | 3.889 |

## CHAINAGE 1130

H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 999.653 | 999.192 | | | 999.384 | 999.127 |
| GROUND | | | 999.326 | | | |
| OFFSET | -3.134 | -3.000 | 0.000 | | 3.000 | 3.801 |

## CHAINAGE 1120

H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 999.522 | 999.622 | | | 999.183 | 999.183 |
| GROUND | | | 999.223 | | | |
| OFFSET | -3.166 | -3.000 | 0.000 | | 3.000 | 3.888 |

## CHAINAGE 1110

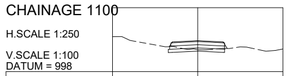
H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 999.282 | 999.282 | | | 999.132 | 999.132 |
| GROUND | | | 999.106 | | | |
| OFFSET | -3.348 | -3.000 | 0.000 | | 3.000 | 3.850 |

## CHAINAGE 1100

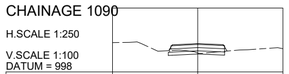
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 999.170 | 999.282 | | | 999.266 | 999.266 |
| GROUND | | | 999.033 | | | |
| OFFSET | -3.334 | -3.000 | 0.000 | | 3.000 | 3.459 |

## CHAINAGE 1090

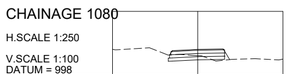
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.999 | 998.999 | | | 999.281 | 999.281 |
| GROUND | | | 998.891 | | | |
| OFFSET | -3.411 | -3.000 | 0.000 | | 3.000 | 3.449 |

## CHAINAGE 1080

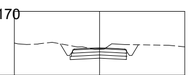
H.SCALE 1:250
V.SCALE 1:100
DATUM = 998



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 998.953 | 998.918 | | | 999.256 | 999.256 |
| GROUND | | | 998.823 | | | |
| OFFSET | -3.304 | -3.000 | 0.000 | | 3.000 | 3.750 |

## CHAINAGE 1170

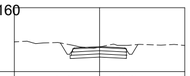
H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.477 | 1000.232 | | | 1000.232 | 1000.432 |
| GROUND | | | 1000.219 | | | |
| OFFSET | -4.618 | -3.000 | 0.000 | | 3.000 | 4.549 |

## CHAINAGE 1160

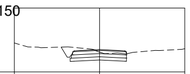
H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.344 | 1000.112 | | | 1000.112 | 1000.272 |
| GROUND | | | 1000.154 | | | |
| OFFSET | -4.599 | -3.000 | 0.000 | | 3.000 | 4.480 |

## CHAINAGE 1150

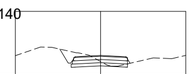
H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.167 | 999.992 | | | 999.992 | 999.853 |
| GROUND | | | 999.931 | | | |
| OFFSET | -4.512 | -3.000 | 0.000 | | 3.000 | 3.209 |

## CHAINAGE 1140

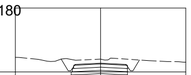
H.SCALE 1:250
V.SCALE 1:100
DATUM = 999



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.229 | 999.872 | | | 999.872 | 999.865 |
| GROUND | | | 999.647 | | | |
| OFFSET | -4.796 | -3.000 | 0.000 | | 3.000 | 3.401 |

## CHAINAGE 1180

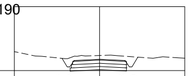
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.603 | 1000.352 | | | 1000.352 | 1000.559 |
| GROUND | | | 1000.600 | | | |
| OFFSET | -4.627 | -3.000 | 0.000 | | 3.000 | 4.561 |

## CHAINAGE 1190

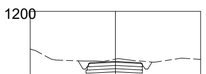
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.574 | 1000.472 | | | 1000.472 | 1000.630 |
| GROUND | | | 1000.709 | | | |
| OFFSET | -4.403 | -3.000 | 0.000 | | 3.000 | 4.487 |

## CHAINAGE 1200

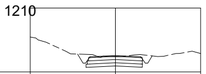
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.679 | 1000.592 | | | 1000.592 | 1000.619 |
| GROUND | | | 1000.759 | | | |
| OFFSET | -4.380 | -3.000 | 0.000 | | 3.000 | 4.291 |

## CHAINAGE 1210

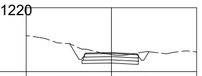
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1000.839 | 1000.712 | | | 1000.712 | 1000.753 |
| GROUND | | | 1000.716 | | | |
| OFFSET | -4.441 | -3.000 | 0.000 | | 3.000 | 4.311 |

## CHAINAGE 1220

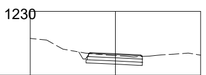
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1001.310 | 1000.872 | | | 1000.832 | 1000.933 |
| GROUND | | | 1000.797 | | | |
| OFFSET | -4.908 | -3.000 | 0.000 | | 3.000 | 4.401 |

## CHAINAGE 1230

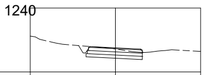
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1001.094 | 1001.063 | | | 1000.952 | 1000.881 |
| GROUND | | | 1000.919 | | | |
| OFFSET | -4.297 | -3.000 | 0.000 | | 3.000 | 3.107 |

## CHAINAGE 1240

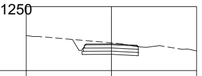
H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1001.236 | 1001.192 | | | 1001.072 | 1000.918 |
| GROUND | | | 1001.079 | | | |
| OFFSET | -4.316 | -3.000 | 0.000 | | 3.000 | 3.238 |

## CHAINAGE 1250

H.SCALE 1:250
V.SCALE 1:100
DATUM = 1000



| | | | | | | |
|---|---|---|---|---|---|---|
| FINISHED | 1001.461 | 1001.245 | | | 1001.192 | 1001.117 |
| GROUND | | | 1001.301 | | | |
| OFFSET | -4.573 | -3.000 | 0.000 | | 3.000 | 3.112 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY
P.O.BOX 1593
SENWABARWANA
0790
Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS
DOLMEN CONSULTING ENGINEERS
P.O. BOX 468
BENDOR PARK
0713
Tel: 015 295 4885
Fax: 015 295 8384

BLM DATE

DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD

GA-KOBE ROAD 7:CROSS SECTIONS: CHAINAGE 840 TO 1250

TENDER (Full signature)
20 / /
BLM
20 / /
For: DOLMEN ENGINEERS CC

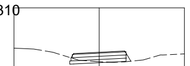
DRAWING NUMBER
DE68/R7/CS/03

SHEET 14 OF 16

SCALE
N.T.S

REVISION
0

## CHAINAGE 1310



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.653<br>1001.855 | | 1001.975<br>1001.964 |
| GROUND | | 1001.474 | |
| OFFSET | -3.303<br>-3.000 | 0.000 | 3.000<br>3.121 |

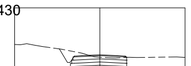
## CHAINAGE 1370



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1002.604<br>1002.382 | | 1002.370<br>1002.186 |
| GROUND | | 1002.186 | |
| OFFSET | -4.584<br>-3.000 | 0.000 | 3.000<br>3.306 |

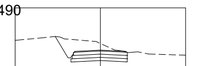
## CHAINAGE 1430



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.074<br>1002.737 | | 1002.717<br>1002.474 |
| GROUND | | 1002.685 | |
| OFFSET | -4.756<br>-3.000 | 0.000 | 3.000<br>3.056 |

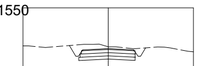
## CHAINAGE 1490



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.656 | 1002.956 | 1002.956<br>1002.822 |
| GROUND | | 1003.327 | |
| OFFSET | -5.301 | -3.000 | 0.000<br>3.000<br>3.651 |

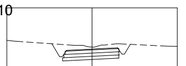
## CHAINAGE 1550



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.232<br>1003.026 | | 1003.026<br>1003.121 |
| GROUND | | 1003.173 | |
| OFFSET | -4.558<br>-3.000 | 0.000 | 3.000<br>4.392 |

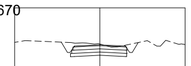
## CHAINAGE 1610



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.313<br>1003.006 | | 1003.126<br>1003.286 |
| GROUND | | 1003.157 | |
| OFFSET | -4.711<br>-3.000 | 0.000 | 3.000<br>4.491 |

## CHAINAGE 1670



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.390<br>1003.204 | | 1003.204<br>1003.371 |
| GROUND | | 1003.391 | |
| OFFSET | -4.529<br>-3.000 | 0.000 | 3.000<br>4.500 |

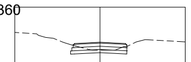
## CHAINAGE 1300



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.515<br>1001.754 | | 1001.804<br>1001.964 |
| GROUND | | 1001.391 | |
| OFFSET | -3.369<br>-3.000 | 0.000 | 3.000<br>3.745 |

## CHAINAGE 1360



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1002.297<br>1002.294 | | 1002.294<br>1002.164 |
| GROUND | | 1001.981 | |
| OFFSET | -3.101<br>-3.000 | 0.000 | 3.000<br>3.196 |

## CHAINAGE 1420



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.020<br>1002.686 | | 1002.699<br>1002.699 |
| GROUND | | 1002.753 | |
| OFFSET | -4.751<br>-3.000 | 0.000 | 3.000<br>3.159 |

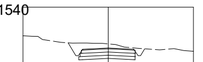
## CHAINAGE 1480



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.571 | 1002.803 | 1002.803<br>1002.717 |
| GROUND | | 1003.003 | |
| OFFSET | -5.213 | -3.000 | 0.000<br>3.000<br>3.320 |

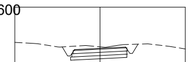
## CHAINAGE 1540



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.327 | 1003.025 | 1003.025<br>1003.046 |
| GROUND | | 1003.277 | |
| OFFSET | -4.704 | -3.000 | 0.000<br>3.000<br>4.282 |

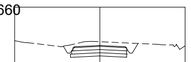
## CHAINAGE 1600



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.135<br>1003.009 | | 1003.129<br>1003.264 |
| GROUND | | 1003.138 | |
| OFFSET | -4.439<br>-3.000 | 0.000 | 3.000<br>4.453 |

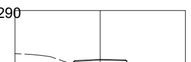
## CHAINAGE 1660



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.167<br>1003.142 | | 1003.142<br>1003.296 |
| GROUND | | 1003.378 | |
| OFFSET | -4.288<br>-3.000 | 0.000 | 3.000<br>4.461 |

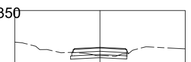
## CHAINAGE 1290



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.457<br>1001.650 | | 1001.684<br>1001.493 |
| GROUND | | 1001.264 | |
| OFFSET | -3.289<br>-3.000 | 0.000 | 3.000<br>3.422 |

## CHAINAGE 1350



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1002.034<br>1002.215 | | 1002.215<br>1001.990 |
| GROUND | | 1001.878 | |
| OFFSET | -3.271<br>-3.000 | 0.000 | 3.000<br>3.352 |

## CHAINAGE 1410



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.058<br>1002.656 | | 1002.631<br>1002.523 |
| GROUND | | 1002.652 | |
| OFFSET | -4.853<br>-3.000 | 0.000 | 3.000<br>3.150 |

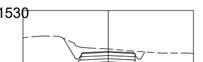
## CHAINAGE 1470



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.419<br>1002.899 | | 1002.899<br>1002.787 |
| GROUND | | 1002.833 | |
| OFFSET | -5.030 | -3.000 | 0.000<br>3.000<br>3.168 |

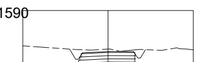
## CHAINAGE 1530



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.698<br>1003.019 | | 1003.019<br>1003.054 |
| GROUND | | 1003.196 | |
| OFFSET | -5.269<br>-3.000 | 0.000 | 3.000<br>4.303 |

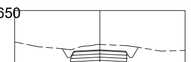
## CHAINAGE 1590



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.189<br>1003.013 | | 1003.067<br>1003.162 |
| GROUND | | 1003.191 | |
| OFFSET | -4.514<br>-3.000 | 0.000 | 3.000<br>4.393 |

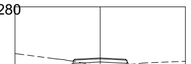
## CHAINAGE 1650



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.205<br>1003.092 | | 1003.092<br>1002.273 |
| GROUND | | 1003.407 | |
| OFFSET | -4.420<br>-3.000 | 0.000 | 3.000<br>4.523 |

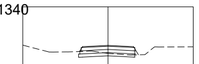
## CHAINAGE 1280



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.441<br>1001.541 | | 1001.541<br>1001.269 |
| GROUND | | 1001.219 | |
| OFFSET | -3.151<br>-3.000 | 0.000 | 3.000<br>3.318 |

## CHAINAGE 1340



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.903<br>1002.131 | | 1002.131<br>1001.749 |
| GROUND | | 1001.816 | |
| OFFSET | -3.342<br>-3.000 | 0.000 | 3.000<br>3.973 |

## CHAINAGE 1400



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.102<br>1002.869 | | 1002.577<br>1002.347 |
| GROUND | | 1002.798 | |
| OFFSET | -4.900<br>-3.000 | 0.000 | 3.000<br>3.022 |

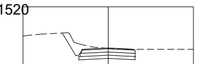
## CHAINAGE 1460



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.384<br>1002.865 | | 1002.865<br>1002.868 |
| GROUND | | 1002.851 | |
| OFFSET | -5.029 | -3.000 | 0.000<br>3.000<br>4.285 |

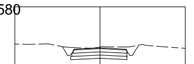
## CHAINAGE 1520



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.772<br>1003.010 | | 1003.010<br>1003.008 |
| GROUND | | 1003.057 | |
| OFFSET | -5.394 | -3.000 | 0.000<br>3.000<br>4.302 |

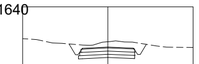
## CHAINAGE 1580



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.133<br>1003.016 | | 1003.016<br>1003.201 |
| GROUND | | 1003.113 | |
| OFFSET | -4.425<br>-3.000 | 0.000 | 3.000<br>4.627 |

## CHAINAGE 1640



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.259<br>1003.053 | | 1003.063<br>1002.241 |
| GROUND | | 1003.383 | |
| OFFSET | -4.559<br>-3.000 | 0.000 | 3.000<br>4.516 |

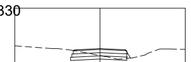
## CHAINAGE 1270



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.338<br>1001.429 | | 1001.429<br>1001.161 |
| GROUND | | 1001.175 | |
| OFFSET | -3.137<br>-3.000 | 0.000 | 3.000<br>3.971 |

## CHAINAGE 1330



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1002.013<br>1002.023 | | 1002.047<br>1001.699 |
| GROUND | | 1001.775 | |
| OFFSET | -3.046<br>-3.000 | 0.000 | 3.000<br>3.883 |

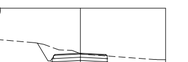
## CHAINAGE 1390



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.057<br>1002.629 | | 1002.431<br>1002.411 |
| GROUND | | 1002.706 | |
| OFFSET | -4.892<br>-3.000 | 0.000 | 3.000<br>3.142 |

## CHAINAGE 1450



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.357<br>1002.826 | | 1002.826<br>1002.757 |
| GROUND | | 1002.886 | |
| OFFSET | -5.046 | -3.000 | 0.000<br>3.000<br>3.104 |

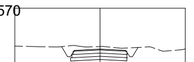
## CHAINAGE 1510



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.579<br>1002.996 | | 1002.994<br>1002.844 |
| GROUND | | 1003.099 | |
| OFFSET | -5.125 | -3.000 | 0.000<br>3.000<br>3.152 |

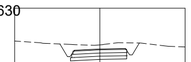
## CHAINAGE 1570



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.195<br>1003.020 | | 1003.020<br>1003.156 |
| GROUND | | 1003.290 | |
| OFFSET | -4.512<br>-3.000 | 0.000 | 3.000<br>4.454 |

## CHAINAGE 1630



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.320<br>1003.026 | | 1003.107<br>1003.366 |
| GROUND | | 1003.277 | |
| OFFSET | -4.692<br>-3.000 | 0.000 | 3.000<br>4.838 |

## CHAINAGE 1260



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.211<br>1001.312 | | 1001.312<br>1001.160 |
| GROUND | | 1001.171 | |
| OFFSET | -3.151<br>-3.000 | 0.000 | 3.000<br>3.197 |

## CHAINAGE 1320



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1001

| | | | |
|---|---|---|---|
| FINISHED | 1001.868<br>1001.891 | | 1002.027<br>1001.616 |
| GROUND | | 1001.612 | |
| OFFSET | -3.124<br>-3.000 | 0.000 | 3.000<br>3.817 |

## CHAINAGE 1380



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.049<br>1002.525 | | 1002.442<br>1002.419 |
| GROUND | | 1002.457 | |
| OFFSET | -5.036 | -3.000 | 0.000<br>3.000<br>3.334 |

## CHAINAGE 1440



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.166<br>1002.784 | | 1002.784<br>1002.714 |
| GROUND | | 1002.757 | |
| OFFSET | -4.823 | -3.000 | 0.000<br>3.000<br>3.105 |

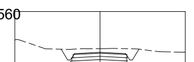
## CHAINAGE 1500



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.607<br>1002.978 | | 1002.978<br>1002.864 |
| GROUND | | 1003.123 | |
| OFFSET | -5.193 | -3.000 | 0.000<br>3.000<br>4.229 |

## CHAINAGE 1560



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.230<br>1003.024 | | 1003.024<br>1003.236 |
| GROUND | | 1003.255 | |
| OFFSET | -4.560<br>-3.000 | 0.000 | 3.000<br>4.569 |

## CHAINAGE 1620



H.SCALE 1:250
V.SCALE 1:100
DATUM = 1002

| | | | |
|---|---|---|---|
| FINISHED | 1003.416<br>1003.010 | | 1003.130<br>1003.295 |
| GROUND | | 1003.247 | |
| OFFSET | -4.859<br>-3.000 | 0.000 | 3.000<br>4.498 |

| No | DATE | REVISION | CONSULT | DIR |
|---|---|---|---|---|
| 0 | 06/2025 | ISSUED FOR TENDER PURPOSES | DOLMEN | M.P |

| | |
|---|---|
| DESIGNED BY | M.P |
| CHECKED BY | M.P |
| DRAWN BY | T.M |
| CHECKED BY | M.P |

BLOUBERG LOCAL MUNICIPALITY
P.O.BOX 1593
SENWABARWANA
0790
Tel: 015 505 7100
Fax: 015 505 0296

DOLMEN ENGINEERS
A VISION TO CLEAR SOLUTIONS
DOLMEN CONSULTING ENGINEERS
P.O. BOX 468
BENDOR PARK
0713
Tel: 015 295 4885
Fax: 015 295 8384

BLM DATE
DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD

GA-KOBE ROAD 7:CROSS SECTIONS: CHAINAGE 1260 TO 1670

TENDER (Full signature)
BLM 20 / /
For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/R7/CS/04

SHEET 15 OF 16

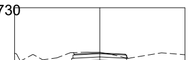
SCALE
N.T.S

REVISION
0

## CHAINAGE 1730

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

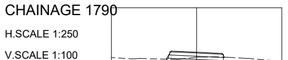


| | | | |
|---|---|---|---|
| FINISHED | 1003.821<br>1003.821 | | 1003.821<br>1003.624 |
| GROUND | | 1003.906 | |
| OFFSET | -3.100<br>-3.000 | 0.000 | 3.000<br>3.206 |

## CHAINAGE 1790

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004

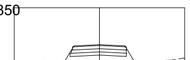


| | | | |
|---|---|---|---|
| FINISHED | 1004.984<br>1004.984 | | 1004.856<br>1004.656 |
| GROUND | | 1004.678 | |
| OFFSET | -3.074<br>-3.000 | 0.000 | 3.000<br>3.204 |

## CHAINAGE 1850

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1006.222<br>1006.208 | | 1006.208<br>1005.432 |
| GROUND | | 1005.254 | |
| OFFSET | -4.479<br>-3.000 | 0.000 | 3.000<br>4.164 |

## CHAINAGE 1720

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003



| | | | |
|---|---|---|---|
| FINISHED | 1003.901<br>1003.889 | | 1003.889<br>1003.676 |
| GROUND | | 1003.720 | |
| OFFSET | -3.262<br>-3.000 | 0.000 | 3.000<br>3.020 |

## CHAINAGE 1780

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1004.495<br>1004.495 | | 1004.654<br>1004.654 |
| GROUND | | 1004.570 | |
| OFFSET | -3.269<br>-3.000 | 0.000 | 3.092<br>3.317 |

## CHAINAGE 1840

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1005.179<br>1005.979 | | 1005.979<br>1005.295 |
| GROUND | | 1005.185 | |
| OFFSET | -4.200<br>-3.000 | 0.000 | 3.000<br>4.025 |

## CHAINAGE 1710

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003



| | | | |
|---|---|---|---|
| FINISHED | 1003.363<br>1003.363 | | 1003.569<br>1003.526 |
| GROUND | | 1003.477 | |
| OFFSET | -3.326<br>-3.000 | 0.000 | 3.000<br>3.082 |

## CHAINAGE 1770

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004

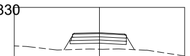


| | | | |
|---|---|---|---|
| FINISHED | 1004.418<br>1004.464 | | 1004.464<br>1004.401 |
| GROUND | | 1004.434 | |
| OFFSET | -3.070<br>-3.000 | 0.000 | 3.000<br>3.096 |

## CHAINAGE 1830

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1005.010<br>1005.787 | | 1005.750<br>1005.016 |
| GROUND | | 1005.036 | |
| OFFSET | -4.165<br>-3.000 | 0.000 | 3.000<br>4.102 |

## CHAINAGE 1700

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

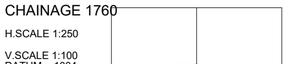


| | | | |
|---|---|---|---|
| FINISHED | 1003.362<br>1003.460 | | 1003.460<br>1003.314 |
| GROUND | | 1003.271 | |
| OFFSET | -3.148<br>-3.000 | 0.000 | 3.000<br>3.219 |

## CHAINAGE 1760

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1004.244<br>1004.288 | | 1004.288<br>1004.091 |
| GROUND | | 1004.295 | |
| OFFSET | -3.063<br>-3.000 | 0.000 | 3.001<br>3.091 |

## CHAINAGE 1820

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1004.974<br>1005.630 | | 1005.522<br>1004.941 |
| GROUND | | 1004.958 | |
| OFFSET | -3.983<br>-3.000 | 0.000 | 3.000<br>3.871 |

## CHAINAGE 1690

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

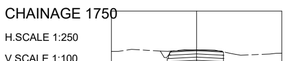


| | | | |
|---|---|---|---|
| FINISHED | 1003.518<br>1003.383 | | 1003.383<br>1003.293 |
| GROUND | | 1003.356 | |
| OFFSET | -4.483<br>-3.000 | 0.000 | 3.000<br>3.108 |

## CHAINAGE 1750

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003

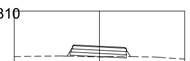


| | | | |
|---|---|---|---|
| FINISHED | 1004.123<br>1004.119 | | 1004.119<br>1003.940 |
| GROUND | | 1004.175 | |
| OFFSET | -4.255<br>-3.000 | 0.000 | 3.042<br>3.045 |

## CHAINAGE 1810

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004

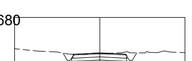


| | | | |
|---|---|---|---|
| FINISHED | 1004.865<br>1005.613 | | 1005.588<br>1004.888 |
| GROUND | | 1004.847 | |
| OFFSET | -3.703<br>-3.000 | 0.000 | 3.000<br>3.847 |

## CHAINAGE 1680

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1002

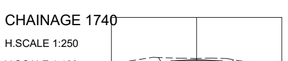


| | | | |
|---|---|---|---|
| FINISHED | 1003.324<br>1003.278 | | 1003.278<br>1003.338 |
| GROUND | | 1003.287 | |
| OFFSET | -4.320<br>-3.000 | 0.000 | 3.000<br>4.339 |

## CHAINAGE 1740

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1003



| | | | |
|---|---|---|---|
| FINISHED | 1004.117<br>1003.964 | | 1003.964<br>1004.015 |
| GROUND | | 1004.072 | |
| OFFSET | -4.479<br>-3.000 | 0.000 | 3.000<br>4.326 |

## CHAINAGE 1800

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1004



| | | | |
|---|---|---|---|
| FINISHED | 1004.731<br>1005.789 | | 1005.789<br>1004.787 |
| GROUND | | 1004.728 | |
| OFFSET | -3.865<br>-3.000 | 0.000 | 3.000<br>3.922 |

## CHAINAGE 1860

H.SCALE 1:250

V.SCALE 1:100
DATUM = 1005



| | | | |
|---|---|---|---|
| FINISHED | 1005.805<br>1006.436 | | 1006.436<br>1005.837 |
| GROUND | | 1005.719 | |
| OFFSET | -3.946<br>-3.000 | 0.000 | 3.000<br>3.898 |

| No | DATE | REVISION | CONSULT | DIR |
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DOLMEN ENGINEERS CC DATE

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

GA-KOBE ROAD 7:CROSS SECTIONS: CHAINAGE 1680 TO 1860

TENDER
(Full signature)

20 / /
BLM

20 / /
For: DOLMEN ENGINEERS CC

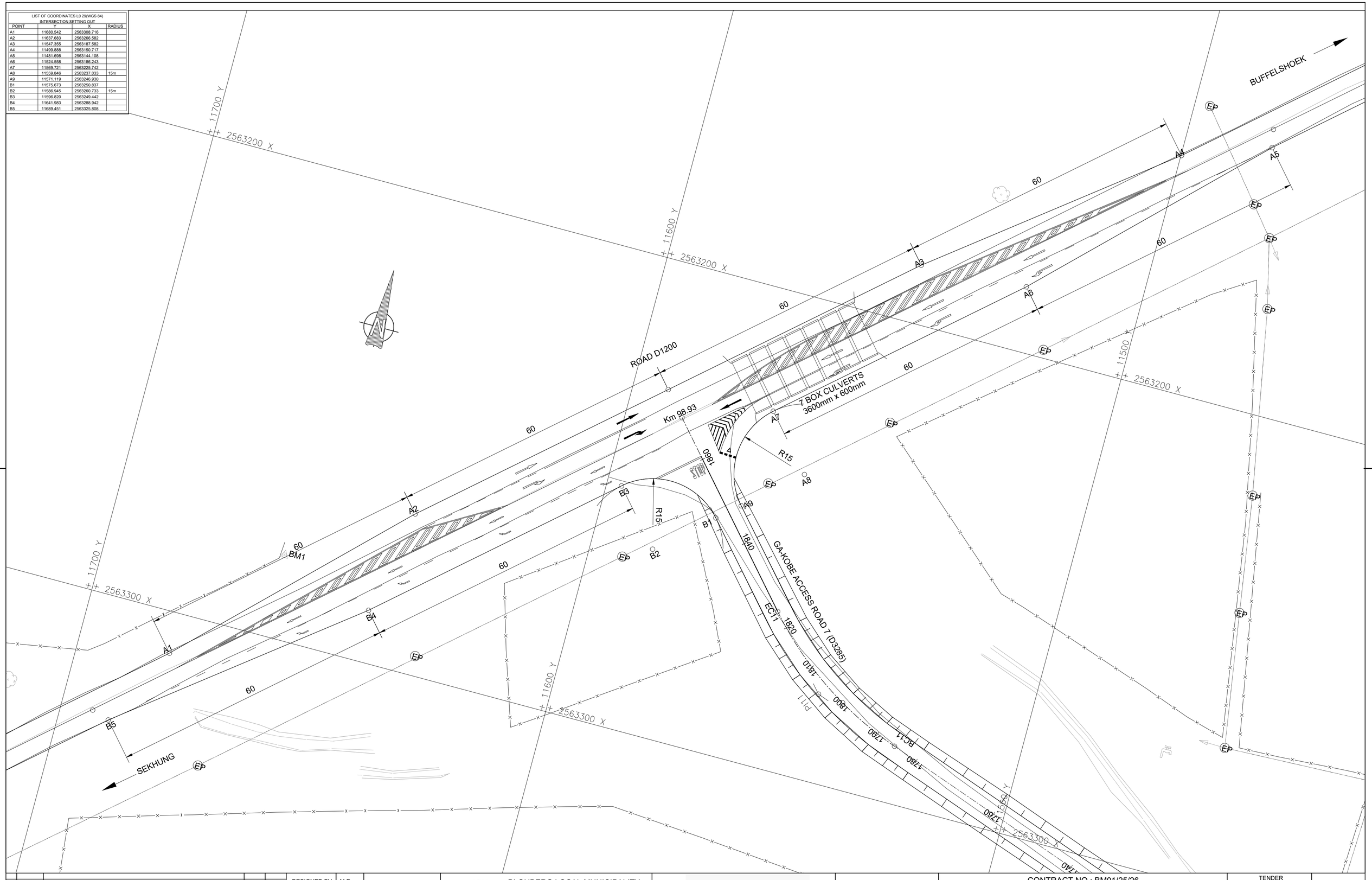
DRAWING NUMBER
DE68/R7/CS/05

SHEET 16 OF 16

SCALE
N.T.S

REVISION
0

| LIST OF COORDINATES L0 29(WGS 84) INTERSECTION SETTING OUT | | | |
|---|---|---|---|
| POINT | Y | X | RADIUS |
| A1 | 11680.542 | 2563308.716 | |
| A2 | 11637.683 | 2563266.582 | |
| A3 | 11547.355 | 2563187.582 | |
| A4 | 11499.888 | 2563150.717 | |
| A5 | 11481.698 | 2563144.108 | |
| A6 | 11524.558 | 2563186.243 | |
| A7 | 11569.721 | 2563225.742 | |
| A8 | 11559.846 | 2563237.033 | 15m |
| A9 | 11571.119 | 2563246.930 | |
| B1 | 11575.673 | 2563250.837 | |
| B2 | 11586.945 | 2563260.733 | 15m |
| B3 | 11596.820 | 2563249.442 | |
| B4 | 11641.983 | 2563288.942 | |
| B5 | 11689.451 | 2563325.808 | |




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DOLMEN ENGINEERS CC _____ DATE _____

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

INTERSECTION 01: ROAD D1200 AND GA-KOBE ACCESS ROAD 7 SETTING OUT PLAN

TENDER (Full signature)

BLM _____ 20 / /

For: DOLMEN ENGINEERS CC _____ 20 / /

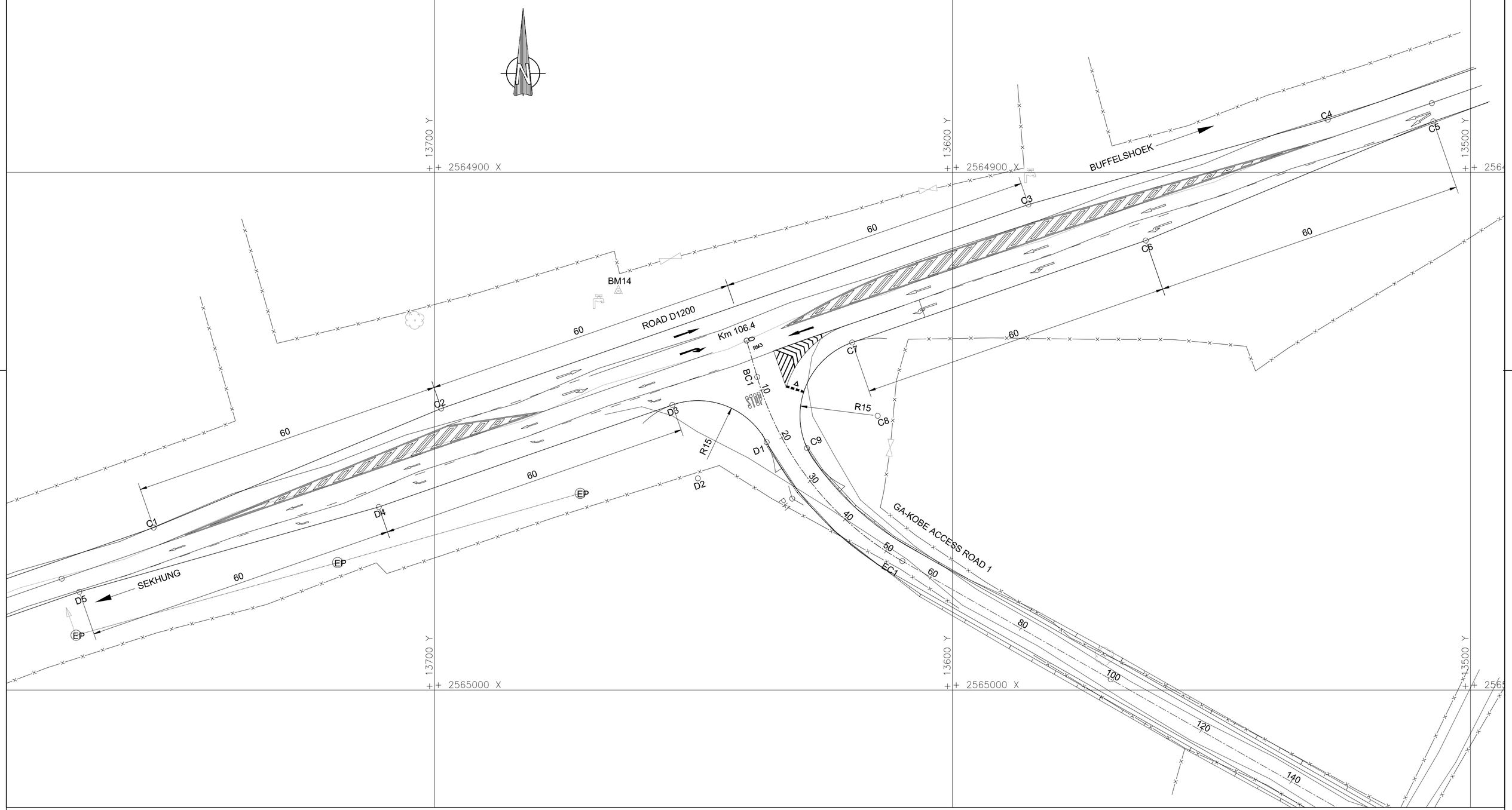
DRAWING NUMBER: DE68/INT/RD7/01

SHEET 1 OF 5

SCALE: N.T.S

REVISION: 0

| LIST OF COORDINATES L0 29(WGS 84) INTERSECTION SETTING OUT | | | |
|---|---|---|---|
| POINT | Y | X | RADIUS |
| C1 | 13754.220 | 2564968.622 | |
| C2 | 13698.695 | 2564945.618 | |
| C3 | 13585.345 | 2564906.223 | |
| C4 | 13527.551 | 2564889.842 | |
| C5 | 13507.160 | 2564890.165 | |
| C6 | 13562.686 | 2564913.169 | |
| C7 | 13619.360 | 2564932.866 | |
| C8 | 13614.436 | 2564947.035 | 15m |
| C9 | 13628.079 | 2564953.269 | |
| D1 | 13635.863 | 2564952.141 | |
| D2 | 13649.151 | 2564959.101 | 15m |
| D3 | 13654.076 | 2564944.932 | |
| D4 | 13710.750 | 2564964.630 | |
| D5 | 13768.574 | 2564981.021 | |




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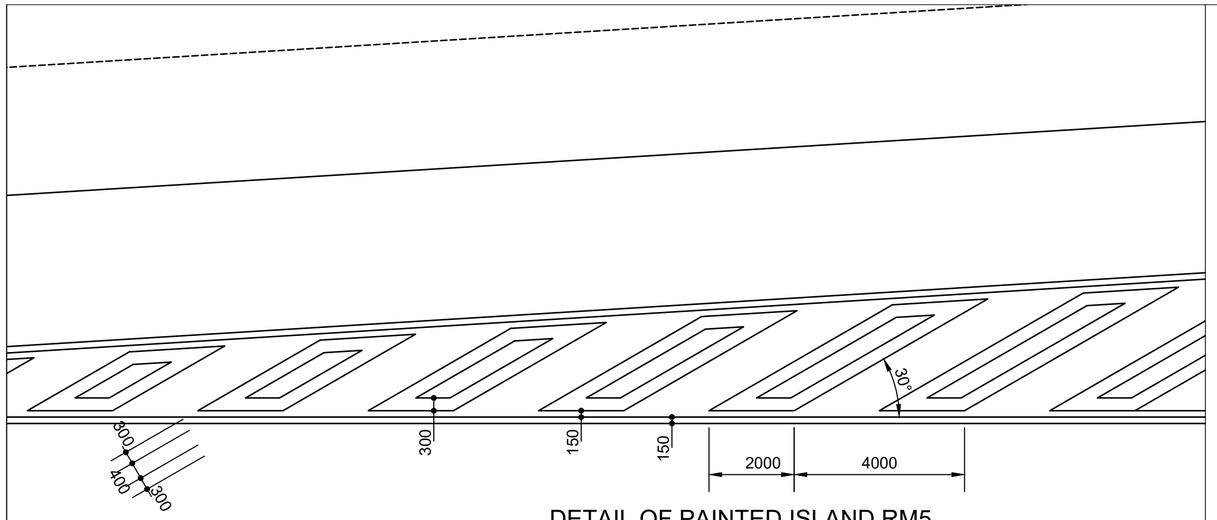
GA-KOBE ACCESS ROAD AND INTERNAL STREETS

INTERSECTION 02: ROAD D1200 AND GA-KOBE ACCESS ROAD 1
SETTING OUT PLAN

TENDER (Full signature)
BLM 20 / /
For: DOLMEN ENGINEERS CC 20 / /

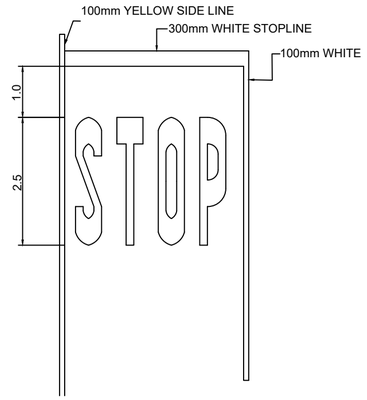
DRAWING NUMBER
DE68/INT/RD1/01

SHEET 2 OF 5
SCALE
N.T.S
REVISION 0



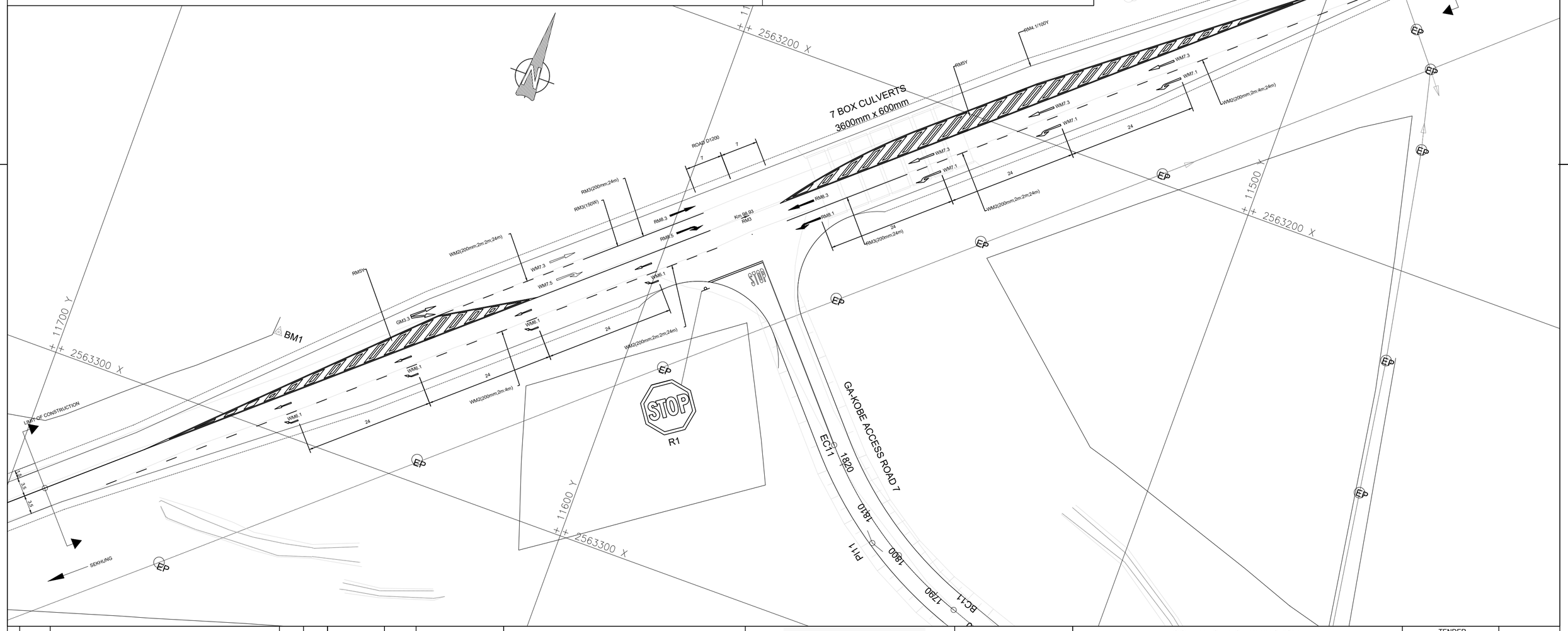

DETAIL OF PAINTED ISLAND RM5

N.T.S.




TYPICAL DETAIL STOPMARKING

N.T.S




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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GA-KOBE ACCESS ROAD AND INTERNAL STREETS

INTERSECTION 01: ROAD D1200 AND GA-KOBE ACCESS ROAD 7 (D3285) ROAD MARKING

TENDER (Full signature)

BLM 20 / /

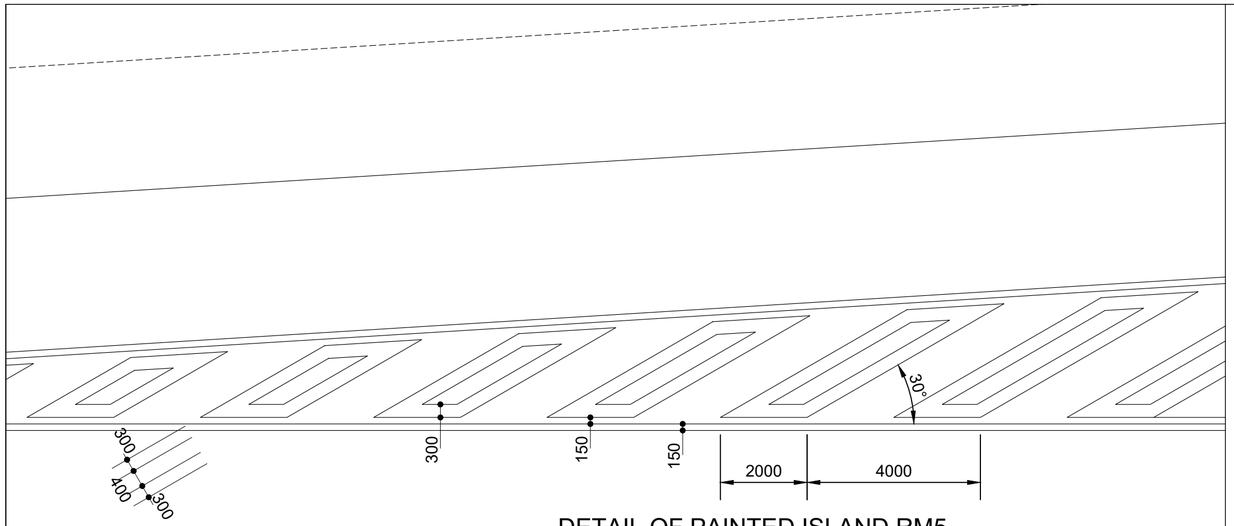
For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER DE68/RM/RD7/01

SHEET 3 OF 5

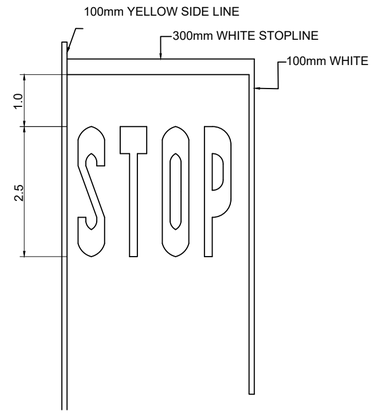
SCALE N.T.S

REVISION 0



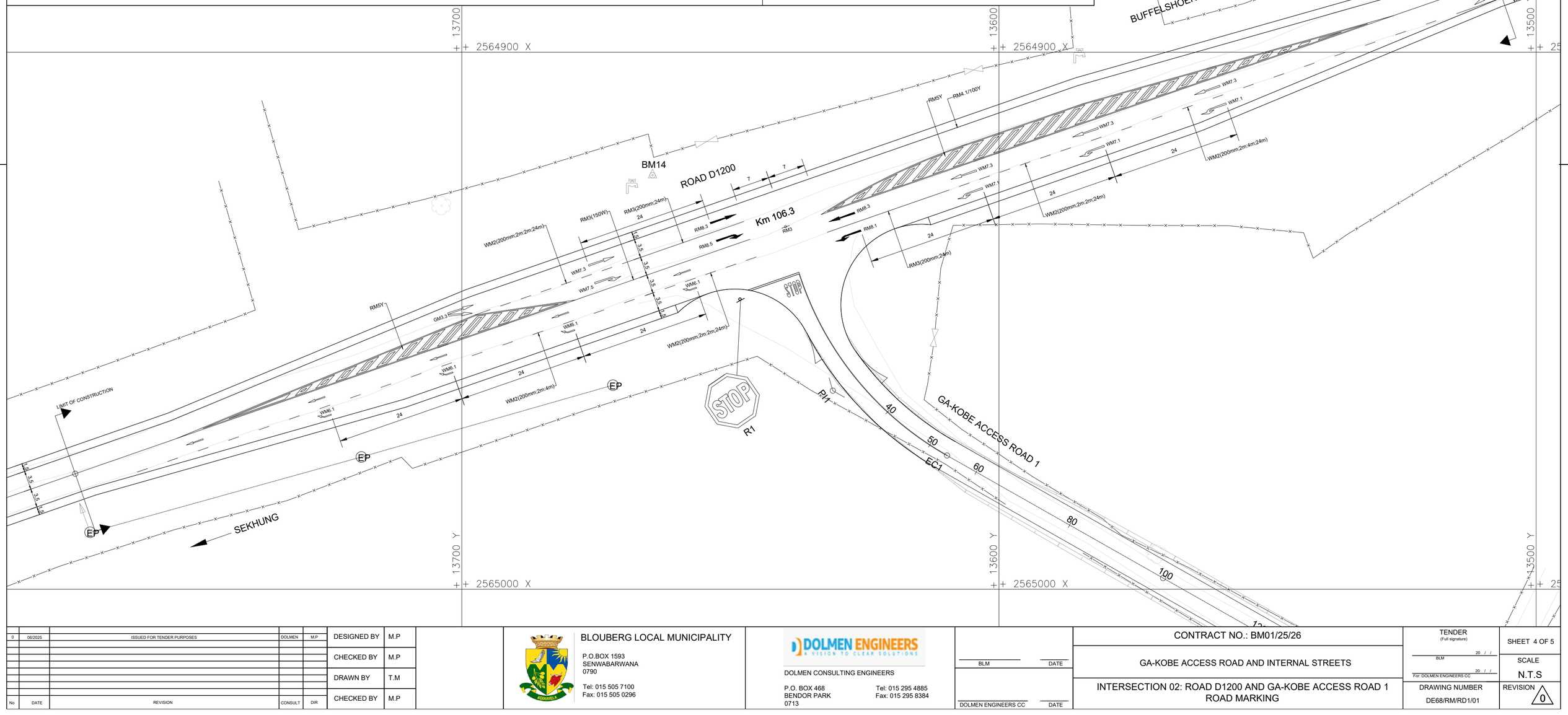

DETAIL OF PAINTED ISLAND RM5

N.T.S.




TYPICAL DETAIL STOPMARKING

N.T.S




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GA-KOBE ACCESS ROAD AND INTERNAL STREETS

INTERSECTION 02: ROAD D1200 AND GA-KOBE ACCESS ROAD 1
ROAD MARKING

TENDER
(Full signature)

BLM 20 / /

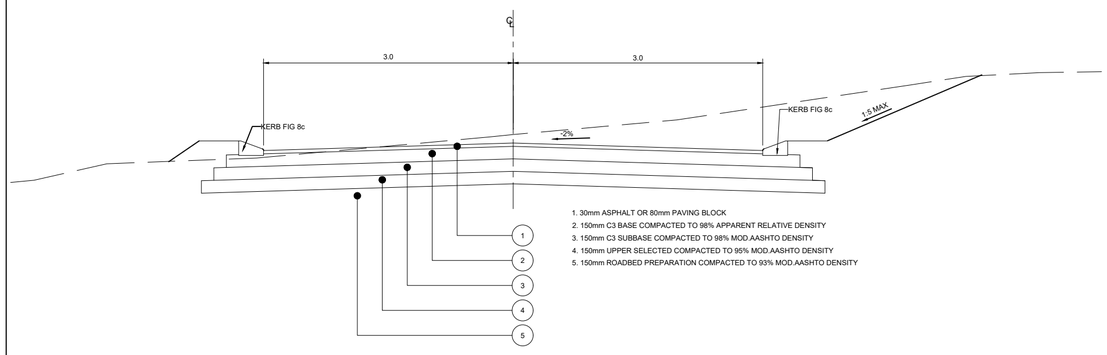
For: DOLMEN ENGINEERS CC 20 / /

DRAWING NUMBER
DE68/RM/RD1/01

SHEET 4 OF 5

SCALE
N.T.S

REVISION
0

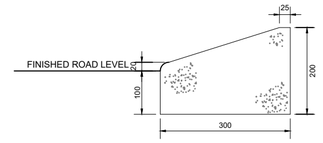



1. 30mm ASPHALT OR 80mm PAVING BLOCK
2. 150mm C3 BASE COMPACTED TO 98% APPARENT RELATIVE DENSITY
3. 150mm C3 SUBBASE COMPACTED TO 98% MOD.AASHTO DENSITY
4. 150mm UPPER SELECTED COMPACTED TO 95% MOD.AASHTO DENSITY
5. 150mm ROADBED PREPARATION COMPACTED TO 93% MOD.AASHTO DENSITY

## TYPICAL CROSS SECTION THROUGH TARRED STREET

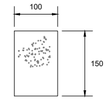
N.T.S.

| PAVEMENT DESIGN (UTG2) Ga-Kobe | |
|---|---|
| ROAD CATEGORY | C |
| AADT | 833 |
| FACTOR (X1.2) FOR 24 HOUR COUNT | 1.2 |
| % HEAVY VEHICLES | 9.8 % |
| YEAR COUNTED | 2016 |
| BASE YEAR | 2023 |
| YEARS UNTIL OPEN FOR TRAFFIC | 2025 |
| % ANNUAL GROWTH IN TRAFFIC | 10% |
| TRAFFIC GROWTH FACTOR | 1.04 |
| AVERAGE E80'S AT BASE YEAR | 341.6 |
| DESIGN LIFE TIME | 15 |
| TOTAL E80'S PER ANALYSIS PERIOD | 2.38E+06 |
| PAVEMENT CLASS | ES3 |



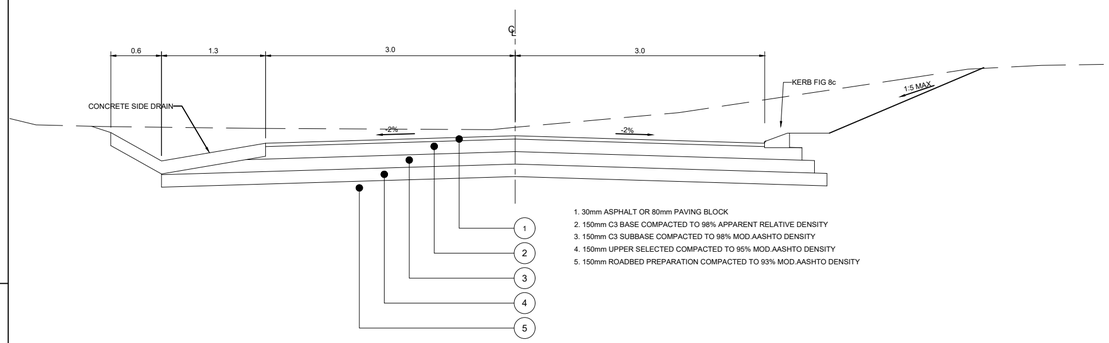

## MOUNTABLE KERB DETAIL SABS FIG.8c

SCALE 1:5




## CAST INSITU EDGE BEAM

SCALE 1:5



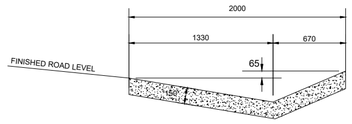

1. 30mm ASPHALT OR 80mm PAVING BLOCK
2. 150mm C3 BASE COMPACTED TO 98% APPARENT RELATIVE DENSITY
3. 150mm C3 SUBBASE COMPACTED TO 98% MOD.AASHTO DENSITY
4. 150mm UPPER SELECTED COMPACTED TO 95% MOD.AASHTO DENSITY
5. 150mm ROADBED PREPARATION COMPACTED TO 93% MOD.AASHTO DENSITY

## TYPICAL CROSS SECTION THROUGH TARRED STREET

N.T.S.

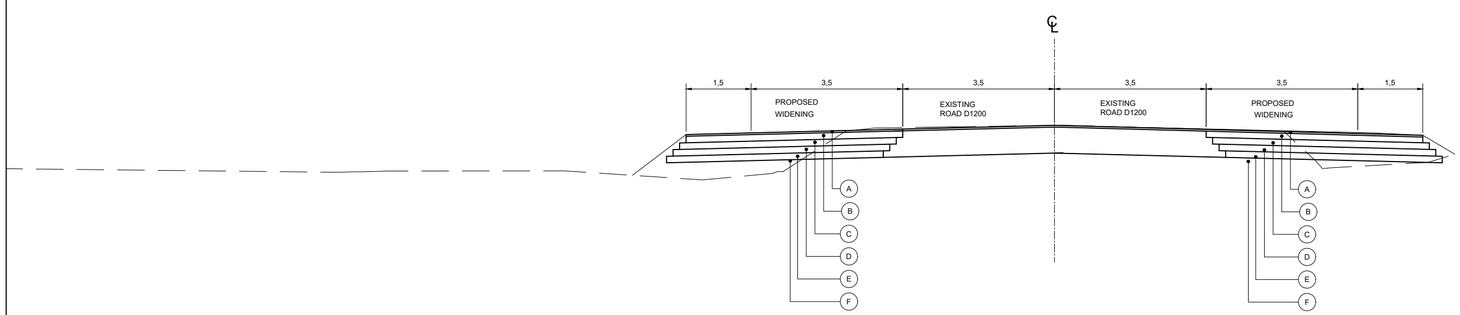
| LAYER NO. | DESCRIPTION | LAYER THICNESS | COLTO CLASS | COMPACTION ON % OF MOD. AASHTO DENSITY | MIN. GM | MAX P.I. | CBR AT % COMPACTION | UCS AT % COMPACTION | SPECIFICATION |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 30mm ASPHALT | | | | | | | | 4500 |
| 2 | BASE LAYER | 150 | C3 | 97 | 1.5 | 6 | — | 1200 | 3400 |
| 3 | STABILIZED UPPER SUBBASE | 150 | C3 | 97 | 1.5 | 6 | — | 1000 | 3400 |
| 4 | STABILIZED LOWER SUBBASE | 150 | C4 | 95 | 1.2 | 6 | — | 750 | 3400 |
| 5 | UPPER SELECTED | 150 | G6 | 95 | 1.2 | 2GM+10 | 25 | — | 3400 |
| 6 | LOWER SELECTED | 150 | G7 | 93 | — | — | 15 | — | 3400 |
| 7 | ROADBED | | G8 | 93 | — | — | 10 | — | 3300 |
| 8 | VERGE FILL COMPACTED IN MAX.150 mm LAYERS | | G9 | 93 | 0.75 | 2GM+10 | 7 | — | 3300 |
| 9 | FILL: COMPACTED IN MAX 150mm THICK LAYERS | | G9 | 93 | 0.75 | 2GM+10 | 7 | — | 3300 |
| 10 | 3 PASS ROLLER COMPACTION | | | — | — | — | — | — | 3300 |
| 11 | GRAVEL SHOULDER | 150 | G6 | 95 | 1.2 | 2GM+10 | 25 | — | 3400 |

NTS




## CROSS SECTION OF TYPE 'F' CONCRETE SIDE DRAIN

N.T.S.




## PROPOSED CROSS SECTION FOR ROAD D1200 WIDENING ON THE INTERSECTION WITH GA-KOBE ACCESS ROAD 1

Ⓐ 30mm ASPHALT

Ⓑ 150mm STABILISED BASE C3 UCS 12000KPa
COMPACTED TO 98% MOD AASHTO DENSITY

Ⓒ 150mm STABILISED SUB-BASE C3 UCS 1000KPa
COMPACTED TO 97% MOD AASHTO DENSITY

Ⓓ 150mm UPPER SELECTED SUBGRADE G6
COMPACTED TO 95% MOD AASHTO DENSITY

Ⓔ 150mm LOWER SELECTED SUBGRADE G7
COMPACTED TO 93% MOD AASHTO DENSITY

Ⓕ 150mm ROADBED OR SUBGRADE G8
COMPACTED TO 93% MOD AASHTO DENSITY

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BLM ..... DATE .....

DOLMEN ENGINEERS CC ..... DATE .....

CONTRACT NO.: BM01/25/26

GA-KOBE ACCESS ROAD AND INTERNAL STREETS

INTERSECTION 01: ROAD D1200 AND GA-KOBE ROAD 7 (D3295)
TYPICAL CROSS SECTION

TENDER (Full signature)

BLM ..... 20 / /

DOLMEN ENGINEERS CC ..... 20 / /

SHEET 5 OF 5

SCALE N.T.S

DRAWING NUMBER DE68/TD/RD7/01

REVISION 0