

**METSIMAHOLO LOCAL MUNICIPALITY****ADVERTISEMENT OF CONSTRUCTION BLOCK PAVED
ROADS AND STORMWATER IN METSIMAHOLO
TOWNSHIP WARD 5****BID NO.: MLM 11/2021/22****CIDB GRADING: 6 CE OR HIGHER****ISSUED BY:**

Metsimaholo Local Municipality
Municipal Building
10 Fichardt Street
Sasolburg
4800

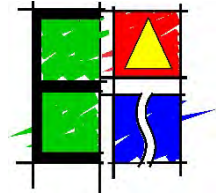


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Contact Name	:	
Contact No	:	
Email Address	:	
CSD Supplier Number	:	
CIDB: CRS Number	:	
Tender Amount (VAT incl.):		R

TENDER NUMBER: MLM 11/2021/22

CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5

LIST OF CONTRACT DOCUMENTS

The following documents form part of this contract:

- Volume 1: The General Conditions of Contract for Construction Works, Second Edition (GCC 2015), published by the South African Institute of Civil Engineers, which the Tenderer shall purchase himself (see note 1 below).
- Volume 2: SANS 1200 The Standard Specifications for Civil Engineering Construction
- Volume 3: The Standard Specifications for Road and Bridge Works for State Road Authorities, 1998 Edition (COLTO) published by the South African Institute of Civil Engineers, which the Tenderer shall purchase himself (see note 3 below).
- Volume 4: The Project Document containing the Tender Notice, Conditions of Tender, Tender Data, Returnable Schedules, Form of Offer, General and Particular Conditions of Contract, Pricing Schedule, Project Specifications and Site Information, issued by the Employer (see note 4 below). The Employer's Form of Acceptance and any correspondence from the selected Tenderer, performance security-demand guarantee and all addenda issued during the period of tender will also form part of this volume once a Tenderer has been appointed.
- Volume 5: The civil drawings are part of Volume 4

Notes to Tenderer

1. **Volume 1 is obtainable from SAICE, Private Bag X200, Halfway House, 1685.**
Tel: +27 11 805 5947 Fax: +27 11 805 5971, email: civilinfo@saice.org.za.
Website: <http://www.saice.org.za>
2. **Volume 2 is obtainable from SA Bureau of Standards Dr Lategan Road; Groenkloof; Pretoria; 0001. Private Bag X191, Pretoria, 0001.**
3. **Volume 3 is obtainable from SAICE, Private Bag X200, Halfway House, 1685.**
Tel: +27 11 805 5947 Fax: +27 11 805 5971, email: civilinfo@saice.org.za.
Website: <http://www.saice.org.za>
4. **Volume 4 is issued at tender stage as per tender advertisement. The pricing data is available on request in Excel format**

At contract stage Volume 4 will be a bound signed paper copy containing the following documents:
 - **Returnable schedules relevant to the project**
 - **Agreements and Contract Data**
 - **Pricing Data**
 - **Scope of Work**
 - **Site Information**
4. **SUBMISSION OF TENDER – Refer to clause F2 in the Tender Data**

Information provided by a Tenderer over and above the above elements of Volume 4 shall be treated as information only and will only be bound into the document if the tenderer notes on Form A4: Schedule of Variations or deviations that the information has a bearing on the tender price.

- 5. For alternative offers, the Tenderer shall refer to clause F2.12 in the Tender Data**

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METSIMAHOLO LOCAL MUNICIPALITY

BID NO: MLM 11/2021/22

CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5

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METSIMAHOLO LOCAL MUNICIPALITY

BID NO: MLM 11/2021/22

**CONSTRUCTION OF BLOCK PAVED ROADS AND
STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5**

PART T1: TENDERING PROCEDURES

PART T2: RETURNABLE DOCUMENTS

T.1.1 TENDER NOTICE AND INVITATION TO TENDER



TENDER NOTICE

BID NO: MLM 11/2021/22

METSIMAHOLO LOCAL MUNICIPALITY invites tenders for the **CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5.**

Tenderers should have a CIDB Contractor grading designation of **6CE** or higher.

Bid documents will be available during working hours upon payment of R750.00 at The Municipal Building, 10 Fichardt Street, Sasolburg. Documents can also be downloaded for the e-tender portal www.e-tenders.gov.za for free.

No clarification meeting will be required.

It is a pre-requisite that Bidders must be in good standing with SARS, have the requisite CIDB certificate, and must be registered on the Central Supplier Database (CSD)..

The closing time and date for receipt of tenders is **26 October 2021, 11H00**. Bid documents, clearly marked BID MLM 11/2021/22; CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5 must be deposited in the bid box at the Municipal Building, 10 Fichardt Street, Sasolburg before the closing time. Bid documents will be opened in public soon after the closing time. Telegraphic, telephonic, telex, e-mail, facsimile and late tenders will not be accepted. Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

Service providers will be adjudicated according to the Supply Chain Management Policy using the 80/20 point system, based on the Preferential Procurement Policy Framework Act 5 of 2005 and MFMA, Act 56 of 2003 as well as the Broad-Based Black Economic Empowerment Act, Act 53 of 2003.

Queries relating to the issues of these documents may be addressed to:

Administrative:

Sibusiso Bila
Tel No. +27 16 973 8487
E-mail: sibusiso.bila@metsimaholo.gov.za

Technical:

Mr A. Westerberg
Tel No.+27 82 5757 353
E-mail: antonw@easpe.co.za

T1.2 CONDITIONS OF TENDER

T1.2 CONDITIONS OF TENDER

F.1 General

F.1.1 Actions

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

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

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

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

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

- a) **conflict of interest** means any situation in which:
 - i) Someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) in compatibility or contradictory interests exist between an employee and the organisation which employs that employee.

- b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents, *or any official in the public service or in the employ of an Organ of State*, in the tender process; and
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body
- f) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs
- g) **tenderer** means any organisation who is represented by a duly authorised employee, partner, shareholder or director that responds to the Tender Notice by drawing tender documents
- h) **these conditions of tender** mean the Standard Conditions of Tender (as published and amended from time to time by the Construction Industry Development Board) and the employer's Special Conditions of Tender, the latter are demonstrated by appearing in italics.

F.1.4 Communication and employer's agent

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

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

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

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months (*measured between the relevant closing dates of the abandoned tender and the re-issued tender*) unless only one tender was received and such tender was returned unopened to the tenderer, *or if there is agreement by the participating tenderers*.

F.2 Tenderer's obligations

F.2.1 Eligibility

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

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

F.2.2 Cost of tendering

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

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

Treat as confidential, *regardless whether or not a tender offer is submitted*, all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

Attend, where required, *in person or designate a suitably qualified person in the direct employ of the tenderer*, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data. *Any variation or deviation based on a point for which clarity should have been requested may render a tenderer's offer non-responsive in terms of F.3.8.*

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

F.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all *costs prescribed as being applicable to the specified pay items as well as all* duties, taxes except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.

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

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

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

F.2.11 Alterations to documents

Not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed. *Alternative tender offers shall not alter any contingency pay items provided in the tender documents, or offer fixed prices (except where such are provided in the postulated pricing schedule) or a fixed price contract.*

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

F.2.12.3 *Qualify a tender offer (except that no qualifications shall be in conflict with F.2.8) but undertake to do so by submitting such qualification in terms of F.2.12.1 and F.2.12.2.*

F.2.13 Submitting a tender offer

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

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

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

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

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

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

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

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

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

F.2.14 Information and data to be completed in all respects

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

F.2.15 Closing time

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

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

F.2.16 Tender offer validity

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

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

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be *modified, corrected*, withdrawn or substituted by giving the employer written notice before the closing time for tenders that a tender is to be *modified, corrected*, withdrawn or substituted.

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

F.2.17 Clarification or *withdrawal* of tender offer after submission

F.2.17.1 Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors or *adjusting of imbalanced rates*, by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

F.2.17.2 *Accept that the employer may, at its sole discretion, accept a less favourable tender from those already received or invite fresh tenders if a tenderer, at any time after the opening of his tender offer but prior to the signing of a contract based on his tender offer:*

- a) *withdraws his tender; or*
- b) *gives notice of his inability to execute the contract in terms of his tender; or*
- c) *fails to sign a contract or furnish the performance security within the period fixed in the letter of award or any extended period fixed by the employer; or*
- d) *fails to comply with a request made in terms of F.2.17.1 or F.2.18.1,*

in which case such tenderer shall be automatically barred from tendering on any of the employer's future tenders for a period to be determined by the employer, but not less than twelve (12) months, from the date of tender closure. The employer may fully or partly exempt a tenderer from the provisions of this condition if he is of the opinion that the circumstances justify the exemption.

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

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive *and may invoke the same remedy as provided for under F.2.17.2.*

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

F.2.18.3 *Accept the employer's right, at its sole discretion, to appoint suitably qualified persons to report on the financial resources, standing with the South African Revenue Service regarding all taxes, management structure and ownership details of any tenderer and/or to verify the correctness of any information furnished to the employer in terms of F.2.17.1. Comply with the employer's request within the time stated in the request. Failure on the part of the tenderer to cooperate with such an inquiry shall entitle the employer to declare such tender offer as non-responsive and may invoke the same remedy as provided for under F.2.17.2.*

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to requests from the tenderer

F.3.1.1 Unless otherwise stated in the tender data respond to a request for clarification received up to five working days before the tender closing time stated in the tender data and notify all tenderers who drew tender documents.

F.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence: -

- a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
- b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2 Issue Addenda

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

F.3.3 Return late tender offers

Return tender offers *withdrawn in terms of F.2.16.3* or received after the closing time stated in the tender data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

F.3.4 Opening of tender submissions

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

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

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

F.3.5 Two-envelope system

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

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation *equal to or more than* the minimum number of points for quality stated in the tender data, and announce the total price. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

F.3.7.1 Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices. *In addition, any such disqualification shall entitle the employer, at its sole discretion, to impose a specified period during which tender offers will not be accepted from the offending tenderer.*

F.3.7.2 *Communicate to other state tender boards, provincial tender boards or parastatal tender boards any tenderer disqualified in terms of special condition F.3.7.1.*

F.3.7.3 *Consider rejecting any tender offers received from tenderers who are involved in any form of litigation or legal proceedings by or against the Employer.*

F.3.7.4 *Reject any offer from a tenderer who has not purchased the tender documents in his own name or in the name of a fellow member of a joint venture.*

F.3.7.5 *Reject any offer from a tenderer that contains information or data that is not in compliance with the minimum key staff qualification requirements.*

F.3.8 Test for responsiveness

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

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

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

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

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

F.3.9 Arithmetical errors, omissions, discrepancies and imbalanced unit rates

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

F.3.9.2 Check *responsive* tender offers for:

- a) the gross misplacement of the decimal point in any unit rate;
 - b) omissions made in completing the pricing schedule or bills of quantities; or
 - c) arithmetic errors in:
 - i) line-item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - ii) the summation of the prices.
- F) *imbalanced unit rates.*

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

F.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line 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 unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall be corrected.
- c) *Where the unit rates are imbalanced request tenderers to amend and adjust any rates declared imbalanced by the employer while retaining the total of the prices derived after any adjustment made.*

F.3.9.5 Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of his arithmetical errors or amend/adjust an imbalanced unit rate in the manner described above.

F.3.10 Clarification of a tender offer

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

- a) Rank tender offers from the most favourable to the least favourable comparative offer.
- b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this sub clause is repeated.

F.3.11.3 Method 2: Financial offer and preference

In the case of a financial offer and preferences:

- a) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11.7 and F.3.11.8.
- b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

$$T_{EV} = N_{FO} + N_P$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.
- d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub clause is repeated

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

- a) Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
- b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

$$T_{EV} = N_{FO} + N_Q$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.
- d) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub clause is repeated.

F.3.11.5 Method 4: Financial offer, quality and preferences

In the case of a financial offer, quality and preferences:

- a) Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
- b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula, unless otherwise stated in the tender data:

$$T_{EV} = N_{FO} + N_P + N_Q$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8;

N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.
- d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub clause is repeated.

F.3.11.6 Decimal places

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

F.3.11.7 Scoring Financial Offers

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

$$N_{FO} = W_1 \times A$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer.
 W_1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the tender data.
 A is a number calculated using the formula and option described in Table F.1 as stated in the tender data.

Table F.1: Formulae for calculating the value of A

Formula	Comparison aimed at achieving	Option 1 ^a	Option 2 ^a
1	Highest price or discount	$A = (1 + \frac{(P - P_m)}{P_m})$	$A = P_m / P$
2	Lowest price or percentage commission / fee	$A = (1 - \frac{(P - P_m)}{P_m})$	$A = P_m / P$
P_m is the comparative offer of the most favourable comparative offer (excluding all Provisional and Prime Cost Sums and the associated VAT). P is the comparative offer of the tender offer under consideration (excluding all Provisional and Prime Cost Sums and the associated VAT).			

F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences. Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring quality

Score each of the criteria and sub-criteria for quality in accordance with the provisions of the tender data.

Calculate the total number of tender evaluation points for quality using the following formula:

$$N_Q = W_2 \times S_O / M_S$$

where: S_O is the score for quality allocated to the submission under consideration;
 M_S is the maximum possible score for quality in respect of a submission; and
 W_2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

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

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- c) has the legal capacity to enter into the contract,
- d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- e) complies with the legal requirements, if any, stated in the tender data, and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents, and
- c) other revisions agreed between the employer and the successful tenderer.

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

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.

F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

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

F.3.19 Delegation of authority

The Employer may delegate any power vested in him by virtue of these Conditions of Tender to an officer or employee of the Employer.

T1.3 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement (May 2010) as published in Government Gazette No 33239, Board Notice 86 of 2010.

The Standard Conditions of Tender make several references to the tender data for details that apply specifically to this tender. The tender data shall have precedence in the interpretation of any ambiguity of inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced to the sub clause in the Standard Conditions of Tender to which it mainly applies.

Sub- clause	Data
F.1.1	The Employer is Metsimaholo Local Municipality.
F.1.2	The Project Document issued by the Employer consists of the following: THE TENDER Part T1: Tendering procedures: T1.1 Tender notice and invitation to tender T1.2 Tender Data Part T2: Returnable documents T2.1 Returnable Schedules required for Tender Evaluation T2.2 Other Documents required for Tender Evaluation T2.3 Returnable Schedules that will be incorporated into the Contract THE CONTRACT Part C1: Agreements and contract data C1.1 Form of Offer and Acceptance C1.2 Agreement in terms of Occupation Health and Safety Act C1.3 Form of Guarantee C.1.4 Contract Data Part C2: Pricing data C2.1 Pricing instructions C2.2 Bills of quantities Part C3: Scope of work Part C4: Site information Drawings

Tender data contd.

Sub-clause	Data
F.1.3	The Tender Document is available upon payment of R750.00 or can be downloaded free of charge from the e tender website.
F.1.4	Name: EAS Consulting Engineers Address: 73 Heugh Road, Walmer, Port Elizabeth 6000 Contact person: Anton Westerberg Tel: +27 41 5812 421 Cell: +27 82 5757 353 E-mail: antonw@easpe.co.za
	Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to 6 CE 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 an 7CE class of construction work, are eligible to have their tenders evaluated.
	a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to 6 CE 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 an 7CE class of construction work, are eligible to have their tenders evaluated. - every member of the joint venture is registered with the CIDB; - 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 an 7CE class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.

Tender data contd.

Sub-clause	Data
F.1.4	b) The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated: 1. contractors who have 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) of 25(7A) of the Construction Industry Development Regulations, for an 6 CE class of construction work; and • the employer is satisfied that such a contractor has the potential to develop and qualify to be registered in that higher grade as determined in accordance with the provisions of the CIDB Specification for Social and Economic Deliverables in Construction Works Contracts; and • the employer agrees to provide the financial, management or other support that is considered appropriate to enable the contractor to successfully execute that contract. c) No clarification meeting will be required.
F.2.1	Eligibility Only those tenderers who satisfy the following eligibility criteria and who provide the required evidence in their tender submissions are eligible to submit tenders and have their tenders evaluated: a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to 6 CE or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a 6CE class of construction work, are eligible to have their tenders evaluated. Joint ventures are eligible to submit tenders provided that: - every member of the joint venture is registered with the CIDB; - 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 an 6 CE class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.

Tender data contd.

Sub-clause	Data
F.2.1	b) The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated: I. contractors who have 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) of 25(7A) of the Construction Industry Development Regulations, for an 6 CE class of construction work; and • the employer is satisfied that such a contractor has the potential to develop and qualify to be registered in that higher grade as determined in accordance with the provisions of the CIDB Specification for Social and Economic Deliverables in Construction Works Contracts; and • the employer agrees to provide the financial, management or other support that is considered appropriate to enable the contractor to successfully execute that contract. c) No clarification meeting will be required.
F.2.10	a) The Valued Added Tax (VAT) rate shall be 15% or as otherwise provided for by legislation. b) 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. Payment of VAT to previously non-VAT vendors shall be processed from the month in which the Tenderers liability with the South African Revenue Services is effective.
F.2.11	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.
F.2.12	No alternative tender offers will be considered
F.2.13.1	The Tenderer may not make an offer for only part of the services as defined in the Scope of Work.

Tender data contd.

Sub-clause	Data																					
F.2.13.3	Parts of each tender offer communicated on paper shall be submitted as original, plus 0 copies. Under no circumstances whatsoever may the tender forms be retyped or redrafted.																					
F.2.13.5	The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package is: Municipal Building, 10 Fichardt Street, Sasolburg Location of tender box: As mentioned on the tender advertisement																					
F.2.15	The closing time for submission of Tender Offers is: 11:00 Hrs on 26 October 2021 Telephonic, telegraphic, telex, electronic or emailed tenders will not be accepted.																					
F.2.16	The tender offer validity period is 90 days																					
F.2.23	Returnables The following certificates/documents must be provided with the tender: <table><tr><th>NO</th><th>RETURNABLES</th><th>NOTES</th></tr><tr><td>1</td><td>Form of Offer</td><td> - Fully completed and signed in black ink pen. </td></tr><tr><td>2</td><td>A copy of a CSD summary report OR CSD number.</td><td> - CSD full report or summary report OR CSD number. - Municipality may not make any award to a person whose tax matters are not complaint with SARS, please note that tax compliance will be verified before any award. </td></tr><tr><td>3</td><td>Proof of company registration documents with the Director's details must be attached.</td><td> - The company registration documents must indicate the company and Director's details. </td></tr><tr><td>4</td><td>Fully completed MBD forms</td><td> Fully Completed and signed in hand writing and in black ink pen. </td></tr><tr><td>5</td><td>Audited Financial Statements signed by the CA/ RA/ PR Accountant & Director of the company (MBD 5 form)</td><td> - If required by law submit audited financial statements for the past 3 years or since the date of establishment if established during the past 3 years. - If not required by law to submit Audited Financial Statement, complete a Public Interest Score form (page no 45) and a proof of PI Score calculations. </td></tr><tr><td>6</td><td>Joint Venture Agreement</td><td> - If applicable submit a complete and signed JV agreement. - JV agreement stating who the lead partner is with the shared percentages. - Note: JV agreement must be as per CIDB regulation of 2008 regulation 25 (5)(a),(b) and (6) </td></tr></table>	NO	RETURNABLES	NOTES	1	Form of Offer	Fully completed and signed in black ink pen.	2	A copy of a CSD summary report OR CSD number.	- CSD full report or summary report OR CSD number. - Municipality may not make any award to a person whose tax matters are not complaint with SARS, please note that tax compliance will be verified before any award.	3	Proof of company registration documents with the Director's details must be attached.	The company registration documents must indicate the company and Director's details.	4	Fully completed MBD forms	Fully Completed and signed in hand writing and in black ink pen.	5	Audited Financial Statements signed by the CA/ RA/ PR Accountant & Director of the company (MBD 5 form)	- If required by law submit audited financial statements for the past 3 years or since the date of establishment if established during the past 3 years. - If not required by law to submit Audited Financial Statement, complete a Public Interest Score form (page no 45) and a proof of PI Score calculations.	6	Joint Venture Agreement	- If applicable submit a complete and signed JV agreement. - JV agreement stating who the lead partner is with the shared percentages. - Note: JV agreement must be as per CIDB regulation of 2008 regulation 25 (5)(a),(b) and (6)
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	7	Latest Municipal rates and taxes account for the COMPANY AND DIRECTORS/TRUSTEE S/MEMBERS/SHAREHOLDERS.	- End of September 2021 municipal rates & taxes statement must be attached - The submitted account must not be in arrears for more than 3 months. - In a case of Rates & Taxes Account being in a family member's name, ONLY MUNICIPAL Account where the address of the Account matches the address on the company registration documents will be accepted) if not in arrears for more than 3 months.
	8	In the event of a tenant renting a lease agreement MUST be attached for the COMPANY AND DIRECTORS/TRUSTEE S/MEMBERS/SHAREHOLDERS.	The lease agreement must include the following: - A valid copy of the lease agreement must be signed by (both Lessor and lessee). - The lease agreement must indicate dates of commencement and expiry or duration. NOTE: The lease agreement for the company must indicate that the premises are for business purpose. - In a case where the lease agreement has expired and there is a clause indicating an automatic renewal, the original lease agreement and a confirmation letter signed by Lessor must be attached. - In the occasion where the lease agreement has expired the original lease agreement AND extension must be attached with commencement and expiry dates or duration.
	Note: If the company registration document's physical address on lease agreement or the municipal rates and taxes statement is the same as the Director's physical address we will accept for both Company & Director.		
	9	Municipal rates and taxes for bidders who are from the rural areas for the COMPANY AND DIRECTORS/TRUSTEES/MEMBERS/SHAREHOLDERS.	In the event that the bidder is from the rural area a letter from the municipality that the area is not liable to pay municipal rates and taxes OR a signed letter from the chief indicating that the bidder is from that particular rural/tribal area.
	10	BBBE Certificate or Affidavit	Valid Certified copy of SANAS only accredited BBEE certificate OR valid copy of BBEE Sworn Affidavit must be attached. (Failure to submit Valid Certificate / Sworn Affidavit will result in your bid not being allocated Points for BBEE).

	11	CIDB Grading	• Copy of Company CIDB Grading designation 6CE or Higher
	12	Fully Completed Bill of Quantities	• Bill of Quantities completed in handwriting and black ink
	NB! The following documents will not be accepted: • Affidavits; Address confirmation letter; invoices from the body corporates or agents, rates and taxes of the lessor (without a lease agreement) and municipal tender / rates clearance letter.		
	<u>Failure to comply with the above mentioned terms and conditions will deem your bid to be disqualified.</u> <u>Bidders must keep a copy of a completed excel spreadsheet BOQ which may be required during the evaluation processes</u>		
	Functionality Returnable • Completion certificates of similar projects • Plant Schedule and registrations • Key Staff / Personnel CV • Financial Stability • Company Quality Management System		
F.3.4	Opening of Tender Submissions		
F.3.4.2	Tenders will be opened in public soon after closing time and recording of received documents but not later than 11:00 at the Tender office. Tenderers’ names and total prices where practical will be read out		
F.3.5	A two-envelope procedure will not be followed		
F.3.8.2	The Employer shall reject a non-responsive tender offer and not allow it to be subsequently made responsive by correction or withdrawal of non-conforming deviation or reservation.		
F.3.11	Tenders will be evaluated for Functionality. Tenderers who qualify for Functionality will be evaluated further for Price and Preference only. Points for Functionality will not contribute to further evaluation. Tenderers who do not qualify will not be evaluated further. Functionality will be scored out of 100 points. A Tenderer who scores less than 75 points will automatically be disqualified. The 80/20 evaluation criteria will be used where Price will be allocated 80 points and Preference will be scored out of 20 points.		

F.3.11.1	The procedure for evaluation of responsive Tender Offers will be Method 4: Financial Offer, Functionality and Preferences. The responsive tender with the highest total points as defined below is the preferred tender																					
F.3.11.2	The financial offer will be scored in terms of Formula 2, Option 1 of Table F.1 of SANS 294:2004, which reads as follows: Nfo = W1 x A Where: Nfo = number of tender evaluation points awarded for the financial offer; W180 points for rand value less than R50 000 000;																					
F.3.11.3	(a) Functionality will include the following: <table><tr><td>Functionality</td><td>100 Points</td></tr><tr><td>A. PROJECT EXPERIENCE AND PERFORMANCE</td><td>40</td></tr><tr><td>B. CONSTRUCTION PLANT</td><td>25</td></tr><tr><td>C. COMPANY KEY PERSONNEL</td><td>10</td></tr><tr><td>D. FINANCIAL STABILITY</td><td>20</td></tr><tr><td>E. QUALITY MANAGEMENT SYSTEM</td><td>05</td></tr><tr><td>Total</td><td>100</td></tr><tr><td>Threshold</td><td>75</td></tr><tr><td></td><td></td></tr></table>				Functionality	100 Points	A. PROJECT EXPERIENCE AND PERFORMANCE	40	B. CONSTRUCTION PLANT	25	C. COMPANY KEY PERSONNEL	10	D. FINANCIAL STABILITY	20	E. QUALITY MANAGEMENT SYSTEM	05	Total	100	Threshold	75		
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Client signed Completion & Appointment letter of projects. (Roads construction projects)	Within the past 10 years Value > R 6 000 000 per project	10 points per project	40																			
Appointment & Completion letter/ certificate that does not indicate project type & project value must be accompanied by a client signed letter confirming	Signed Appointment & Completion certificate/ letter as a main contractor. A minimum of one project must be from a State/Government/ SOE/ client confirming project completion. Non-submission of a state	The client signed appointment letter & completion letter/ certificate must be attached or zero points will be issued.																				

	value and type of work completed.	project will render the rest of the projects with zero points.		
	B. CONSTRUCTION PLANT		MAX. 25 POINTS	
	TLB X 2	Company/Director Vehicle Registration Certificates/ Letter from Rental Company/ Plant confirmation letter	5 points per TLB if owned 3 points per TLB if rented	Max 10 Points
	Excavator	Company/Director Vehicle Registration Certificates/ Letter from Rental Company/ Plant confirmation letter	10 points	Max 10 points
	Roller Compactor	Company/Director Vehicle Registration Certificates/ Letter from Rental Company/ Plant confirmation letter	5 points	Max 5 points
	C. COMPANY KEY PERSONNEL	COMPLETE COMPANY PERSONNEL SHEET ON PAGE 69, 70 & 71		MAX. 10 POINTS
	Site Agent	Personnel 1- is required to attach a minimum National Diploma qualification or higher in the Built environment and have 5-10 projects construction experience.	10 Projects - 5 Points 5 – 9 Projects - 3 Points	Max 5 points
	Foreman	Personnel 2- is require to have 3-7 projects construction experience in Roads construction projects.	7 Projects - 3 Points 3 – 6 Projects - 1 Point	Max 3 points
	Safety Officer	Safety officer on permanent/contract basis, with First Aid plus OHS (Construction Regulations) qualification or related qualification with experience in construction projects of not less than two (2) projects.	2 Projects - 2 Points	Max 2 points

	D. FINANCIAL STABILITY			MAX 20 POINTS
		If you are not required by law to submit Audited Financial Statement please attach an affidavit from the accounting / finance person confirming validity of the Financial Statement.	Submit your latest below two ratios: Current Ratio 1 or greater = 12 Points Debt Ratio 0.4 or greater = 8 Points	Max 20 Points
	E. QUALITY MANAGEMENT SYSTEM			MAX 05 POINTS
	QMS Methodology	Attach Company Quality Management system approved by QMS Officer/ company representative.	05 points	Max 05 Points
	MINIMUM SCORE		75	
	TOTAL		100	

In order to qualify for the second round of evaluation the tenders must score a minimum of 75 functionality points.

The recommended bidders company personnel and completed projects will be verified before appointments can be finalised. Fake/Fraudulent attachments will result in disqualification of the bidder.

NB: THE MUNICIPALITY RESERVES THE RIGHT TO VERIFY THE SUBMITTED FUNCTIONALITY DOCUMENTS

Tender data contd.

Sub- clause	Data
F.3.13	Acceptance of Tender Offer
F.3.13.1	Tender offers will only be accepted if: a) the tenderer is registered on the Central Supplier Database (CSD) for the South African government (see https://secure.csd.gov.za/) b) the tenderer is in good standing with SARS according to the Central Supplier Database; c) the tenderer submits a letter of intent from an approved insurer undertaking to provide the Performance Bond to the format included in Part C1.3 of this procurement document d) the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation; e) the tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; f) the tenderer has not: i. abused the Employer's Supply Chain Management System; or ii. failed to perform on any previous contract and has been given a written notice to this effect; g) the tenderer has completed the Compulsory Declaration and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process; h) the tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer; i) the employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely.
F.3.17	The number of paper copies of signed contract to be provided by the Engineer is one (1).



METSIMAHOLO LOCAL MUNICIPALITY

BID NO: MLM 11/2021/22

**CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO
TOWNSHIP WARD 5**

PART T2 : RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

The Tender Document must be submitted as a whole. All forms must be properly completed as required, and the document shall not be taken apart or altered in any way whatsoever.

All the certificates and forms to be provided with the tender are listed in the Tender Data under F2.23: Certificates, and under the returnable schedules and forms in T2.2 hereafter.

The list of returnable documents comprises the following:

1. All the certificates listed in the Tender Data under F2.23: Certificates;
2. All the returnable schedules and forms listed in T2.2.1: Returnable Schedules Required for Tender Evaluation Purposes;
3. All the returnable documents listed in T2.2.2: Preferential Procurement Schedules and Affidavits that will be incorporated into the Contract;
4. All the agreements and forms listed in T2.2.3: Forms to be completed by Successful Tenderer;
5. All the forms and agreements in the Contract Data in C1.2, where some of the forms (agreements) need to be completed only by successful Tenderer;
6. Pricing Data in C2.2: Bill of Quantities.

T2.2 RETURNABLE SCHEDULES

NOTE: The Tenderer is required to complete each and every schedule and form listed above to the best of his ability, as the evaluation of tenders and the eventual contract will be based on the information provided by the Tenderer. Failure of a Tenderer to complete the schedules and forms to the satisfaction of the Employer will inevitably prejudice the tender and may lead to rejection on the grounds that the tender is not responsive.



TENDER NO: MLM 11/2021/22

SCHEDULE A: MUNICIPAL BIDDING DOCUMENTS

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PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE METSIMAHOLO LOCAL MUNICIPALITY					
BID NUMBER:	MLM 11/2021/22	CLOSING DATE:	26 OCTOBER 2021	CLOSING TIME:	11H00
DESCRIPTION	CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WAR 5				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT (MBD7).					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN BOX SITUATED AT (<i>STREET ADDRESS</i>)					
Metsimaholo Local Municipality					
No 10 Fichardt Street					
Finance Building					
Ground Floor					
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 ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		☐ Yes ☐ No

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]			
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS OFFERED		N/A	N/A
SIGNATURE OF BIDDER		DATE	
CAPACITY UNDER WHICH THIS BID IS SIGNED			
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT		CONTACT PERSON	MR S BILA
CONTACT PERSON		TELEPHONE NUMBER	016 973 8487
TELEPHONE NUMBER		FACSIMILE NUMBER	
FACSIMILE NUMBER		E-MAIL ADDRESS	
E-MAIL ADDRESS			

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, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
2. TAX COMPLIANCE REQUIREMENTS
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS. 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE 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:

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

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

- 3.1 Full Name of bidder or his or her representative:
- 3.2 Identity Number:
- 3.3 Position occupied in the Company (director, trustee, hareholder²):
- 3.4 Company Registration Number:
- 3.5 Tax Reference Number:
- 3.6 VAT Registration Number:
- 3.7 The names of all directors / trustees / shareholders / members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.
- 3.8 Are you presently in the service of the state? YES / NO
- 3.8.1 If yes, furnish particulars.
.....

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

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

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.

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

3.9.1 If yes, furnish particulars.....

.....

3.10 Do you have any relationship (family, friend, other) with persons?

in the service of the state and who may be involved with

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

3.10.1 If yes, furnish particulars.

.....

3.11 Are you, aware of any relationship (family, friend, other) between any other 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

3.11.1 If yes, furnish particulars

.....

.....

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

3.12.1 If yes, furnish particulars.

.....

.....

3.13 Are any spouse, child or parent of the company's directors, trustees, managers,
principle shareholders or stakeholders in service of the state?

YES / NO

3.13.1 If yes, furnish particulars.

.....

.....

3.14 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

3.14.1 If yes, furnish particulars:

.....

Full details of directors / trustees / members / shareholders.

Full Name	Identity Number	State Number	Employee

.....
Signature

.....
Date

.....
Capacity

.....
Name of Bidder

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

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

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

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

.....
.....

2. Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

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

2.2 If yes, provide particulars.

.....
.....
.....

* Delete if not applicable

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

3.1 If yes, furnish particulars

.....
.....

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

4.1 If yes, furnish particulars

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE

FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

PI Form

To be Completed by: Bidders not required to submit Audited Financial Statement Determination of whether the Financial Statements needs to be Audited

Questioner	Yes	No
Is Company Owner-Managed		
Are the company Financial Statement Independently compiled		

Questioner	PI Score	Required Attachment
What is the bidder's latest Public Interest Score		Attach Proof of calculation

(ii) What type of engagement is required?

PIS				
	Audit	Audit	Audit	Audit
350	None	Audit	Review	Audit
100	None	None	Review	Review
0	Independently compiled	Internally compiled	Independently compiled	Internally compiled
	Owner-managed		Not owner-managed	

Audit
Review
None (no requirement - Compilation)

MBD 6.1
PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

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

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

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

- a) The value of this bid is estimated not exceed R50 000 000 (all applicable taxes included) and therefore the ...80 / 20.. preference point system shall be applicable; or
- b) Either the 80/20 or 90/10 preference point system will be applicable to this tender (*delete whichever is not applicable for this tender*).

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

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

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	100

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

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any

time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **“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;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“prices”** includes all applicable taxes less all unconditional discounts;
- (h) **“proof of B-BBEE status level of contributor”** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 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

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for price of bid under consideration

P_t = Price of bid under consideration

Pmin = Price of lowest acceptable bid

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

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

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

5. BID DECLARATION

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

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

- 6.1 B-BBEE Status Level of Contributor: . = (maximum of 10 or 20 points)

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

7. SUB-CONTRACTING

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

(Tick applicable box)

YES		NO	
-----	--	----	--

- 7.1.1 If yes, indicate:

- What percentage of the contract will be subcontracted.....%?
- The name of the sub-contractor.....
- The B-BBEE status level of the sub-contractor.....
- Whether the sub-contractor is an EME or QSE

(Tick applicable box)

YES		NO	
-----	--	----	--

- v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black ☐ people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:

8.2 VAT registration number:

8.3 Company registration number:

8.4 TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

8.6 COMPANY CLASSIFICATION

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

[TICK APPLICABLE BOX]

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

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 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
 - (e) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....

SIGNATURE(S) OF BIDDERS(S)

DATE

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied). The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐

4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		

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

CERTIFICATION

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

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

.....

Signature

.....

Date

.....

Position

.....

Name of Bidder

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ 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. takes 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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf

Of: _____ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

MBD 9

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 consortium³ 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.
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.

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.**

.....
Signature

.....
Date

.....

Position

.....

Name of Bidder

SCHEDULE B: RECORD OF ADDENDA TO TENDER DOCUMENTS

I / We confirm that the following communication/s, amending the tender documents, received from the Employer or his representative before the closing date for submission of this tender offer, have been taken into account in this tender offer.

ADD. No	DATE	TITLE OR DETAILS
1		
2		
3		
4		
5		
6		
7		
8		

SIGNATURE:

SCHEDULE C: CERTIFICATE OF AUTHORITY

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

(I) COMPANY	(II) CLOSE CORPORATION	(III) PARTNERSHIP	(IV) JOINT VENTURE	(V) SOLE PROPRIETOR

(i) CERTIFICATE FOR COMPANY

I,, Managing Director 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 tender and any contract resulting from it, on behalf of the company.

Managing Director:

(ii) CERTIFICATE FOR CLOSE CORPORATION

We, the undersigned, being the key members in the business trading as

.....
hereby authorise Mr/Ms, acting in the capacity of, to sign all documents in connection with this tender 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 members upon whom rests the direction of the affairs of the Close Corporation as a whole.*

(iii) CERTIFICATE FOR 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 this
tender 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 whom rests the direction of the affairs of the Partnership as a whole.*

(iv) CERTIFICATE FOR JOINT VENTURE

We, the undersigned, are submitting this tender 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 this tender offer and any 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	AUTHORIZING SIGNATURE, NAME AND CAPACITY
(Lead partner)		

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

(v) CERTIFICATE FOR SOLE PROPRIETOR

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

Signature of Sole owner:

REGISTRATION CERTIFICATE / AGREEMENT / ID DOCUMENT***Important note to Tenderer:***

Registration Certificates for Companies, Close Corporations and Partnerships, or Agreements and Powers of Attorney for Joint Ventures, or ID documents for Sole Proprietors, all as referred to in the foregoing forms and in T2.1, must form part of this submission either separately as separate bunch of supporting documents or at the end of the this bid document and must be properly referenced.

SCHEDULE D: 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. The questionnaires for the other partners must be inserted after this questionnaire.**

Section 1: Name of enterprise:

Section 2: VAT registration number:

Section 3: CIDB registration number:.....

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 of 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 stakeholder 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 | ☐ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| ☐ 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 | ☐ a member of an accounting authority of any national or provincial public entity |
| ☐ an official of any municipality or municipal 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 stakeholder in a company or close corporation is currently or has been within the last 12 months, been in the service of any of the following:

- | | |
|--|---|
| ☐ a member of any municipal council | ☐ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| ☐ 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 | ☐ a member of an accounting authority of any national or provincial public entity |
| ☐ an official of any municipality or municipal entity | ☐ an employee of Parliament or a provincial legislature |

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

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 authorized to do so on behalf of the enterprise:

- 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;
- 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;
- 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;
- 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

SCHEDULE E: PLANT AND EQUIPMENT

The following are a list of major items of relevant equipment that I / we presently own and will have available for this contract if my / our tender is accepted.

- (a) Details of major equipment that is owned by me / us and immediately available for this contract (Tenderer to provide proof of ownership of plant. Failure to do so will render the tender non-responsive and will be rejected).

DESCRIPTION (type, size, capacity etc)	QUANTITY	YEAR OF MANUFACTURE

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 accepted (Tenderer to provide proof of such arrangement. Failure to provide proof will render the tender non-responsive and will be rejected)

DESCRIPTION (type, size, capacity etc)	QUANTITY	HOW ACQUIRED	
		HIRE/ BUY	SOURCE

Attach additional pages if more space is required

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

SIGNATURE:

ATTACH THE PLANT AND EQUIPMENT LIST/S HERE.

SCHEDULE F: EXPERIENCE OF TENDERER

The following is a statement of work of similar nature recently successfully executed by myself / ourselves:

EMPLOYER: CONTACT PERSON AND TELEPHONE NUMBER	CONSULTING ENGINEER: CONTACT PERSON AND TELEPHONE NUMBER	NATURE OF WORK	VALUE OF WORK (inclusive of VAT)	DATE COMPLETED OR EXPECTED TO BE COMPLETED
EMPLOYER	CONSULTANT			
CONTACT	CONTACT			
TEL	TEL			
CELL	CELL			
FAX	FAX			
EMPLOYER	CONSULTANT			
CONTACT	CONTACT			
TEL	TEL			
CELL	CELL			
FAX	FAX			
EMPLOYER	CONSULTANT			
CONTACT	CONTACT			
TEL	TEL			
CELL	CELL			
FAX	FAX			
EMPLOYER	CONSULTANT			
CONTACT	CONTACT			
TEL	TEL			
CELL	CELL			
FAX	FAX			
EMPLOYER	CONSULTANT			
CONTACT	CONTACT			
TEL	TEL			
CELL	CELL			
FAX	FAX			

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

ATTACH A SEPARATE LIST IF THE SPACE PROVIDED IS NOT SUFFICIENT. THE LIST MAY BE ATTACHED AT THE END OF THE TENDER DOCUMENT OR IN A SEPARATE BUNCH AND PROPERLY REFERNCED.

(Ensure all telephone and fax numbers are included as in previous list)

SCHEDULE G: TENDERERS' KEY PERSONNEL

NAME	POSITION	NQF QUALIFICATION	EXPERIENCE IN YEARS

SIGNATURE:

Site Agent

NB: Attach: Copy of qualification (Failure to fully complete will lead to no point scoring for functionality)

Name & Surname	ID/Passport Number	Highest Qualification	Employer & Contact reference No.	Project	Project Duration (Year)

Foreman

NB: Attach: NON (Failure to fully complete will lead to no point scoring for functionality)

Name & Surname	ID/Passport Number	Highest Qualification	Employer & Contact reference No.	Project	Project Duration (Year)

SAFETY OFFICER

NB: Attach copy of qualification (Failure to fully complete will lead to no point scoring for functionality)

Name & Surname	ID/Passport Number	Highest Qualification	Employer & Contact reference No.	Project	Project Duration (Year)

SCHEDULE H: PRELIMINARY PROGRAMME

The Tenderer shall detail below or attach a preliminary programme reflecting the proposed sequence and tempo of execution of the various activities comprising the work for this Contract. The programme shall be in accordance with the information supplied in the Contract, requirements of the Project Specifications and with all other aspects of his Tender.

PROGRAMME

ACTIVITY	MONTHS														
	1	2	3	4	5	6	7	8							

[Note: The programme must be based on the completion time as specified in the Contract Data. No other completion time that may be indicated on this programme will be regarded as an alternative offer, unless it is listed in Table (b) of Form I hereafter and supported by a detailed statement to that effect, all as specified in the Tender Data]

SIGNATURE:

SCHEDULE I: AMENDMENTS, QUALIFICATIONS AND ALTERNATIVES

The Tenderer should record any amendments and alternatives he may wish to make to the tender documents in this schedule. Alternatively, a Tenderer may state such amendments and alternatives in a covering letter to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause F3.3 if the Standard Conditions of Tender referenced in the Tender Data regarding the Employer's handling of material deviations and qualifications.

These amendments and qualifications, if accepted by the Employer, will be incorporated in the Form of Offer and Acceptance, Schedule of Deviations.

(a) AMENDMENTS AND QUALIFICATIONS

PAGE	CLAUSE OR ITEM NO	PROPOSED AMENDMENT AND QUALIFICATIONS

- [Notes: (1) Amendments to the General and Special Conditions of Contract are not acceptable;
(2) The Tenderer must give full details of all the financial implications of the amendments and qualifications in a covering letter attached to his tender.]

(b) ALTERNATIVES

PROPOSED ALTERNATIVE	DESCRIPTION OF ALTERNATIVE

- [Notes: (1) Individual alternative items that do not justify an alternative tender, and an alternative offer for time for completion should be listed here.
(2) In the case of a major alternative to any part of the work, a separate Bill of Quantities, programme, etc, and a detailed statement setting out the salient features of the proposed alternatives must accompany the tender.
(3) Alternative tenders involving technical modifications to the design of the works and methods of construction shall be treated separately from the main tender offer.]

SIGNATURE:



TENDER NO: MLM 11/2021/22

ATTACH ALTERNATIVES HERE

SCHEDULE J: CONTRACTOR'S HEALTH AND SAFETY PLAN AND DECLARATION

In terms of Clause 4(4) of the OHS Act 1993 Construction Regulations 2003 (referred to as "the Regulations" hereafter), a Contractor may only be appointed to perform construction work if the Employer is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act No 85 of 1993 and the OHS Act 1993 Construction Regulations 2003.

To that effect a person duly authorized by the Tenderer must complete and sign the declaration hereafter in detail.

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the OHS Act 1993 Construction Regulations 2003.
2. I hereby declare that my company has the competence and the necessary resources to safely carry out the construction work under this contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.
3. I hereby undertake, if my tender is accepted, to provide, before commencement of the works under the contract, a suitable and sufficiently documented Health and Safety Plan in accordance with Regulation 5(1) of the Construction Regulations, which plan shall be subject to approval by the Employer.
4. I confirm that copies of my company's approved Health and Safety Plan, the Employer's Safety Specifications as well as the OHS Act 1993 Construction Regulations 2003 will be provided on site and will at all times be available for inspection by the Contractor's personnel, the Employer's personnel, the Engineer, visitors, and officials and inspectors of the Department of Labour.
5. I hereby confirm that adequate provision has been made in my tendered rates and prices in the Bill of Quantities to cover the cost of all resources, actions, training and all health and safety measures envisaged in the OHS Act 1993 Construction Regulations 2003, including the cost for specific items that may be scheduled in the Bill of Quantities.
6. I hereby confirm that I will be liable for any penalties that may be applied by the Employer in terms of the said Regulations for failure on my part to comply with the provisions of the Act and the Regulations as set out in Regulation 30 of the Regulations.
7. I agree that my failure to complete and execute this declaration to the satisfaction of the Employer will mean that I am unable to comply with the requirements of the OHS Act 1993 Construction Regulations 2003, and accept that my tender will be prejudiced and may be rejected at the discretion of the Employer.
8. I am aware of the fact that, should I be awarded the contract, I must submit the notification required in terms of Regulation 3 of the OHS Act 1993 Construction Regulations 2003 before I will be allowed to proceed with any work under the contract.

SIGNATURE:

CONTRACTOR'S SAFETY PLAN

The Tenderer shall attach to this page (or submit it separately) the Contractor's Health and Safety Plan as required in terms of Regulation 5 of the Occupational Health and Safety Act 1993 Construction Regulations 2003, and referred to in Form K.

The Contractor's Health and Safety Plan shall cover at least the following aspects as applicable:

1. Safety of subcontractors (Refer Construction Regulations 2003 Clause 5: Principal Contractors and Contractors)
 - Methods to ensure the approval, implementation and maintenance of all health and safety aspects regarding his subcontractors.
2. Monitoring the health and safety on the construction site on a regular basis (Refer Clause 6: Supervision of Construction Work)
 - Details of the Construction Supervisor and his appointed assistants (if any);
 - Details of the Construction Safety Officer, full-time or part-time;
 - Details of the suitability and competency of the Construction Supervisor and Construction Safety Officer regarding health and safety aspects of the construction works.
3. Assessment of risks on the construction site (Refer Clause 7: Risk Assessment)
 - Details of a proper risk assessment on which his health and safety plan is based;
 - Ways, in which all construction employees are informed, instructed and trained regarding the work procedures and the related hazards.
4. Risk items (Refer Clauses 8 to 28: Risk items to be addressed)
 - Details of the design, management, responsibilities, worker training, work methods, procedures, maintenance and any other requirements necessary for him and his subcontractor, if applicable, to work safely and in a healthy environment as stipulated in these clauses.

Contractor's OHS Management System checklist

1. OHS Policy and Management

		Yes	No
1.1	Is there a written company health and safety policy?		
1.2	Does the company have an OHS Management System?		
1.3	Is there a company OHS Management Manual or Plan?		
1.4	Are health and safety responsibilities clearly identified for all levels of staff?		

2. Safe Work Practices and Procedures

		Yes	No
2.1	Has the company prepared safe operating procedures or specific safety instructions relevant to its operations?		
2.2	Does the company have any permit to work systems?		
2.3	Is there a documented incident investigation procedure?		
2.4	Are there procedures for maintaining, inspecting and assessing the hazards of plant operated/owned by the company?		
2.5	Are there procedures for storing and handling hazardous substances?		
2.6	Are there procedures for identifying, assessing and controlling risks associated with manual handling?		

3. OHS Training

		Yes	No
3.1	Is health and safety training conducted in the company?		
3.2	Is a record maintained of all training and induction programs undertaken for employees in the company?		

4. Health and Safety Workplace Inspection

		Yes	No
4.1	Are regular health and safety inspections at worksites undertaken?		
4.2	Are standard workplace inspection checklists used to conduct health and safety inspections?		
4.3	Is there a procedure by which employees can report hazards at workplaces?		

5. Health and Safety Consultation

		Yes	No
5.1	Is there a workplace health and safety committee?		
5.2	Are employees involved in decision making over OHS matters?		
5.3	Are there employee elected health and safety representatives?		

6. OHS Performance Monitoring

		Yes	No
6.1	Is there a system for recording and analysing health and safety performance statistics?		
6.2	Are employees regularly provided with information on company health and safety performance?		
6.3	Has the company ever been convicted of an occupational health and safety offence?		

7. Does your company's health and safety plan contain the following elements?

		Yes	No
7.1	Description of the contract		
7.2	OHS Structure of work undertaken under this contract		
7.3	Induction and safety training		
7.4	Safe work practices and procedures for specific work undertaken		
7.5	Risk assessments for specific works undertaken		
7.6	Workplace inspection schedule for duration of contract		
7.7	OHS consultative processes to be followed		
7.8	Emergency procedure for this specific contract		
7.9	Incident recording and investigation on procedures		
7.10	Health and safety performance monitoring arrangements to be implemented during contract		

SCHEDULE K: CONTRACTOR'S CERTIFICATE OF REGISTRATION WITH CIDB

[The Tenderer shall attach hereto the Contractor's Certificate of Registration with CIDB. Failure to submit the certificate with the tender document will lead to the conclusion that the Tenderer is not registered with the CIDB and therefore not eligible to tender].



METSIMAHOLO LOCAL MUNICIPALITY

BID NO MLM 11/2021/22

**CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO
TOWNSHIP WARD 5**

THE CONTRACT

- PART C1 : AGREEMENTS AND CONTRACT DATA**
- PART C2 : PRICING DATA**
- PART C3 : SCOPE OF WORK**
- PART C4 : SITE INFORMATION**

PART C1: AGREEMENTS AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

BID NUMBER MLM 11/2021/22: CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5

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

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

The offered total of the prices inclusive of Value Added Tax is:

R

(In words)

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the 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:(of person authorized to sign the tender):

Name: (of signatory in capitals):

Capacity: (of Signatory):.....

Name of Tenderer:
(organisation):.....

Address:
.....
.....
.....

Telephone number: Fax number:

Cell phone number:

Witness:

Signature:

Name: (in capitals):

Date:

ACCEPTANCE

By signing this part of the 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 as set out in the General and Special Conditions of Contract, and 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 1 Agreement and Contract Data, (which includes this Agreement)

Part 2 Pricing Data, including the Bill of Quantities

Part 3 Scope of Work

Part 4 Site Information

and the schedules, forms, 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 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 duly signed by the authorized representatives of both parties.

The Tenderer shall deliver the Guarantee in terms of Clause 7 of the General Conditions of Contract 2004 within the period stated in the Contract Data, and he shall, immediately 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 other bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data, within 14 days of the date on which 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 the fully completed original of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature:

Name:

Capacity: Municipal Manager

For: METSIMAHOLO LOCAL MUNICIPALITY
10 FICHARDT STREET, SASOLBURG, 4800

Witness:Name:

Date:

SCHEDULE OF DEVIATIONS

The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Tender Data and the Conditions of Tender.

A Tenderer's covering letter will not necessarily be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid becomes the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.

Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.

Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1. Subject:

Details:

2. Subject:

Details:

3. Subject:

Details:

4. Subject:

Details:

5. Subject:

Details:

6. Subject:

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 change 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 TENDERER:**Signature:****Name:****Capacity:****Witness:..****Name:****Date:****FOR THE EMPLOYER:****Signature:****Name:****Capacity:****Witness:..****Name:****Date:**

C1.2 CONTRACT DATA

C1.2.1 CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works –2nd Edition 2010, Third print", issued by the South African Institution of Civil Engineering. (Short title: "General Conditions of Contract 2010").

It is agreed that the only variations from the General Conditions of Contract 2010 are those set out hereafter under "Contract Specific Conditions".

CONTRACT SPECIFIC CONDITIONS

1. GENERAL

These Contract Specific Conditions (CSC) form an integral part of the Contract. The Contract Specific Conditions shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2010 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "CSC" followed in each case by the number of the applicable clause or sub-clause in the General Conditions of Contract 2010, 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. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

CSC 1.1.25 DEFINITIONS, INTERPRETATIONS AND GENERAL PROVISIONS

Add the following definitions:

"Labour-based Construction" means the effective employment of appropriate technologies and labour-intensive construction methods on projects specifically designed to maximize the workforce with limited use of machines.

"Community" shall mean all persons deemed to reside in the immediate vicinity of the project.

CSC1.10 Add the following Sub-Clause 1.10:

Training will be provided by the employer through various training providers. Training will be theoretical and practical and will be conducted in class rooms and on site. No separate payment of any nature will be made to the contractor for attendance of training sessions by the contractor or the contractor's staff. The Construction Project Manager will program and manage all training to ensure limited disruption to the contractors and the overall project.

CSC 2.3 Specific Approval of the Employer required

The Engineer has to obtain specific approval or consent from the Employer for the decisions in the following clauses:

Clauses 6.2, 6.6, 3.2.1, 3.2.4, 4.7, 8.2.2.2, 6.3.2, 6.4.1.4, 5.8.1, 5.11.1, 5.11.3, 6.6.1, 2.2.3, 6.10, 6.11, 5.14.1, 5.16.1, 7.8.2.2, 5.7.3 and 7.8.2.

CSC 4.5 Compliance with applicable laws

CSC 4.5.2 Health and Safety

Add the following:

"The Occupational Health and Safety Act No. 85 and Amendment Act No 181 of 1993 and the Construction Regulations 2003 will in all respects be applicable to this contract."

CSC 6.6.2 Payment to subcontractor

Add the following:

"The above-mentioned procedure shall adhere to the **Preferential procurement regulations, 2011, pertaining to the Preferential Procurement Policy Framework Act, Act No. 5 of 2000, published by National Treasury on 1 December 2011** and to any prescribed regulations of the FREESTATE Provincial Government pertaining to procurement.

CSC 40 PROGRESS OF THE WORKS

Add the following to Sub-Clause 40.1 :

Delete the last sentence and add the following:

The contractor shall within 3 days of receipt of notification submit to the Engineer in writing the action(s) the contractor intends to take to expedite the rate of progress, and within 7 days of receipt of notification implement such steps. The contractor shall as part of his actions submit to the Engineer a detailed revised program accommodating the agreed steps to meet the Due Completion date.

CSC 49.6 GUARANTEE IN LIEU OF RETENTION

Add to all references to a "Bank" also "*or an accredited Insurance Company*"

Add the following sub-clause

CSC 46: CONTRACT PRICE ADJUSTMENT SCHEDULE

Paragraph 1

Adjust the definitions of "L", "P", "M" and "F" in the 4th to the 7th subparagraphs with the following:

Definition of "L":

Insert "(Consumer Price Index)" after "P0141.1" in the third line

Insert "(Consumer Price Index and Percentage Change according to Urban Area)" after "Table 21" in the third line

Definition of "P":

Insert "(Production Price Index)" after "P0142.1" in the second line

Insert "(Production Price Index for Selected Materials, item 'Civil Engineering Plant')" after "Table 16" in the second line

Definition of "M":

Insert "(Production Price Index)" after "P0142.1" in the second line

Insert "(Production Price Index for Materials used in Certain Industries, item 'Civil Engineering Plant')" after "Table 15" in the second line

Definition of "F": *Insert "(Production Price Index)" after "P0142.1" in the second line*

Insert "(Production Price Index for Selected Materials, item Diesel Oil – Coast and Witwatersrand)" after "Table 16" in the second line

[Note: The indices are obtainable in www.statssa.gov.za. The latest indices for L (certain urban areas only), P, M and F, are more readily obtainable in www.safcec.org.za under "CPAF Indices"]

Paragraph 2 : Assessment of Amount subject to Adjustment: *Add the following to the paragraph defining "E":*

"Where the amount is based on current costs de-escalated to the base month, or where daywork is calculated at rates tendered in a daywork schedule, the costs shall not be included in the value of "E".

C1.2.2 CONTRACT SPECIFIC DATA

General

This section contains the Contract Specifications Data referred to under Clause 1(1) of the General Conditions of Contract. Electrical and Mechanical Engineering Work (1985)

Should any requirements of the Specific Data conflict with the requirements of the General Conditions of Contract, then the requirements of the Specific Data shall prevail.

Clause

1 Definitions and interpretation

The “**Employer**” as defined under Clause 1(1) of the General Conditions shall be the METSIMAHOLO LOCAL MUNICIPALITY

MUNICIPAL BUILDING
10 FICHARDT
SASOLBURG
4800

The “**Engineer**” as defined under Clause 1(1)(d) of the General Conditions shall be EAS ENGINEERS.

73 HEUGH ROAD
WALMER
PORT ELIZABETH
6000

Tel: + 27 41 5812 421
+ 27 82 5757 353

4.1 Language

English

4.2 Law

The governing law shall be that of the Republic of South Africa.

7.1 Time for Completion

...8..... * (months). To be completed by Tenderer*.

9.1 Performance Board or Surety

10 % of Contract amount.

12.1 Programme

The limit for submission of programme – one week.

14.3 Electricity, water and gas

Contractor to arrange and pay for.

16.4 Limitation of liability

Contractor's liability shall not exceed 100 % of the Contract Sum.

The contractor's liability shall expire on the date of issue of the Final Certificate.

17.1 Insurance of Works

Amount of insurance during Defects Liability Period: 100 % of the Contract Sum.

17.2 Minimum Amount of Third Party Insurance

R1 000 000 for any single claim, number of claims unlimited.

20.6 Import permits and licenses

The Contractor shall obtain and provide all necessary import permits and licenses required.

31.1 Amount of Reduction for delay

R5 000,00 per Calendar Day of delay.

Maximum Reduction

15 % of Contract Price.

32.1 Bonus

No bonus will apply.

33.1 Defects liability period

12 Months with use of works assumed 24 hours per day.

33.4 Maximum permitted extension: 12 months

34.1 Variations

The total variation shall not be more than 35 % of the Contract Sum for any single Contract.

37.3 Certificates and Payment

Payment certificates shall be paid within 28 days of submission of the approved invoice by the engineer to the PMU. 10 % Retention retained up to Completion Certificate.

Builders lien is not applicable in this contract.

40. Payment Conditions

For Mechanical and Electrical Work ninety-five percent (95 %) of the quoted price will be payable on completion of delivery, installation and commissioning. A further 5 % will be payable at the end of the defect liability period. For Civil and Structural Work payment up to the Completion Certificate will be @ 90 % of tendered rates with 10 % retention held back, 5 % retention paid on issue of Completion Certificate and 5 % after the Defects Liability period.

41.4 Payment in foreign currencies

No payment will be made in foreign currencies.

52.1 Changes in Cost and Legislation
(Labour, Materials and Transport)

Prices to be fixed if award is made within 90 days of closing of date of tender.

53.1 Customs and import duties

All customs and import duties shall be paid for by the Contractor.

.....
SIGNATURE

C1.2.3 DATA PROVIDED BY THE TENDERER

Clause 6.8.3 of the GCC 2010:

Special materials	Unit on which variation will be determined *	Rate or price for the base Month (Excl. VAT) **
Not applicable		

Notes:

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

** The price for special materials is only the price for the material and does not include the cost of transport, labour or any other costs. When called upon to do so, the Tenderer shall substantiate the above prices with acceptable documentary evidence.

.....
SIGNATURE

C1.3 FORM OF GUARANTEE

BID NO MLM 11/2020/21

WHEREAS **METSIMAHOLO LOCAL MUNICIPALITY** (hereinafter referred to as the Employer”) entered into, a Contract with:

.....
(hereinafter called “the Contactor”) on the day of20.....,
for **RCONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5.**

AND WHEREAS it is provided by such Contract that the Contractor shall provide the Employer with security by way of a guarantee for the due and faithful fulfilment of such Contract by the Contractor;

AND WHEREAS has / have at the request of the Contractor, agreed to give such guarantee;

NOW THEREFORE WE do hereby guarantee and bind ourselves jointly and severally as Guarantor and Co-Principal Debtors to the Employer under renunciation of the benefits of division and excussion for the due and faithful performance by the Contractor of all the terms and conditions of the said Contract, subject to the following conditions:

1. The Employer shall, without reference and / or notice to us, have complete liberty of action to act in any manner authorized and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the completion date of the works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alterations of the completion date which the Employer may make, give, concede or agree to under the said Contract.
2. This guarantee shall be limited to the payment of a sum of money.
3. The Employer shall be entitled, without reference to us, to release any guarantee held by it, and to give time to or compound or make any other arrangement with the Contractor.
4. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.
5. Our total liability hereunder shall not exceed the Guaranteed Sum of
..... Rand (in words); R
..... (in figures)
6. The Guarantor reserves the right to withdraw from this guarantee by depositing the Guaranteed Sum with the beneficiary, whereupon our liability hereunder shall cease.
7. We hereby choose our address for the serving of all notices for all purposes arising here from as

.....
.....
.....
.....



IN WITNESS WHEREOF this guarantee has been executed by us at
on this day of 20

Signature

Duly authorized to sign on behalf of

Address
.....
.....

As witnesses:

1

2

C1.4 ADJUDICATOR'S AGREEMENT (Pro Forma only)

To be entered into when required

This agreement is made on the day of between:

. (name of company / organisation)

of

. (address) and

. (name of company / organization)

of

. (address)

(the Parties) and

. (name)

of

. (address)

(the Adjudicator).

Disputes or differences may arise/have arisen* between the Parties under a Contract dated

. and known as

and these disputes or differences shall be/have been* referred to adjudication in accordance with GCC 2004, Clause 58.3, and the Adjudicator may be / has been* requested to act.

* Delete as necessary

IT IS NOW AGREED as follows:

1. The adjudication shall be conducted in accordance with the rights and obligations of the Adjudicator and the Parties as set out in the Procedure as per Clause 58.3.1 of the GCC 04.
2. The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the Procedure.
3. The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses in accordance with the Procedure.
4. The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.
5. The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.
6. The Adjudicator shall be paid at the hourly rate of R. in respect of all time spent upon, or in connection with, the adjudication including time spent travelling.
7. The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to:
 - (a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs.
 - (b) Telegrams, telex, faxes, and telephone calls.
 - (c) Postage and similar delivery charges.
 - (d) Travelling, hotel expenses and other similar disbursements.
 - (e) Room charges.
 - (f) Charges for legal or technical advice obtained in accordance with the Procedure.

8. The Adjudicator shall be paid an appointment fee of R This fee shall become payable in equal amounts by each Party within 14 days of the appointment of the Adjudicator, subject to an Invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 6 and/or item 7. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.
9. The Adjudicator is/is not* currently registered for VAT.
10. Where the Adjudicator is registered for VAT it shall be charged additionally in accordance with the rates current at the date of invoice.
11. All payments, other than the appointment fee (item 8) shall become due 7 days after receipt of invoice, thereafter interest shall be payable at 5% per annum above the Reserve Bank base rate for every day the amount remains outstanding.

SIGNED

by: _____

Name:

who warrants that he / she is
duly authorized to sign for and
on behalf of the first Party in the
presence of

Witness

Name: _____

Address: _____

Date: _____

SIGNED

by: _____

Name:

who warrants that he / she is
duly authorized to sign for and
on behalf of the second Party in
the presence of

Witness:

Name _____

Address: _____

Date: _____

SIGNED

by: _____

Name:

the Adjudicator in the presence
of

Witness:

Name: _____

Address: _____

Date: _____

* Delete as necessary



METSIMAHOLO LOCAL MUNICIPALITY

BID NO. MLM 11/2021/22

**CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO
TOWNSHIP WARD 5**

PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS – CIVIL AND STRUCTURAL WORK

1. Measurement and payment shall be in accordance to SANS 1200.
2. The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

%	=	percent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kiloliter
km	=	kilometer
km-pass	=	kilometer-pass
kPa	=	kilopascal
kW	=	kilowatt
ℓ	=	liter
m	=	meter
mm	=	millimeter
m ²	=	square meter
m ² -pass	=	square meter-pass
m ³	=	cubic meter
m ³ .km	=	cubic meter-kilometer
MN	=	mega newton
MN.m	=	mega newton-meter
MPa	=	megapascal
No.	=	number
Prov sum	=	Provisional Sum
PC sum	=	Prime Cost Sum
R/only	=	rate only
Sum	=	lump sum
t	=	ton (1000 kg)
W/day	=	work day
3. For the purpose of the 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 SANS 1200
Quantity:	The number of units of work for each item.
Rate:	The agreed payment per unit of measurement.
Amount:	The product of the quantity and the agreed rate for an item.
Lump sum:	An agreed amount for an item, the extent of which is described in the Bill of Quantities but the quantity of work of which is not measured in any units.
4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
5. It will be assumed that prices included in the Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information on standards).

6. The prices and rates in the Bill of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the Works described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.
7. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amounts tendered under such items.
8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
9. The quantities set out in the Bill of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bill of Quantities.
10. The short descriptions of the items of payment given in the Bill of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
11. The item numbers appearing in the Bill of Quantities refer to the corresponding item numbers in the "SANS 1200 as prepared by South African National Roads Agency Limited" and additional Project Specifications as per the Scope of Work.
12. Those parts of the contract to be constructed using labour-intensive methods have been marked in the Bill of Quantities with the letters LI in a separate column filled in against every item so designated. The works, or parts of the Works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such Works, other than plant specifically provided for in the Scope of Work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.
13. 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 unauthorized 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.

C2.3

BILL OF QUANTITIES

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1.		<u>SECTION 1: PRELIMINARY AND GENERAL</u>				
	SANS 1200 A	<u>GENERAL</u> as specified in SANS 1200 A and in the Scope of Work				
1.1	PSA 8.3	<u>SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS :</u>				
1.1.1	PSA 8.3.1	<u>Contractual requirements</u>	Sum	1		
	PSA 8.3.2.1	<u>Facilities for Engineer :</u>				
1.1.2	PSAB 8.2.2	(a) Two Contract nameboards	Sum	1		
1.1.3	PSAB 8.2.3	(b) One furnished office	Sum	1		
1.1.4	PSA 8.3.2.2	<u>Facilities for Contractor</u>	Sum	1		
1.1.5	PSA 8.3.3	Other fixed-charge obligations	Sum	1		
1.1.6	PSA 8.3.4	Removal of site establishment	Sum	1		
1.2	PSA 8.4	<u>TIME RELATED ITEMS</u> (Refer PSA 8.1.2.1 and PSA 8.2.2)				
1.2.1	PSA 8.4.1	<u>Contractual requirements</u>	Sum	1		
	PSA 8.4.2.1	<u>Facilities for Engineer :</u>				
1.2.2	PSAB 8.2.2	(a) Two Contract nameboards	Sum	1		
1.2.3	PSAB 8.2.3	(b) One furnished office	Sum	1		
1.2.4	PSA 8.4.2.2	<u>Facilities for Contractor</u>	Sum	1		
1.2.5	8.4.3	<u>Supervision for duration of construction</u>	Sum	1		
1.2.6	8.4.4	<u>Company and head office overhead costs for the duration of the contract</u>	Sum	1		
1.2.7	PSA 8.4.5	<u>Other time related obligations</u>	Sum	1		
	PSA 8.4.6	<u>Compensation in terms of Clauses 5.12.2.4 and 9.1.4 of the Conditions of Contract for delays incurred:</u>				
1.2.8		(a) Plant	Sum/w_day	2		
1.2.9		(b) Labour	Sum/w_day	2		
1.2.10		(c) Supervision	Sum/w_day	2		
1.2.11		(d) Other services, facilities etc not covered by 1.2.12 through to 1.2.14	Sum/w_day	2		
1.3	8.5	<u>SUMS STATED PROVISIONALLY BY ENGINEER :</u>				
1.3.1		<u>Remuneration of Community Liason Officer</u>	Prov Sum	1	R 56 000.00	R 56 000.00
1.3.2		Mark-up on Item 1.3.1	%	56 000.00		
1.3.3		<u>Remuneration of Project Steering Committee members</u>	Prov Sum	1	R 48 000.00	R 48 000.00
1.3.4		Mark-up on Item 1.3.3	%	48 000.00		
TOTAL CARRIED FORWARD						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
1.4	PSA 8.6	<u>PRIME COST ITEMS</u>				
	PSA 8.6.1	<u>Prime Cost Sums (Goods, Services and Materials Required):</u>				
1.4.1	PSA 8.6.1 (a)	Allowance for acceptance control testing by Engineer (Not for process control testing to be carried out by the Contractor)	PC Sum	1	R 80 000.00	R 80 000.00
1.4.2	PSA 8.6.1 (b)	Charges Required by the Contractor on 1.4.1 above and for the fulfilment of all obligations	%	R80 000.00		
1.4.3		Conducting of Skills Audit and the development of a Training Plan for Local Labour	PC Sum	1	R 40 000.00	R 40 000.00
1.4.4		Charges Required by the Contractor on 1.4.3 above and for the fulfilment of all obligations	%	R40 000.00		
1.4.5		Presenting accredited training course for Local Labour and Micro Enterprises	PC Sum	1	R 50 000.00	R 50 000.00
1.4.6		Charges Required by the Contractor on 1.4.5 above and for the fulfilment of all obligations	%	R50 000.00		
1.4.7		Mark Up for Management of Micro Enterprises	%	R4 500 000.00		
1.5	PSA 8.7	<u>DAYWORKS (Provisional) :</u>				
		<u>(a) Labour : (rates shall include for on costs)</u>				
1.5.1		(i) Unskilled	hour	20		
1.5.2		(ii) Semi-skilled	hour	2		
1.5.3		(iii) Ganger	hour	20		
1.5.4		(iv) Artisan	hour	20		
		<u>(b) Materials :</u>				
1.5.5		(i) Allow provisional sum for materials based on their nett cost	Prov Sum	1	R 15 000.00	R 15 000.00
1.5.6		(ii) Percentage adjustment to item 1.4.5 for materials	%	15 000.00		
		<u>(c) Plant : (Rates shall include for on costs)</u>				
1.5.7		(i) Rubber tyred front-end loader minimum 90 kW (Caterpillar 908 or equivalent)	hour	9		
1.5.8		(ii) Backhoe Loader minimum 60 kW (Caterpillar 416D or equivalent)	hour	20		
1.5.9		(iii) Motor grader minimum 123 kW (Caterpillar 140H or equivalent)	hour	20		
1.5.10		(iv) Bull dozer minimum 108 kW (Caterpillar D6 or equivalent)	hour	9		
1.5.11		(v) Excavator minimum 20 tons 103 kW (Caterpillar 302C or equivalent)	hour	9		
1.5.12		(vi) Water Tanker Truck minimum 15 m ³ capacity	hour	9		
1.5.13		(vii) Compressor complete with hand tools and attachments - minimum 250 cfm	hour	9		
1.5.14		(viii) Tip Truck - minimum truck capacity of 5m ³	hour	9		
1.5.15		(ix) Revolving drum type concrete mixer - minimum capacity 0,3 m ³	hour	9		
1.5.16		(x) Pedestrian type vibrating roller (Bomag BW65H or equivalent)	hour	9		
1.5.17		(xi) Compaction vibrating roller - Single Drum Smooth - Self Propelled - minimum 12 tons	hour	9		
TOTAL CARRIED FORWARD						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD						
1.6	PSA 8.8	<u>TEMPORARY WORKS :</u>				
		<u>Existing services :</u>				
1.6.1	PSA 8.8.4 (c)	(a) Excavate by hand in soft material to expose existing services	m ³	60		
		(b) Lowering / relocating / repairing/ protecting existing services	Prov. Sum	1	R 375 000.00	R 375 000.00
	PSA 8.8.5	<u>Cost of survey in terms of Land Survey Act</u>				
1.6.2		(a) Locate, record and protect erf boundary and survey pegs	Sum	1		
1.6.3		(b) Replace pegs recorded as missing at commencement of Contract as well as pegs removed in terms of PSA 5.1.2 (a), (b) and (c)	No	10		
	PSA 8.8.7	<u>Compliance with the Occupational Health and Safety Act (Act 85 of 1993) and all relevant and applicable regulations, especially the Construction Regulations (2014) as promulgated under Section 43 of the Occupational Health and Safety Act (Act 85 of 1993), as amended from time to time, for the duration of the Contract including all Covid-19 Regulations required for main Contractor and SMME's</u>				
1.6.4		(a) Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum	1		
1.6.5		(b) Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY :						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.		<u>SECTION 2: ROADWORKS AND WALKWAYS</u>				
2.1	SANS 1200 C	<u>SITE CLEARANCE</u> as specified in SANS 1200 C and in the Scope of Work				
	PSC 8.2.1	<u>Clear and grub</u>				
2.1.1		(a) Verges along road reserves (edge of gravel road to Erf boundary)	ha	2		
	PSC 8.2	<u>Demolish, clear and transport away the following :</u>				
2.1.2	PSC 8.2.11	(a) Remove and dispose of existing concrete kerbing and channelling combination	m	100		
2.1.3	PSC 8.2.11	(b) Remove topsoil to 150mm depth, maintain and stockpile	m ³	2 726		
2.2	SANS 1200 D	<u>EARTHWORKS</u> as specified in SANS 1200 D and in the Scope of Work				
	PSD 8.3.3	<u>Restricted Excavation</u>				
		(a) <u>Excavate for restricted foundations, footings, aprons, beams, landscaping, structures, pathways, streetlights as well as for walls and drains, in all materials, and use for fill, backfill, berm or dispose, as ordered</u>				
2.2.1		(i) Excavate for v-drain and dispose of at Municipal Waste Sites	m ³	1 050		
		<u>(b) Extra over items 2.2.1 for:</u>				
2.2.2	PSD 8.3.2.2(b)	(i) Hard rock excavation	m ³	18		
	PSD 8.3.2.2(d)	(ii) Hand excavation where ordered	m ³	15		
2.3	SANS 1200 DM	<u>EARTHWORKS (ROADS, SUBGRADE)</u> as specified in SANS 1200 DM and in the Scope of Work				
	PSDM 8.3.3	<u>Treatment of roadbed</u>				
		<u>(a) Roadbed preparation and compaction of material to</u>				
2.3.1		(i) minimum of 93% of modified AASHTO maximum density (Beneath V-drain - 150mm thick)	m ³	537		
2.3.2		(ii) minimum of 93% of modified AASHTO maximum density (Beneath roads - 150mm thick)	m ³	2 200		
	PSDM 8.3.3	<u>(b) Road-bed preparation before receiving special treatment by (only where ordered by Engineer)</u>				
2.3.3		(i) in-situ material to be compacted using an impact roller (25 kJ, 3 sided) with 20 passes, including DCP and CIR testing, as indicated on site by Engineer.	m ²	1 500		
		<u>(c) Extra over item 2.3.2 for:</u>				
2.3.4		(ii) Additional 10 passes of the impact roller (25 kJ, 3 sided)	m ²	1 500		
	PSDM 8.3.3	<u>(d) Road-bed preparation before receiving rockfill layer by (only where ordered by Engineer)</u>				
2.3.5		(i) grading and trimming smoothly to within the minimum degree of level tolerance, ± 10 mm (no compaction)	m ²	1 234		
CARRIED FORWARD :						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD :						
	PSDM 8.3.4	<u>Cut to fill, borrow to fill</u>				
2.3.6		(a) Cut to fill compacted to 93% of modified AASHTO maximum density	m³	185		
2.3.7		(b) Borrow to fill from commercial sources compacted to 93% of modified AASHTO maximum density	m³	225		
	PSDM 8.3.7	<u>Cut to spoil from</u>				
2.3.8		(a) Soft excavation	m³	5 670		
2.3.9		(c) Hard excavation	m³	284		
	PSDM 8.3.13	<u>Surface finishes</u>				
		(a) <u>Topsoiling</u>				
2.3.10		(i) Topsoiling from stockpile - 100mm thick	m²	1 879		
2.3.11		(ii) Topsoiling from commercial sources - 100mm thick	m²	1 879		
		(b) <u>Grassing or other cover Kikuyu - including park areas</u>				
2.3.12		(i) Using Kikuyu sods	m²	0		Rate Only
2.3.13		(d) <u>Trim, shape and roll verge, where ordered</u>	m²	0		Rate Only
2.4	SANS 1200 GA	<u>CONCRETE (SMALL WORKS)</u>				
		as specified in SANS 1200 GA and in the Scope of Work				
	PSGA 8.4.4	<u>Unformed surface finishes:</u>				
2.4.1		(a) Wood-floated finish	m²	0		Rate Only
2.4.2		(b) Steel-floated finish	m²	0		Rate Only
2.4.3		(c) Broom textured finish	m²	3 550		
	PSGA 8.4.5	<u>Concrete surfaces (Thickness and grade of concrete specified):</u>				
2.4.4		(a) 150 mm thick - Class 30/19	m²	3 550		
	8.5	<u>Joints:</u>				
2.4.5		(a) Construction joints for Concrete Works (sealed with ABE polysulphide joint sealant)	m	202		
2.4.6		(b) Outlet to Stormwater Structure- Reno Mattress as per detailed on drawing 1917-D-325	m³	11		
2.5	8.3.5 PSDM 8.3.5	<u>SELECTED LAYERS</u>				
		<u>(b) Using material from commercial or off site sources located by the Contractor</u>				
2.5.1		(i) 150 mm selected subgrade (SSG), G7 material compacted to 93% of modified AASHTO maximum density	m³	378		
2.5.2		(ii) Selected rockfill, uniformly graded between 50 mm and 200 mm, process and compact	m³	650		
2.5.3		(iii) 75 mm selected correction / blinding layer, spreaded and rolled into selected rockfill layer (PI > 12, Max size = 37.5 mm)	m³	180		
2.5.4		(iv) Supply and install A4 bidum complete to top of correction layer	m²	2 430		
CARRIED FORWARD :						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD :						
2.6	SANS 1200 ME	<u>SUBBASE</u> as specified in SANS 1200 ME and in the Scope of Work				
	PSME 8.3.3	<u>Construct the subbase course/shoulders/gravel wearing course with material from commercial sources :</u>				
2.6.1		(a) 150mm G5 Subbase quality material beneath vehicular traffic areas compacted to 95% of modified AASHTO density (Roads)	m³	2 500		
2.6.2		(a) 150mm G5 Subbase quality material beneath vehicular traffic areas compacted to 95% of modified AASHTO density (V-Drain)	m³	637		
2.7	SANS 1200 MF	<u>BASE</u> as specified in SANS 1200 MF and in the Scope of Work				
	PSMF 8.3.3	<u>Construct base with material from commercial sources or designated borrow areas :</u>				
2.7.1		(a) 150mm (C4) compacted to 97% modified AASHTO maximum density <u>Process base material by the following processes, as relevant, and use in :</u>	m³	2 515		
2.7.2		(a) Stabilization using Portland Cement <u>Stabilizing agent :</u>	m³	2 515		
2.7.3	8..3.8 (b)	(a) Portland cement (3%) by weight	ton	176		
2.8	SANS 1200 MJ	<u>SEGMENTED PAVING (Precast concrete segmental blocks)</u> as specified in SANS 1200 MJ and in the Scope of Work				
	PSMJ 8.2.2	<u>Construction of paving complete :</u>				
2.8.1		(a) 80mm grey Concrete Interlocking Paver to meet SABS requirements (Herringbone Pattern, Type S-A - Class 30/2) as per CMA Handbook, including 20mm bedding sand	m²	15 312		
	PSMJ 8.2.3	<u>Cutting units to fit edge restraints</u>				
2.8.3		(a) Circular cutting	m	1 500		
2.8.4		(b) Straight cutting	m	5 000		
2.8.5	8.2.4	<u>Rolling to locked-up condition</u>	m²	15 312		
2.9	SANS 1200 MK PSMK 5.15	<u>KERBING AND CHANNELLING</u> as specified in SANS 1200 MK and in the Scope of Work				
	PSMK 8.2.1	<u>Concrete kerbing :</u>				
		(a) Precast concrete edge strip (Fig 11) as detailed on drawing 1917-D-319 for curvatures indicated, complete with concrete screed:				
2.9.1		(i) Up to 4m radius	m	20		
2.9.2		(ii) Exceeding 4m radius up to 20 m radius	m	140		
2.9.3		(iii) exceeding 20 m radius	m	2 200		
		(b) Precast concrete edge strip (Fig 10) as detailed on drawing 1917-D-319 for curvatures indicated, complete with concrete screed indicated:				
2.9.4		(i) Up to 4m radius	m	55		
2.9.5		(ii) Exceeding 4m radius up to 20 m radius	m	0		Rate Only
2.9.6		(iii) exceeding 20 m radius	m	0		Rate Only
CARRIED FORWARD :						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD :						
	PSMK 8.2.2	<u>Concrete kerbing and channelling combined:</u> (a) Precast barrier kerbing (Fig 3), complete with cast-insitu channel and concrete backing, as detailed on drawing 1917-D-319 for 150mm base course and for curvatures indicated: (i) Up to 4m radius (ii) Exceeding 4m radius up to 20 m radius (iii) exceeding 20 m radius	m	85		
2.9.7			m	250		
2.9.8			m	110		
2.9.9			m	20		
2.9.10		Junction with existing Kerb and Channel	m			
	PSMK 8.2.6.1	<u>Ancillaries:</u> (a) Inlet, outlet, transition and similar structures: (i) 2m long transition piece between barrier kerb and edge strip	No	60		
2.9.11						
2.10	SANS 1200 MM	<u>ANCILLARY ROADWORKS</u> as specified in SANS 1200 MM and in the Scope of Work				
	PSMM 8.3.1	<u>Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from:</u> a) Prepainted galvanised steel plate (Chromadek 1, 4 mm thick) or approved equivalent (Sign number, size and name stated) (i) R1 - 600 mm diameter - Stop (ii) R2 - Yield - 900mm triangular (i) R1.4 - 600 mm diameter - Four way Stop	No	17		
2.10.1			No	0		Rate Only
2.10.2			No	0		Rate Only
2.10.3			No	0		Rate Only
	PSMM 8.3.3	<u>Sign Supports:</u> (a) Steel tubing, 60 mm dia poles, galvanised, 2.5 mm wall thickness (i) 2.1 m lengths (ii) 3.3 m lengths	No	0		
2.10.4			No	17		Rate Only
2.10.5			No			
	8.3.4	<u>Excavating and backfilling for road sign supports (refer drawing 1917-D-</u>				
2.10.6		(a) Using 15 MPa concrete for backfilling	m³	2		
	PSMM 8.3.9	<u>Dismantling and disposal of ground mounted road signs</u> (a) Sign panels of all materials with surface area of (i) up to 2m²	m²	0		Rate Only
2.10.7			No	0		Rate Only
2.10.8		(b) Removal of supports of existing ground mounted signs all diameters	No			
	PSMM 8.4.1	<u>Road Markings:</u> <u>All in One Matt Acrylic Paint(Two Coats)</u> (a) White lines (i) 100 mm wide (ii) 300 mm wide (b) White lettering and symbols	m	170		
2.10.9			m	60		
2.10.10			m²	89		
2.10.11						
CARRIED FORWARD :						

ITEM NO	PMT REF	SHORT DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3		<u>SECTION 3: GENERAL</u>				
3.1	SANS 1200 D	<u>EARTHWORKS :</u> as specified in SANS 1200 D and in the Scope of Work				
	8.3.3	<u>Restriction excavation :</u>				
	PSD 8.3.3(a)	Excavate for restricted foundations, footings, aprons, beams, landscaping, structures, pathways, streetlights as well as for walls and drains, in all materials, and use for fill, backfill, berm or dispose, as ordered:				
3.1.1		(a) Backfill compacted to 90% of modified AASHTO maximum density	m³	20		
3.1.2		(b) Spoil	m³	10		
3.2	SANS 1200 GA	<u>CONCRETE (SMALL WORKS) :</u> as specified in SANS 1200 GA and in the Scope of Work Minor works as shown on the drawings and directed on site (slabs, walls, motor slopes and the like):				
	8.2	<u>Scheduled Formwork Items :</u>				
3.2.1	8.2.2	(a) Smooth (exposed)	m²	805		
3.2.2	8.2.3	(b) Narrow widths up to 300 mm	m	50		
	8.3	<u>Scheduled Reinforcement Items:</u>				
3.2.3	8.3.2	(a) High tensile welded mesh ref. 395	m²	3 707		
3.2.4		75 Micron DPC or Prime	m²	3 700		
TOTAL CARRIED FORWARD TO SUMMARY :						

Metsimaholo Local Municipality
TENDER FOR CIVIL ENGINEERING WORKS:
UPGRADING OF GRAVEL ROADS TO PAVED STANDARDS -
METSIMAHOLO

SUMMARY OF SCHEDULE OF QUANTITIES

	Amount
SECTION 1: PRELIMINARY AND GENERAL	R -
SECTION 2: ROADWORKS AND WALKWAYS	R -
SECTION 3: GENERAL	R -
NETT TOTAL	R -
ADD : 10% CONTINGENCIES	R -
SUB TOTAL	R -
ADD : 15% VALUE ADDED TAX	R -
TOTAL SUM CARRIED TO FORM OF OFFER	R -

.....
SIGNATURE

THIS TENDER IS NOT SUBJECT TO CONTRACT PRICE ADJUSTMENT



METSIMAHOLO LOCAL MUNICIPALITY

BID NO MLM 11/2021/22

CONSTRUCTION OF BLOCK PAVED ROADS AND STORMWATER IN METSIMAHOLO TOWNSHIP WARD 5

C3: SCOPE OF WORK

PART C3: SCOPE OF WORKS

	<u>Pages</u>
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C3.2 Engineering	118
C3.3 Procurement	119
C3.4 Construction (Civil and Structures).....	122
C3.5 Management.....	237

Status

Should any requirement or provision in the parts of the Scope of Work conflict with any requirement of any Standardised Specification, or any drawings, the order of precedence, unless otherwise specified, is:

- Project Specifications
- Drawings
- Scope of Works
- The following variations and additions to the SABS 1200 Standardized Specifications referred to shall apply to this Contract.

C3.1 DESCRIPTION OF THE WORKS

CONTENTS

1. EMPLOYER'S OBJECTIVES
2. OVERVIEW OF THE WORKS
3. EXTENT OF THE WORKS
4. CONSTRUCTION PROGRAMME
5. CONTRACTOR'S CAMP SITE AND SITE FACILITIES AVAILABLE
6. SITE FACILITIES REQUIRED
7. FEATURES REQUIRING SPECIAL ATTENTION
8. ACCOMMODATION OF TRAFFIC

1. EMPLOYER'S OBJECTIVES

The roads upgrade Infrastructure can be categorised as construction of blocked paved roads and stormwater upgrades. The aim of this infrastructure is not only to address transportation related issues but as well as the social, environment and economic issues in the Municipality.

The objective is to deliver public infrastructure using labour intensive methods where feasible. Labour-intensive works comprise the activities described in SANS 1921-5, such as, casting concrete, minor earthworks and laying of block paving activities which are to be performed by hand, and its associated specification data. Such works shall be constructed using local workers who are temporarily employed in terms of this Scope of Work.

The project is to be completed within **8 months** of the Commencement Date.

2. OVERVIEW OF THE WORKS

2.1 Location of the Site

The location of the works is in METSIMAHOLO Ward 5 within the Metsimaholo Local Municipality.

2.2 General description of scope of works

Site Clearance

- Restricted excavation along road reserve

Layer works, Road works and Stormwater

- Construction of layer works from in-situ and imported materials
- Construction of roads comprising of concrete interlocking paving blocks
- Concrete kerbing, edge restraints and channelling
- Road signs and markings where appropriate
- Installation of New Stormwater inlets and outlets

Road works, unless otherwise instructed in writing by the Engineer, shall:

- Be constructed of concrete paving blocks to colour, size, thickness and patterns as specified on the formally issued construction drawings.
- Incorporate figure 10 and/or 12 type kerbing as an edge restraint and as specified on the formally issued construction drawings.
- Not hinder access to property or building entrance/exits and shall be tied-in seamlessly without creating stormwater drainage hindrance or creating steep ramps that hinders vehicle travel.

The stormwater drainage required along the indicated streets is indicated and the existing drainage inlet structures must also be rehabilitated (by cleaning and/or partial and/or fully rebuilt), where specific structures shall be so indicated on the construction drawings.

Signage and marking for roads shall be provided as specified on the construction drawings, including relocation of existing signs and/or markings, replacement of missing or damaged signs and/or markings and provision of new (and/or additional) signs and/or markings.

Ancillary Works

- Road signs and road markings where appropriate

2.3 Temporary Works

The contractor is to design, supply, construct, demolish and spoil at his own cost any temporary works required in order to carry out the construction works as required.

2.4 Access

Furthermore, it is a requirement of this Contract that the contractor ensures that all residents have access to their properties after hours and on weekends; all businesses are to have access during business hours. The Contractor is to implement temporary measures / deviations as required in order to achieve this outcome. Prior to the implementation of any deviation, written permission for such deviations shall be obtained from the Principal Agent.

The Contractor shall advise all residents, community leaders and other stakeholders at least 2 weeks prior to the commencement of construction activities in an area. The Contractor is to employ a Community Liaison Officer in conjunction with the community structures in the area in order to achieve this outcome.

3. EXTENT OF THE WORKS

A. ROADWORKS

A.1. Geometric Design

The designated routes have been designed to provide two lane traffic.

A.2 Pavement Structure

The structural and functional capacity of the road has been designed to comply with the requirements for the appropriate category of roads.

B. DRAINAGE WORK

The extent of drainage work involved in this contract is covered by the relevant sections of the Bill of Quantities and as shown on the relevant engineering drawings.

C. SERVICES

A schedule of affected services with the respective service authorities can be found in the provided tender drawings.

C.1. Telkom

The relocation of Telkom infrastructure is not envisaged. If any damages occur (as a result of the Contractor's operations) the Contractor will be required to contact Telkom to arrange for timeous reparations to the services (at the Contractor's expense). The Contractor may not repair any damages himself unless specifically instructed (in writing) by Telkom to do so.

C.2. Municipal Services

Relocation of municipal services is not foreseen at this stage. The existing services must be identified and clearly marked to prevent damages to these services.

C.3. Fibre Optic Cables

The relocation of fibre optic is not envisaged. If any damages occur (as a result of the Contractor's operations) the Contractor will be required to contact the relevant service provider to arrange for timeous reparations to the services. The Contractor may not repair any damages himself unless specifically instructed (in writing) by the relevant service provider, to do so.

The cost of the repairs will be for the Contractors account.

D. APPURTENANT WORKS

Appurtenant works include the following:

a) The Painting of Road Markings.

A minimum of three weeks shall be allowed after the completion of surfacing operations before road markings are applied. The Engineer may however instruct that road markings be applied immediately in certain critical areas for reasons of safety. Provision has been made in the quantities for the re-establishment of the road marking team and the repainting of the road markings at the end of the defects notification period.

b) The finishing off of the road reserve and other disturbed areas as ordered by the Engineer.

4. CONSTRUCTION PROGRAMME

The time for completion, as stated in the Contract Data in terms of Clause 1.1.1.14 of the Conditions of Contract, is **8 (Eight) months**, excluding the year end break (builder's holidays). The Contractor shall plan and programme his construction sequence for completion within the time period specified.

5. CONTRACTOR'S CAMP SITE AND SITE FACILITIES AVAILABLE

5.1 Location of Contractor's Camp Site

No specific land has been made available for the Contractor's camp site and office facilities for the Engineer. The Contractor shall make his own arrangements concerning a suitable approved site and location, as well as the provision of water, electricity and other services for the camp site and office facilities.

The Contractor's camp site shall be maintained in a neat and tidy condition and on completion of the Works, the camp area shall be cleared and reinstated; all to the satisfaction of the Engineer. Any damage to property shall be made good to the satisfaction of the Engineer and at the Contractor's expense.

5.2 Provision for 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 thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

6. SITE FACILITIES REQUIRED

Office facilities as scheduled are required on the site for the Engineer or his representative.

7. FEATURES REQUIRING SPECIAL ATTENTION

7.1 Existing Services

Various types of services, both overhead and underground, exist within the boundaries of the site. It is envisaged that it will be necessary for the Contractor to arrange for the removal, relocation and protection of existing services. Should any work become necessary due to unforeseen circumstances then all work shall be done strictly in accordance with the requirements of the relevant service owner and in accordance with the requirements of these Works Specifications.

Procedures for the protection and/or relocation of such services are outlined in the Project Specifications. All costs related to the contents of this paragraph shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

7.2 Proposed Services

No new services are envisaged in this contract except roads and stormwater.

7.3 Damage to Unknown Services

Where damage is incurred to services not shown in the services drawings and unknown to the contractor at the time of construction, then the costs to repair and reinstate such services shall be borne by both the Contractor and the Client in a 50% proportion to each party.

7.4 Construction in restricted areas

It will be necessary for the Contractor to work within restricted areas. No additional payment will be made for work done in such areas, despite indications to the contrary in the Standard Specifications.

7.5 Water for construction purposes

The Contractor must make adequate provision in his tender for all negotiations and procurement of water for construction activities and all related costs will be deemed to be included in his tendered rates.

7.6 Weatherproof Protection for Workers

All staff required to continue working during rain shall be provided with approved protective clothing and footwear.

7.7 Night Work and Work on Public Holidays

Where the Contractor requires staff to work overtime, in accordance to the Basic Condition of Employment Act, he shall make the necessary arrangements with the Engineer and obtain written approval from the Engineer. The Contractor shall bear the cost of his overtime work.

7.8 Environmental Requirements

The Contractor shall take particular note of the environmental requirements contained in Part C of the Works Specifications.

Personnel and plant shall not enter property beyond the road reserve boundary irrespective of whether or not the boundary is fenced.

The Contractor shall take every precaution to avoid damage to vegetation within that area of the road reserve which falls outside the designated work area as indicated on the drawings. Any damage caused is to be repaired at the Contractor's expense.

Storage and stockpiling of materials within the road reserve will not be permitted without the written consent of the Engineer. Excess material from excavations and waste material shall be spoiled off site at suitable locations.

8. ACCOMMODATION OF TRAFFIC

8.1 General

- (i) The safety and convenience of the travelling public is to be considered of utmost importance and every effort must be made to ensure that all temporary road signs, cones, flagmen and speed controls are maintained and effective, and that courtesy is extended to the public at all times.
- (ii) It is important that the traffic accommodation requirements described in these specifications are adhered to and that all installations meet with the approval of the relevant traffic authority.

- (iii) Construction work, including the erection and removal of traffic control facilities, shall be executed between sunrise and sunset on Monday to Saturday, inclusive. Accommodation of traffic on the existing traffic lanes will be required throughout the construction contract period. The existing number of lanes for each traffic movement affected by construction shall not be reduced without the written authorisation of the Engineer.
- (iv) It should be noted that Sundays are specified as "Special non-working days" in the Contract Data. In terms of the General Conditions of Contract the Engineer's permission has to be obtained for work to be carried out on special non-working days, for which permission shall be applied for at least 2 days prior to the day.
- (v) The travelling public has the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on public roads.
- (vi) Failure to maintain road signs, warning signs or flicker lights, etc, in good condition shall constitute ample reason for the Engineer to bring the works to a stop until the road signs, etc, have been repaired to his satisfaction and to impose the penalties as described in the Contract Data.
- (vii) The Contractor may not commence construction activities before adequate provision has been made to accommodate traffic in accordance with the requirements of these specifications and Chapter 13 of Volume 2 of the South African Road Traffic Signs Manual (SARTSM).
- (viii) The Contractor shall submit proposals in connection with all signs and accommodation of traffic to the Engineer for approval.
- (ix) Access to properties shall be provided at all times. Should any access need to be temporarily closed, such a closure shall be communicated with the affected parties. The Contractor shall only commence with access restriction or closures upon approval of the affected parties and such approval shall be provided to the Engineer.
- (x) The Contractor must make provision for the use of points-men at intersections where the traffic lights are non-functional, specifically during traffic peak hour periods during the construction period.
- (xi) The safe ongoing use of the roadway under construction, including all planned detours and intersections shall be the full responsibility of the Contractor.

8.2 Method and arrangements

The work in this Contract will necessitate traffic having to reduce speed and be constricted to a single carriageway with a possible reduced width past or through the construction work areas. In addition some temporary deviations are envisaged at road junctions and intersections under this contract.

C3.2 ENGINEERING

1. DRAWINGS

The Works shall be constructed in accordance with the design drawings included in the Contract Documents.

The reduced drawings listed and included in C5 of the tender documents shall be used for tender purposes only.

The Contractor will be supplied with three (3) unreduced paper prints of each of the drawings and any others required for construction. These copies are issued free of charge and the Contractor shall make any additional copies he may require at his own cost.

Only figured dimensions shall be used and drawings shall not be scaled unless otherwise instructed.

The levels given on construction drawings are subject to confirmation on site, and the Contractor shall submit all levels to the Engineer for confirmation before he commences any construction work. The Contractor shall also check all clearances given on the drawings and shall inform the Engineer of any discrepancies.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

Any information in the possession of the Contractor, which the Engineer requires to complete his record drawings shall be supplied to the Engineer's Representative before a certificate of completion will be issued.

C3.3 Procurement

3.3 PROCUREMENT

3.3.1 Requirements

The contractor shall be required to adopt labour based techniques through the full spectrum of the works with the proviso that the Clients specific objectives regarding time and quality are not compromised. **Maximisation of employment shall be of the essence on this contract.**

Together with their tenders, all Tenderers are required to submit a comprehensive **implementation plan** clearly stating the labour content and number of jobs that shall be created. The employment of labour shall be reflected in a programme in sufficient details to enable the Project Manager to monitor and compare it with the implementation plan.

The Contractor shall be required to submit employment data on a monthly basis to the Project Manager.

Tenderers are to also note that it is an explicit condition of this tender that all unskilled labourers on the project are to be employed from the local community. The Contractor shall in general, maximise the involvement of the local community and employ a minimum of 10 people.

3.3.2 Subcontracting – Special Conditions of Contract

Participation and Advancement of Start-Up, Small and Micro Enterprises

The Metsimaholo Local Municipality (MLM) has identified job creation and access to procurement opportunities by Start-ups, Small and Micro enterprises (SMMEs) as an essential requirement towards building an economically viable City. In this regard the following definitions are applicable:

“Start-up Enterprises” means an enterprise that has been in existence and operating for less than two years.

“Small Enterprises” means an enterprise that has a CIDB grading designation of 1 or 2.

“Micro Enterprises” means an enterprise that has a CIDB grading designation of 3.

“Locally based SMMEs” means enterprises that have their operational base in the ward in which the project is to be executed or, alternatively, the members of the enterprise are resident in the particular ward. Should suitable locally based SMME contractors as defined above not be available in the particular ward, then they shall be sourced from adjacent wards.

It is a condition of this tender that the successful contractor is required to sub contract a minimum value of 30% of the Contract Value.

If it is established that the SMMEs are sufficiently resourced to execute the proposed works as a complete package the Contractor may conclude full sub-contract agreements with locally based SMMEs to a minimum value of 30% of the Contract Value.

The appointed contractor will go out on tender to appoint local sub contractors with CIDB grading of 2 or 3 CE . The main contractor will allocate works worth 30% the Contract Value to the local sub contractor and will be required to assist the local contractor to upgrade their grading and as well as mentor the contractor throughout construction. This requirement will be added as an item on the bill to ensure effective implementation of local contractor development.

The Contract Data must record the specific requirements in respect of penalties, retention and payment. With regard to the latter, the Contractor is to allow for fortnightly certificates from the SMMEs and for

payment to the SMMEs to be effected within 7 days of certification. In order to achieve the goals of this policy and to ensure that the SMMEs are treated fairly and given every opportunity to advance their business whilst delivering a successful project, the Contractor is to note the following and provide for any cost that may be associated therewith.

1. If appropriate, the SMME bill of quantities is to provide for market related P&G items in order that the SMME may be compensated for any unforeseen delays or events that impact on his ability to complete his works.
2. The Contractor will be expected to have clearly specified the programme dates to the SMME contractors and these dates are to be included in the contract of agreement between the two parties. The Contractor is to monitor the SMME contractor's progress against the programme and hold progress meetings with the SMME contractors where minutes are to be kept and signed off by both parties.
3. The Contractor is to assess the skills of the SMME contractor and provide the relevant support and training where it is necessary in order for the SMME contractor to complete the works to programme, budget and specification. The Managing Contractor will be expected to provide on-site training to the SMME contractors that will ensure that the SMME contractor's staff is suitably trained to execute the works and that they receive sufficient relevant experience on the project.
4. The Contractor is responsible for safety compliance on the project and will assist the SMME contractors in all aspects to achieve safety compliance, that will include:
 - a) Assisting the SMME contractors with developing their safety files, legal appointments, etc
 - b) Assisting the SMME contractors with achieving safety on site.
 - c) Having tool box talks with the SMME contractor's employees on a daily basis.
 - d) Providing all safety equipment and signage.
 - e) Providing safety training where necessary.
5. Contractor is to provide all the necessary equipment for the timeous monitoring and the checking of the quality of works as carried out by the SMME contractors. The Contractor will be expected to monitor the SMME contractor's works for quality compliance and provide all the necessary support to the SMME contractors in order to achieve quality requirements. The Contractor is to ensure that if the SMME contractor's quality of works does not achieve specification the Contractor will assist the SMME contractors to achieve specification and not allow the works to continue until the quality requirements are achieved.
6. The Contractor is to generate monthly reports for submission to the MLM that includes the following:
 - a) SMME contractor resources on the site, ie supervisors, labour, plant tools and equipment
 - b) SMME contractor progress of works on site.
 - c) SMME contractor quality control on site.
 - d) SMME contractor expenditure on the project versus target expenditure.
 - e) Copies of minutes of the SMME contractor and Contractor progress meetings.
 - f) Concerns and improvements to be made.

The Tenderers are to price the works to achieve full compliance with the above requirements. Failure of the Contractor to achieve these requirements may result in the MLM enforcing compliance by appointing 3rd parties if necessary to assist and deducting all reasonable costs for achieving compliance from money due to the Contractor.

Following from the above, the SMME's to be contracted on the project must be selected from the provided database which is attached on this document contract. The data base includes SMME that are youth, women owned, disabled and ex-combats. The contractor will be expected to give

preference to SMME's that comply with all/most of these groups. The following information must be provided by said contractor on the date of tender closure.

1. Detailed approach and methodology on the employment of local SMME's
2. SMME/s company name/s to be employed on the project.
3. SMME contact persons
4. Works to be executed by SMME/s
5. Programme (anticipated start, duration and end dates) applicable to the works defined in item 4 above.
6. Estimated value of the works identified in item 4 above.

The Metsimaholo Local Municipality (MLM) reserves the right to withdraw our acceptance of offer, should the appointed Contractor fail to satisfactorily address the above requirements (1 to 6) within 14 days of the commencement date of the contract. Approved documentation will form part of the contract.

MEASUREMENT AND PAYMENT

	Item	Unit
3.3.3	Mark Up for Management of Micro Enterprises (SMME's)	%
	The percentage Mark Up tendered on the value of the Micro Enterprises work shall include full compensation for all guidance, supervision, mentoring, setting out and monitoring activities that may be deemed necessary to ensure the Works carried out by MEs are in accordance with the technical and OHS specifications and within the agreed timeframes. The payment will be made on a monthly basis, based on the actual certificate value of the ME, for the said month.	
3.3.4	Penalty Calculation	
	Use of Micro Enterprises (SMME's) Should the contractor fail to meet the minimum requirement of subletting at least 30% of the Contract value to SMME's (emerging sub-contractors), a penalty of 1,5 * the value of the amount to be sublet, minus the actual value sublet, will be implemented. This amount will be deducted from the Contractor's payment certificate. The Contractor is to indicate to the Municipality via a report certified by their auditors indicating that at least 30% of the Contract value excluding PC Sums, Main Contractors P&G's and Vat, has been paid to SMME's at the end of the Contract before the retention money is released	

C3.4 CONSTRUCTION

WORKS SPECIFICATIONS

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C3.4.1 PART A: GENERAL

A1 GENERAL

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C3.4.1 PART A: GENERAL**A GENERAL****A 1 Particular generic specifications**

For the purpose of this Contract:

- a) where gender terms are used, it shall be applicable to both male and female.
- b) "VAT" shall mean Value Added Tax in terms of the Value Added Tax Act 89 of 1991 as amended.

A 2 Plant and materials

The Contractor is required to provide all plant and materials necessary to carry out the works as required. No additional allowances other than those already specified in the schedule of quantities shall be allowed for with respect to plant and materials.

A 3 Construction equipment

The Contractor is required to provide all equipment necessary to carry out the works as required. No additional allowances other than those already specified in the schedule of quantities shall be allowed for with respect to equipment.

A 4 Existing services

The Contractor:

- a) must make provision for the possible existence of numerous services (e.g.: Stormwater, Water, Electrical, Sasol, PRASA, Rand Water, Eskom, Telkom, Neotel etc.) within and in close proximity to the work areas.
- b) shall be provided with record information from services authorities to enable him to apply for wayleave at the Johannesburg Roads Agency.
- c) is to record on as built drawings the location of existing services or services which have been relocated during Contract Period.
- d) must inform the relevant service provider immediately (within 2 hours of incident) such that procedures for the reinstatement of the service can be effected, should he damage or break an existing service (whether known or unknown).
- e) is responsible to provide his own equipment in order to determine the location of existing services. The provision of such equipment shall be deemed to have been included in the rates.

A 5 Site usage

Site usage shall be limited to hours as specified in the Contract Data, unless prior arrangement is made with the Engineer.

A 6 Permits

The Contractor will be required to obtain permits from all the applicable service provider's within the jurisdiction of the Municipality. It is the Contractor's responsibility to obtain final permit approval according to applicable procedures and specifications. Permits associated costs shall be deemed to have been included in the scheduled rates for excavation and location of existing services under the relevant section of SANS 1200 A.

A 7 Inspection of adjoining properties

The Contractor shall carry out inspections and evidence collection of properties adjoining the works to ensure that in the event of a claim arising from any of the owners of the adjoining properties for damage to property and the like, the Contractor has substantial evidence to support or refute such claims. The Contractor accepts full liability and responsibility for damage which he causes to adjoining properties as well as any costs involved in refuting or processing of such claims.

A 8 Electricity for construction purposes

The Contractor shall make arrangements with the relevant authority for the supply and distribution of power for purposes of this Contract, the cost of which shall be deemed to be included in the rates inserted in the Schedule of Quantities.

Power used for carrying out of the works in accordance with these Specifications will not be subject to measurement or payment.

A 9 Survey control and setting out of the works

The Contractor is to confirm the levels and coordinates of all benchmarks prior to commencing with construction.

A10 Method Statement

The Contractor shall provide the Engineer with a method statement indicating the manner and sequence in which he intends to construct the works, for each work area, with the program. In the method statement the Contractor must address at least the following items:

1. Sequence of the works for the relevant works area
2. Target dates for the tasks identified in sequence of the works for the relevant works area
3. Materials requirements
4. Construction Plant to be used
5. Services affecting construction
6. Any factors that could affect construction progress after commencement

The method statement must be approved by the Engineer before commencement of construction. In order to minimize the impact on traffic, pedestrians and business the Contractor will be required to segment the works in such a manner that no portion of the works is more than one day ahead of the following position i.e. trenches cannot be excavated more than one day ahead of pipe laying, pipes more than one day in advance of manhole construction and finishing off etc. These segments of the works shall be clearly defined in the Contractor's method statement for each work area.

The approval by the Engineer of any program shall have no contractual significance other than that the Engineer would be satisfied if the work is carried out in accordance to such program and that the Contractor undertakes to carry out the work in accordance with the program. It shall not limit the right of the Engineer to instruct the Contractor to vary the program should circumstances make this necessary.

A11 Software application for programming

The construction programme shall be completed in Microsoft ® Project 2010 or compatible software. The construction programme and updated versions thereof shall be made electronically available to the Engineer.

A12 Methods and procedures

The methods and procedures for the execution of the works shall be in accordance with the standard specifications and the variations and additions thereto.

A13 Quality plans and control

The Contractor shall be required to provide and maintain a quality plan to ensure that the quality of all work components is of a high standard. Such a quality plan shall be approved by the Engineer.

A14 Accommodation of traffic on public roads occupied by the Contractor**a) Accommodation of traffic**

The Contractor shall ensure the safe accommodation of traffic at all areas where the work may impact on traffic and shall provide all drums, watching, lighting, signs and barricades required by the road authorities, and in accordance with the South African Road Traffic Signs Manual. Penalties shall be imposed on the Contractor for non-compliance.

b) Access to properties

Adequate access shall at all times be maintained to public and private properties unless otherwise arranged and approved. Details of the proposed means of access shall be submitted before any such access is restricted. Claims arising from impeded access shall be the responsibility of the Contractor.

At least 2 days before commencing any work affecting access to a property, the Engineer and the occupier/owner of each such property shall be notified of the Contractor's intention to commence work, the date of commencement, expected duration and arrangements which will be made regarding maintenance of access.

c) Transport Department requirements

The Contractor must provide a bridge with side rails across excavations to allow pedestrians access to the sidewalk. Allowance for the costs associated with providing pedestrian access to sidewalks will be deemed to have been included under relevant Items in the Schedule of Quantities.

d) Services

Services to a property shall remain unimpeded. Where necessary for access or egress, excavated and filled works, concrete or asphalt surfaces shall be satisfactorily covered temporarily to protect the work from damage and to maintain access.

A15 Other contractors on site

There may be other contractors working in close proximity and/ or within the site boundaries road reserve completing other projects. As such, the Contractor is required to make adequate allowances for such possibilities. No claims with respect to works being carried out by other contractors will be entertained by the Employer.

A16 Testing, completion, commissioning and correction of defects

The onus is on the Contractor to produce work which will conform in quality and in accuracy of detail to the requirements hereinafter specified. The Contractor must clearly understand that it is not a duty of the Engineer or his representative to act as foreman or surveyor on the Works.

The Contractor shall, at his own expense, provide experienced engineers, foremen and surveyors together with all transport, instruments and equipment for supervising, checking and controlling the work.

The act of passing any completed work for payment by the Engineer shall not be construed as signifying approval or acceptance there-of. Failure on the part of the Engineer to reject any defective work or material shall not in any way relieve the Contractor of his obligations under the Contract, nor prevent later rejection when such work or material is discovered.

The contractor shall keep files of all the test results, which shall be accessible by the Engineer at any time. Two copies of these files shall be provided to the Engineer at the end of the project.

A17 Key personnel

The Contractor is to provide the Curriculum Vitae's of key personnel to be employed on the project as well as the person's position and responsibilities within the project team. The Contractor shall provide the following minimum key staff:

- a) Contracts manager;
- b) Site Agent;
- c) Health and Safety Officer; and
- d) Foremen.

A18 Management meetings

Bi-Weekly site meetings shall be arranged and facilitated by the Engineer. Senior Contractor management staff attendance shall be compulsory. The Contractor shall be required to provide reporting with regard to project progress, resources (human, plant and equipment), community issues, environmental and health and safety aspects.

A19 Forms for contract administration

The Contractor shall maintain files which shall contain project information related to project progress, resources (human, plant and equipment), community issues, environmental, health and safety aspects, penalties imposed, claims lodged and outcomes, disputes and resolutions, payment and variations.

A20 Daily records

The Contractor shall keep daily site records as required by the Employer and as specified herein. Daily records shall include, labour, plant, materials, rainfall, daily diary and the like.

A21 Payment certificates

Payment certificates shall be submitted to the Engineer, in the format required, for approval and final submission to the Employer on a monthly basis.

A22 FEATURES REQUIRING SPECIAL ATTENTION**A22.1 Security**

The Contractor is responsible to provide his own security on site, as he deems necessary. The Employer shall not be held responsible for any loss or damage suffered by the

Contractor, his plant, equipment, materials, subcontractors or employees as a result of a security incident of any nature.

A 22.2 Community liaison and community relations

The Contractor will be required to employ a community liaison officer for each section of the works for the duration of the construction activities, taking place within such area. The community liaison officer is to be appointed in consultation with the relevant ward councillor.

A 22.3 Notices and warning to the public

The Contractor must provide written notice to all consumers affected by the construction activities. The written notice shall outline the:

- a) nature of the works;
- b) expected inconvenience / disruption that the consumers can expect;
- c) timeframes for construction; and
- d) contact details in case of problems encountered.

A 22.4 Causes for rejection

Causes for rejection of the works shall include but is not limited to:

- a) incorrect grades and crossfalls;
- b) poor kerbing alignment and broken kerbs
- c) incorrect vertical and horizontal alignments
- d) layerworks and surfacing fail density and other prescribed tests
- e) Incorrect pipe grades, water infiltration at joints, poor workmanship to kerb inlets, manholes, etc.

C3.4.1 PART B: PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS**Notes to the tenderer****C3.4.1 VARIATIONS AND ADDITIONS TO SABS 1200 STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS**

The following variations and additions to the SABS 1200 Standardized Specifications referred to shall apply to this Contract.

The prefix "PS" indicates an amendment to SABS 1200. The prefix "PSA" indicates an amendment to SABS 1200 A, "PSDB" to SABS 1200 DB and so on.

The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SABS 1200 to which the variation or addition thereto applies.

An asterisk (*) placed next to a PS Subclause number denotes the inclusion of an additional Subclause for which no equivalent appears in SABS 1200.

The terms "project specification" or "Portion 2 of the project specification" appearing in any of the SABS 1200 Standardized specifications shall be replaced with the term "Scope of Work".

The term "Scope of Work" shall mean Part 3 of The Contract.

Further to the above it should be noted that where in a specific Standardized Specification reference is made to a Subclause in another Standardized Specification, any amendment or addition to the Subclause referred to, as provided for in the Specification, shall apply. The aforementioned shall also apply with respect to Clauses referred to in a Particular Specification.

The variations and additions to the SANS 1200 Standardized Specifications follows herewith:

PSA GENERAL

PSA 1 SCOPE

Replace the contents of Clause 1.1, including the notes, with the following:

“1.1 This specification covers requirements, principles and responsibilities of a general nature which are generally applicable to civil engineering construction and building works contracts, as well as the requirements for the Contractor’s establishment on the Site.”

PSA 2 INTERPRETATIONS

PSA 2.3 DEFINITIONS

In the opening phrase, insert the words: “the definitions given in the Conditions of Contract and” between the words “specification” and “the following”.

a) General

Add the following definitions:

“General Conditions / Conditions of Contract. The General Conditions of Contract specified for use with this Contract as amended in the Contract Data.

Specified As specified in the Standardized Specifications, the Drawings or the Scope of Work. “Specifications” shall have the corresponding meaning.”

c) Measurement and payment

Replace the definitions for “Fixed charge”, “Time-related charge” and “Value-related charge” with the following:

“Fixed charge. A charge that is not subject to adjustment on account of variations in the value of the Contract Price or the time allowed in the Contract for the completion of the work.

Time-related charge. A charge, the amount of which varies in accordance with the Time for Completion of the Works, adjusted in accordance with the provisions of the Contract.

Value-related charge. A charge, the amount of which varies pro rata with the final value of the measured work executed and valued in accordance with the provisions of the Contract.”

PSA 2.4 ABBREVIATIONS

a) Abbreviations relating to standard documents

Add the following abbreviation:

“CKS: SABS Co-ordinating Specification.”

PSA 3 MATERIALS

PSA 3.1 QUALITY

Where applicable, materials shall bear an official standardization mark.

Add the following:

"Where proprietary materials are specified, it is to indicate the quality or type of materials or articles required, and where the terms “or other approved” or “or approved equivalent” are used in connection with proprietary materials or articles, it is to be understood that the approval shall be at the sole discretion of the Engineer."

“PSA 3.3* ORDERING OF MATERIALS

The quantities set out in the Bill of Quantities have been carefully determined from calculations based on data available at the time of its compilation, but are to be considered as approximate quantities only. Before ordering materials of any kind the Contractor shall be solely responsible for determining, from the Drawings issued or approved by the Engineer for construction purposes, the actual quantities of materials required for the execution of the Works. No liability or responsibility whatsoever shall be attached to the Employer or the Engineer in respect of materials ordered by the Contractor except when ordered in accordance with the Drawings issued or approved by the Engineer for construction purposes."

PSA 4 PLANT

PSA 4.1 SILENCING OF PLANT

Replace the contents of Clause 4.1 with the following:

“The Contractor’s attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Occupational Health and Safety Act (Act No. 85 of 1993) as amended.

The Contractor shall at all times and at its own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other Plant which would otherwise cause a noise level in excess of that specified in the said regulations.

Where appropriate, the Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations."

PSA 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

Add the following at the end of the first paragraph of Clause 4.2:

"The Contractor's buildings, sheds and other facilities erected or utilised on the Site for the purposes of the Contract shall be fenced off and shall contain all offices, stores, workshops, testing laboratories, toilet facilities, etc. as may be required by the Contractor. The facilities shall always be kept in a neat and orderly condition.

A suitable and dedicated material storage container as well as a furnished office shall be provided for the exclusive and sole use of the Micro Enterprise (SMME's) Subcontractors.

No personnel may reside on the Site. Only night-watchmen may be on the Site after hours

The Contractor shall provide on the Site and in close proximity to the actual locations where the work is being executed, one toilet per 15 workmen, which toilets shall be effectively screened from public view and their use enforced. Such toilets shall be relocated from time to time as the location of the work being executed changes, so as to ensure that easy access to the toilets is maintained.

The Contractor shall, where applicable, make all necessary arrangements and pay for the removal of night soil."

PSA 5 CONSTRUCTION

PSA 5.1 SURVEY

PSA 5.1.1 Setting out of the Works

The installed benchmarks and erf boundary pegs shall be used by the Contractor for setting out the works.

Add the following paragraph:

"The Contractor shall be required to check and verify, prior to commencement of any construction work, all benchmarks and boundary reference pegs, as shown and detailed on the Drawings. Reference and benchmark pegs disturbed and/or removed during the construction period shall be replaced by a Professional Land Surveyor and the Contractor shall bear the cost of such

replacement. Payment to check and verify the reference and benchmark pegs will be made in terms of PSA 8.8.5."

PSA 5.1.2 Preservation and replacement of survey beacons and pegs subject to the Land Survey Act

Delete from the second sentence "Before the commencement "to" apparently in their correct positions" and replace with the following:

"Immediately on taking over the site, the Contractor, in consultation and liaison with the Engineer, shall search for all pegs and the Contractor shall compile a list of pegs that are apparently in their correct position."

Replace the third sentence of Clause 5.1.2 with the following:

"At completion of the Contract, the Contractor shall expose and mark all pegs that were listed at the commencement of the construction as being in order and the Contractor shall arrange with a registered Land Surveyor the replacement of pegs that have become disturbed or damaged. The Contractor shall, as a precedent to the issue of the Certificate of Completion, provide to the Engineer, a certificate from the Registered Land Surveyor, certifying that all the pegs listed at the commencement of construction in accordance with the provisions of this Clause, have been checked and that those found to have been disturbed, damaged or destroyed have been replaced in their correct positions, all in accordance with the provisions of the said Act.

The costs of replacement and certification as aforesaid shall be entirely for the Contractor's account, provided always that the Contractor shall not be held liable for the cost of replacement of pegs which:

- (a) cannot reasonably be re-established in their original positions by reason of the finished dimensions of the Permanent Works; and
- (b) the Contractor can prove beyond reasonable doubt and to the satisfaction of the Engineer, were disturbed, damaged or destroyed by others beyond its control, and
- (c) were in close proximity to the work and which would unavoidably be removed, subject to the Engineer's approval being given to remove such pegs."

PSA 5.2 WATCHING, BARRICADING AND LIGHTING AND TRAFFIC CROSSINGS

Add the following:

"The Contractor shall comply in all aspects with the requirements of the Occupational Health and Safety Act (Act 85 of 1993), refer also PSA 5.7, PSA 5.9 and PSA 5.10."

PSA 5.3 PROTECTION OF STRUCTURES

Replace: "Machinery and Occupational Safety Act, 1983, (Act No. 6 of 1983)" with: "Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), as amended," and insert the following after "(Act No. 27 of 1956)": "as amended".

PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Replace the heading and the contents of Clause 5.4 with the following:

"PSA 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES

PSA 5.4.1 Location of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent Contractor to be present on, under, over or within the Site.

Without in any way limiting its liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Engineer, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where it intends to work.

Neither the Employer nor the Engineer offer any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the requirements of Clauses 4.4 and 5.1.2.2 of SABS 1200 D (as amended) shall also apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the Site.

All services, the positions of which have been determined as aforesaid at critical points, shall henceforth be designated as "Known Services" and their positions shall be indicated by the Contractor on a separate set of Drawings, a copy of which shall be furnished to the Engineer without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the Site, it shall henceforth be deemed to be a "Known Service" and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the Site shall apply. The Contractor shall notify the Engineer immediately should any such service be encountered or discovered on the Site.

Whilst it is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to:

- (a) Known Services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognisance being taken of such deviations in line and level which may reasonably be anticipated; and
- (b) any other service which ought reasonably to have been a Known Service in accordance with the provisions of this Clause;

as well as for consequential damage, whether caused directly by the Contractor's operations or by the lack of proper protection ; provided always that the Contractor will not be held liable in respect of damages occurring to services not being Known Services.

No separate payment will be made to the Contractor in respect of any costs incurred in preparing and submitting to the Engineer, the Drawings as aforesaid and these costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor's in respect of exposing services at the positions agreed by the Engineer and as described above will be made under the payment items (if any) as may be provided therefore in the respective sections of the Specifications pertaining to the type of work involved.

PSA 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising there from to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

PSA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Engineer, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Engineer, who will either make arrangements for such work to be executed by the owner of the service, or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Engineer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor, unless approved by the Engineer.

The Employer will accept no liability for damages due to a delay in having alterations or repairs effected by the respective service owners. The Contractor shall provide all reasonable opportunity, access and assistance to persons carrying out alterations or repairs of existing services."

PSA 5.7 SAFETY

Replace the contents of subclause 5.7 with the following:

"Pursuant to the provisions of the Conditions of Contract, and without in any way limiting the Contractor's obligations there under, the Contractor shall at his own expense (except only where specific provision (if any) is made in the Contract for the reimbursement to the Contractor in respect of particular items), provide the following:

- (a) Provide to its Employees on the site of the works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational Health and Safety Act (Act No 85 of 1993) and associated Regulations as amended (hereinafter referred to as the Act) at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times; and
- (b) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public; and
- (c) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Act at all times; and
- (d) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the works; and

- (e) Full compliance with all other requirements pertaining to safety as may be specified in the Contract.

The Employer shall in terms of the Regulations make such inspections on the site, as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the requirements of the Act. For this purpose, the Contractor shall grant full access to the site of all parts of the site and shall co-operate fully in such inspections and shall make available for inspection all such documents and records as the Employer's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Employer's attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of Clause 5.11 of the Conditions of Contract, be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Employer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of Clause 5.13 of the Conditions of Contract should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute grounds for the Engineer to act in terms of Clause 9.12 of the Conditions of Contract and for the Employer to terminate the Contract in accordance with the further provisions of the said Clause 55."

"PSA 5.9* MAINTAINING SERVICES IN USE

The Contractor shall take note that he shall not cut off any service in use without the prior approval of the Engineer and the knowledge of the residents. Further, no existing services in use shall remain cut off for more than 8 hours or overnight.

Failure on the part of the Contractor to comply with any of the above provisions will constitute sufficient reason for the Engineer to stop the works until the situation has been remedied, or should he deem it necessary, arrange for the situation to be remedied at the Contractor's cost.

No direct payment will be made for the cost of maintaining services in use. Payment will be deemed to be covered by the rates and sums tendered and paid for the various items of work included under the Contract."

"PSA 5.10* DEALING WITH AND ACCOMMODATING TRAFFIC

The Contractor shall take note that the existing roads and pedestrian walkways within the Site, shall remain operational throughout the contract period as set out earlier in the document. To this end the Contractor shall provide and maintain all temporary fences, security, barriers, kerb ramps, signs, markings, flagmen, drums, lighting, personnel and all other incidentals necessary to ensure safe and easy passage of all traffic.

Traffic accommodation and signage shall be erected and maintained by the Contractor and the number and layout of the traffic signs shall comply with the South African Development Community's South African Road Traffic Signs Manual, Volume 2 – Chapter 13, Roadworks Signing.

Traffic signs shall have a yellow background with either a red / black border.

No direct payment will be made for the cost of dealing with and accommodating traffic. Payment will be deemed to be covered by the rates and sums tendered and paid for the various items of work included under the contract. Further, the provision of PSA 5.2 shall apply."

"PSA 5.11* SITE MEETINGS

The Contractor or its authorised agent will be required to attend regular site meetings, which shall normally be held once a month on dates and at times determined by the Engineer, but in any case whenever reasonably required by the Engineer. Unless otherwise indicated in the Contract or instructed by the Engineer, such meetings shall be held at the Contractor's offices on the Site. At such monthly meetings, matters such as general progress on the Works, quality of work, problems, claims, payments, and safety etc, shall be discussed, but not matters concerning the day-to-day running of the Contract.

"PSA 5.12* PROVIDING ACCESS TO ERVEN AND PROPERTIES

Access to erven and properties along the route of trenches and roads shall be provided by the Contractor at all times as indicated earlier in the document. To this end suitable crossings shall be constructed where required.

Temporary crossings shall be in the form of portable bridges, temporary backfill or other approved means and shall be capable of permitting the safe passage of all vehicles and pedestrians. The Contractor shall also be responsible for maintaining crossings and for removing same when they are no longer required.

If as a result of restricted road reserve widths and the nature of the Works the construction of bypasses is not feasible, construction shall be carried out under traffic in order to provide access to the properties.

The Contractor may, with the approval of the Engineer, arrange with the occupiers of the affected properties to temporarily close off a portion of a road, footpath entrance, property access road or other access, provided that the Contractor shall give due notice of the intended closure and its probable duration to the occupiers and shall as punctually as possible re-open the route at the prescribed time. Where possible, roads shall be made safe and re-opened to traffic overnight. Any such closure shall be an arrangement between the Contractor and the occupiers and shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs and drums shall be provided by the Contractor to suit the specific conditions.

No direct payment will be made for the cost of providing access. Payment will be deemed to be covered by the rates and sums tendered and paid for the various items of work included under the Contract.”

“PSA 5.13* ACCOMMODATION OF OTHER CONTRACTORS

The Contractor shall be required to accommodate other contractors on the Site of the Works during the entire Contract period.

Adequate access to the site of their works shall be given the contractors at all times.

No direct payment will be made for the cost of providing adequate access and accommodating the stated contractors on the Site of the Works, as well as the cost of any inconvenience or disruption experienced in attending to the aforementioned. Payment shall be deemed to be covered by the rates and sums tendered and paid for the various items of work included under the Contract.

“PSA 5.14* ENVIRONMENTAL MANAGEMENT PLAN, RECORD OF DECISION AND SPECIFICATIONS

The Contractor shall be required to comply with and assume responsibility for compliance with the National Environmental Management Act, (Act 107 of 1998) in respect of the execution and completion of the Works.

Non-compliance in any way whatsoever will be adequate reason for the suspension of the Works.

No extension of time will be considered for delays due to non-compliance with the abovementioned.

No direct payment will be made for the cost of complying with the above-mentioned or disruption experienced in attending to the aforementioned. Payment shall be deemed to be covered by the rates and sums tendered and paid for the various items of work included under the Contract. (Refer also to the contents of Clause 4.3 of the Conditions of Contract.”



TENDER NO: MLM 11/2020/21

PSA 6 TOLERANCES**"PSA 6.4* USE OF TOLERANCES**

No guarantee is given that the full specified tolerances will be available independently of each other, and the Contractor is cautioned that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.

Except where the contrary is specified, or when clearly not applicable, all quantities for measurement and payment shall be determined from the 'authorized' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the specified tolerances. Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorized' dimensions.

If the work is constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the calculation of quantities will be based on the 'authorised' dimensions, regardless of the actual dimensions to which the work has been constructed.

When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be calculated based on the actual dimensions as constructed."

PSA 7 TESTING**PSA 7.1 PRINCIPLES****PSA 7.1.2 Standard of Finished Work Not to Specification**

Insert the words "or checks by an approved laboratory ..." after the words "Where the Engineer's checks ..." in the first line of Clause 7.1.2.

PSA 7.2 APPROVED LABORATORIES

Replace the contents of Clause 7.2 with the following:

"Unless otherwise specified in the relevant specification or elsewhere in the Scope of Work, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Engineer of the quality of materials used and/or workmanship achieved, may be carried out:

- (a) any testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract;
- (b) any testing laboratory owned, managed or operated by the Employer or the Engineer;
- (c) any testing laboratory established and operated on the Site by or on behalf of the Employer or the Engineer;
- (a) any testing laboratory designated by the Engineer.”

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1 MEASUREMENT

PSA 8.1.1 Method of measurement, all sections of the Schedule

Delete the words "and South West Africa".

PSA 8.1.2 Preliminary and General item or section

PSA 8.1.2.1 Contents

Replace the contents of item (c) with the following:

"The 'duration of construction' applicable to a time-related item shall be the tendered contract period for the total works, plus as applicable, the Civil Engineering Industry Holiday (Dec / Jan) and all gazetted public holidays for the Civil Engineering Industry."

PSA 8.1.2.2 Tendered sums

Replace the contents of this Sub-Clause with the following:

"Except only where specific provision is made in the Specifications and/or the Bill of Quantities for separate compensation for any of these items, the Contractor's tendered sums under items PSA 8.3.1 and PSA 8.4.1 shall collectively cover all charges for:

- risks, costs and obligations in terms of the Conditions of Contract and of this standardized specification; and
- head-office and site overheads and supervision; and
- profit and financing costs; and
- expenses of a general nature not specifically related to any item or items of the permanent or temporary work; and
- providing such facilities on site as may be required by the Contractor for the proper performance of the Contract and for its personnel, including, but without limitation, providing offices, storage facilities, workshops, ablutions, services such as water, electricity, sewage and rubbish disposal, access roads and all other facilities required, as well as for the maintenance and removal on completion of the works of these facilities and cleaning-up of the site of the Contractor's establishment and reinstatement to not less than its original condition, and
- providing the facilities for the Engineer and his staff as specified in the Contract and their removal from the site on completion of the Contract."

PSA 8.2 PAYMENT

PSA 8.2.2 Time-related items

Replace the contents of Clause 8.2.2 with the following:

"Subject to the provisions of sub clauses 8.2.3 and 8.2.4, payment under item 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum tendered for the item by the tendered Contract period in months, provided always that the total of the monthly amounts so paid for the item is not out of proportion to the value of the progress of the Works as a whole.

Should the Engineer grant an extension of time for the completion of the total works, the Contractor will be entitled to an increase in the sums tendered for time-related items, which increase shall be in the same proportion to the original tendered sums, as the extension of time is to the duration of construction as defined in PSA 8.1.2.1. The Contractor shall however note that the aforementioned will not apply to extensions of time granted in terms of PSA 8.4.6.

Payment of such increased sums will be taken to be as full compensation for all additional preliminary and general costs, either time-related costs or fixed costs that result from the circumstances pertaining to the extension of time granted."

The payment to the Contractor for Time-Related Items shall be adjusted in accordance with the following formula in the event of the Contract being extended by means of a Variation Order:

Sum of Tendered amounts for Time Related Items x

Extension of Time authorised by Variation Order
Tender Contract period

For the purposes of applying this formula "Extension of Time" will exclude the Contractor's December / January close-down period, if applicable.

The abovementioned adjustment of the payment for Time-Related Items shall be made in the completion Payment Certificate and shall be the only payment for additional Time-Related costs irrespective of the actual period required to complete the Contract including its authorised extensions.

In the case of fixed price contracts, the amount by which the Time-Related Items is adjusted shall not be subject to the Contract Price Adjustment formula. Similarly, in the case of contracts subject to Contract Price Adjustment the amount by which the time-related items are adjusted shall be subject to the Contract Price Adjustment formula."

PSA 8.3 SCHEDULED FIXED-CHARGE AND VALUE RELATED ITEMS

PSA 8.3.1 Contractual requirements

Add the following:

"The sum tendered shall cover all costs incurred in complying with the requirements of the Conditions of Contract, the Scope of Work as well as the fixed costs applicable to the obligations and requirements applicable to the Micro Enterprises Subcontract work as detailed under C3.3: Procurement and C3.5 Management of Part 3: Scope of Work, including the calling and evaluations of such tenders.

Where applicable in terms of the Contract, the sum tendered shall include for the cost of providing and maintaining the special risks insurance stipulated in the Conditions of Contract."

PSA 8.3.2.1 Facilities for Engineer

Replace the contents of this Clause with the following:

"(a) Two Contract Nameboards Unit: Sum
(b) Engineers Offices Unit: Sum

The facilities provided shall comply with the applicable requirements of SABS 1200 AB and PSAB."

PSA 8.3.2.2 Facilities for Contractor

Notwithstanding the detail breakdown of items provided (items a to j), a single sum shall be tendered to cover all these items under the heading of "Facilities for Contractor" and shall include facilities for the Subcontractors.

PSA 8.3.3 Other Fixed-charged Obligations

Add the following:

"The sum tendered shall in addition cover the fixed costs of all obligations and requirements applicable to the subcontract work as detailed under C3.3: Procurement and C3.5 Management of Part 3: Scope of Work."

PSA 8.4 SCHEDULED TIME RELATED ITEMS

**PSA 8.4.1 Contractual requirements Unit:
Sum**

Add the following:

"The sum tendered shall cover all costs incurred in complying with the requirements of the Conditions of Contract, the Scope of Work as well as any time-related costs applicable to the obligations and requirements

applicable to the Subcontract work as detailed under C3.3: Procurement and C3.5 Management of Part 3: Scope of Work, including the calling and evaluations of such tenders.

Where applicable in terms of the Contract, the sum tendered shall include for the cost of providing and maintaining the special risks insurance stipulated in the Conditions of Contract.

The sum shall further cover all the time-related establishment costs and be the full compensation to the Contractor for:

- (i) The maintenance of his whole organisation as established for this Contract.
- (ii) The maintenance of all insurances, indemnities and guarantees required in terms of the Conditions of Contract, where applicable.
- (iii) Compliance with all general conditions and requirements which are not specifically measured elsewhere for payment in these Contract Documents.

Payment shall be made monthly in compliance with the method laid down in PSA 8.2.2.

The Contractor will not be paid Time-Related Preliminary and General Charges for any special non-working days, as stipulated in the Conditions of Contract, which shall be deemed to have been allowed for within his rates."

PSA 8.4.2.1 Facilities for Engineer

Replace the contents of this Clause with the following:

- "(a) Two Contract Nameboards Unit: Sum
- (b) engineers Offices.....Unit:Sum

The facilities provided shall comply with the applicable requirements of SABS 1200 AB and PSAB.

Payment for the provision of survey labourers will be made pro-rata the period the labourers are provided."

PSA 8.4.2.2 Facilities for Contractor

Notwithstanding the detail breakdown of items provided (items a to j), a single sum shall be tendered to cover all these items under the heading of "Facilities for Contractor" and shall include facilities for the Subcontractors.

PSA 8.4.2.3 Replace the words "periods stated" in the second line of this Clause with the following:

"duration of construction as defined in PSA 8.1.2.1".

PSA 8.4.5 Other Time-related Obligations

Add the following:

"The sum tendered shall in addition cover the time-related costs of all obligations and requirements applicable to the subcontract work as detailed under C3.3 Procurement and C3.5 Management of Part 3: Scope of Work."

"PSA 8.4.6* Compensation in terms of Subclause 5.12.2.4 and Clause 9.1 of the Conditions of Contract for delays incurred:

- (a) Plant Unit: Sum per working day
- (b) Labour Unit: Sum per working day
- (c) Supervision Unit: Sum per working day
- (d) Other services, facilities etc. not covered by
 (a), (b) and (c) Unit: Sum per working day

The sum tendered for each item shall cover the full and final standing cost per day of delaying the specified resource or facility and no additional compensation shall apply, notwithstanding any provisions to the contrary in the contract documents, or in respect of any extension of time granted in relation to the circumstances described in Subclauses 5.12.2.4 and 9.1 of the Conditions of Contract.

For the purposes of calculating the total delay, a working week shall be held to consist of five working days and a working day 9 hours.

Payment for the partial standing of any of the scheduled resources for a day or part thereof, or the standing of a complete resource for a part day, will be made pro-rata in proportion to an appropriate factor assessed by the Engineer.

The amount by which compensation for delays is adjusted shall be subject to the contract price adjustment formula as defined in the Conditions of Contract.

This payment item shall only apply to delays which in the opinion of the Engineer are due to the circumstances described in Subclauses 5.12.2.4

and 9.1 of the Conditions of Contract. No Payment will be made for any salary related or other internally caused strikes. The cost of delays incurred for all other circumstances shall be treated as provided for in the Conditions of Contract.

The provision of this Clause shall in no way prejudice the right of either the Employer or the Contractor to determine the Contract in terms of the provisions of Clause 9.1 of the Conditions of Contract.

The Contractor shall take note that no payment will be considered for any additional cost incurred in protecting his plant and site establishment, as well as for costs incurred in respect of damage to constructional plant and equipment."

PSA 8.5 SUMS STATED PROVISIONALLY BY THE ENGINEER

Replace the contents of Clause 8.5 with the following:

"PSA 8.5.1 Works Executed by the Contractor Unit: Prov Sum

Note that these Provisional Sums are allocated for anticipated work that must be executed by the Contractor and which, at tender stage, could not have been determined or quantified. Refer Clause 6.6 of the Conditions of Contract.

The work identified and stated will not constitute a variation in terms of the Contract although the value of such work will be determined in accordance with the principals pertaining to the value of a Variation Order as set out in Clause 6.4 of the Conditions of Contract.

The Contractor will be reimbursed in substitution of the Provisional Sums (if any) allowed in the Bill of Quantities for work to be executed by the Contractor, in the amounts determined in accordance with the provisions of Clauses 6.4 and 6.6.1 of the Conditions of Contract.

The description of the payment item in the Bill of Quantities will specify and dictate the work to be executed."

"PSA 8.5.2* Additional testing required by the EngineerUnit : Provisional Sum

The provisional sum provided in the Schedule of Quantities is to cover the payment of the SANAS registered soils Laboratory to conduct CBR, MOD's and Atterberg Limit tests as directed by the Engineer."

PSA 8.5.3* Overhead, charges, profit etc on item PSA 8.5.2 Unit : %

The percentage tendered shall be paid to the Contractor on the actual amount paid to the soils laboratory and shall cover the following:

- all costs involved in rectifying and arranging the tests with the laboratory.
- setting out the positions for the tests to be taken by the laboratory as indicated by the Engineer.
- making good all test holes with subbase.
- the cost of all overheads, charges and profits

“PSA 8.6 PRIME COST ITEMS

PSA 8.6.1 Prime Cost Sums

- (a) Description of Item to which Prime Cost Sum Applies Unit: PC Sum
- (b) Charge Required by Contractor on Sub-item (a) above Unit: %

Refer Clause 6.6 of the Conditions of Contract.

Sub-items (a) and (b) will be provided in the Bill of Quantities for each different item to which a Prime Cost Sum applies.

The Contractor shall be reimbursed under sub-item(s) (a) in substitution of the respective Prime Cost Sums included in the Contract, the actual price(s) paid or payable by him in respect of the goods, materials or services supplied, but excluding any charges for the Contractor's labour, profit, carriage, establishment or other charges related to such goods, services or materials, all in accordance with the provisions of Clause 6.6.2 of the Conditions of Contract.

The description of the payment item in the Bill of Quantities will specify and dictate the work to be executed.

The Contractor shall be paid under sub-item (b), the respective percentage, as stated by the Contractor in its Tender, of the amount certified by the Engineer for payment under the related sub-item (a). The percentages tendered by the Contractor for each respective sub-item (b) included in the Bill of Quantities shall be deemed to in full and final compensation to the Contractor in respect of any charge by the Contractor for labour, carriage profit, establishment and for any other charges related to the goods, services or materials supplied under the related sub-item (a).

If the Contractor shall have omitted within its Tender to insert a tendered percentage under sub-item (b), or tendered a zero percentage, the Contractor's tendered rate for sub-item (b) shall be deemed to be zero and the Contractor shall not be entitled to any payment under sub-item (b).

Only payments for successful test will be made under the Prime Cost Sum provided in the Bill of Quantities for acceptance control testing by the Engineer.

The Contractor is responsible for the cost of all process control testing. Payment in terms of the above will only be made for acceptance control testing specifically ordered and specified by the Engineer."

"PSA 8.7 DAYWORK

Add the following:

"To ensure that the plant is achieving a reasonable output of work, the Engineer's personnel will randomly monitor and measure work produced. Poor performance of any item of plant will be noted by the Engineer and certain reductions in payment may be applied.

Furthermore, should the performance of a machine be poor, or persistently break down, the Engineer may order that it be replaced, all at the cost of the Contractor."

PSA 8.8 TEMPORARY WORKS

PSA 8.8.2 Dealing with Traffic

Delete the entire Clause. The provision of PSA 5.10 shall apply. Refer also PSA 5.2, PSA 5.3, PSA 5.7 and PSA 5.12"

PSA 8.8.4 Existing services

Replace the heading of paragraph (c) with the following:

"c) Excavate by hand in soft material to expose existing services Unit: m³

Add the following:

"The rate tendered for (c) shall further cover the cost of backfilling the excavation with excavated material compacted to 90% of modified AASHTO maximum density, loading, transporting within a free haul distance of 0,5 km and disposing of surplus material as directed, keeping the excavation safe, dealing with water, protecting the exposed services, and any other operation necessary to complete the work.

No distinction will be made between the various types of services to be exposed, or the depths to which excavations are taken.

Excavation in excess of that authorised will not be measured for payment."

PSA 8.8.5 Cost of survey in terms of Land Survey Act

Replace the contents of subclause 8.8.5 with the following:

"(a) Locate, record and protect erf boundary and survey pegs . Unit: Sum

The sum tendered shall cover the cost of complying with the requirements of 5.1.2 and PSA 5.1.2 as well as the cost of exposing and marking the pegs on completion of the Works.

(b) Replace pegs recorded as missing at commencement of Contract as well as pegs

removed in terms of PSA 5.1.2 (a), (b) and (c)..... Unit: No

The rate tendered shall cover the cost of arranging for a registered surveyor to replace the pegs, as well as the payment of the surveyor. The Contractor shall however note that pegs recorded as missing at the start of the work and subsequently found by the surveyor to be in their correct position will not be measured for payment.

NOTE:

The cost to set out the Works in terms of 5.1.1 and PSA 5.1.1 shall be deemed to be covered by the sums tendered for other obligations under Subclauses 8.3.3 and 8.4.5."

"PSA 8.8.7* Compliance with the occupational health and safety act (Act 85 of 1993) and all relevant and applicable regulations, especially the construction regulations, 2014 as promulgated on 7 February 2014 under Section 43 of the occupational health and safety act (Act 85 of 1993), as amended from time to time, for the duration of the contract

(a) Contractor..... Unit: Sum

(b) Subcontractors (own) / Micro Enterprises (smme's)..... Unit: Sum

The tendered sums shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and the Construction Regulations 2014 at all times, as described in the Scope of Work and Employer's health and safety specification (Refer Particular Specification PA). The successful tenderer shall provide the Engineer with a complete breakdown of each tendered sum, if so required.

The Contractor shall note that all obligations contained in the Act, Regulations and Employers health and safety specification shall be included in this item. No additional claims will be considered; neither will an extension of time be considered for delays due to non-compliance with the Contractor's health and safety plan.

The sums will be paid to the Contractor in equal monthly amounts.

Refer also PSA 5.2, PSA 5.3, PSA 5.7 PSA 5.10, PSA 5.12, PSA 5.13 and PSA 5.14"

PSAB ENGINEER'S OFFICE

PSAB 3 MATERIALS

PSAB 3.1 NAMEBOARDS

Notwithstanding the provisions of this Sub-Clause, two Contract Nameboards shall be provided. The nameboards shall further comply with regard to size, painting, decorating and detail as detailed on the drawings.

PSAB 3.2 OFFICE BUILDING(S)

Add the following after "Engineer." in the second last sentence:

"The Engineer will require an office, as follows :

- o At least 15 m2
- o One desk
- o 3 chairs
- o Two lights
- o Air conditioner
- o 2 electric plugs
- o One car port"

PSAB 4 PLANT

PSAB 4.1 TELEPHONE

A telephone for the Engineer's use is not required.

PSAB 5 CONSTRUCTION

PSAB 5.1 NAMEBOARDS

Replace the contents of this Clause with the following:

"The Contract Nameboard shall be erected within fourteen days of the Commencement Date and shall be placed where ordered. Any damage to this board shall be repaired within seven days of a written instruction issued by the Engineer.

Further to the above the Contractor will not be allowed to erect more than two of his own nameboards in the area of the Works. The position of these shall be agreed to by the Engineer. No payment will be made for the supply, erection or maintenance of the Contractor's nameboards and the Engineer reserves the right to order the removal of the nameboards if not properly maintained.

All nameboards shall be removed within 7 days of the issue of the "Certificate of Completion".

PSAB 5.4 TELEPHONE

Delete the entire contents of this Clause.

PSAB 5.5 SURVEY ASSISTANTS

A survey assistant will be required from time to time to assist the Engineer's Representative.

PSAB 8 MEASUREMENT AND PAYMENT

Delete the contents of this Clause. The appropriate measurement and payment clauses have been included under Clause 8 of SABS 1200 A and PSA.

PSC SITE CLEARANCE**PSC 3 MATERIALS****PSC 3.1 DISPOSAL OF MATERIAL**

Delete the first two sentences of this clause and replace with:

“Debris arising from clearing and grubbing operations or from the demolition of structures on site shall be removed by the Contractor and disposed of at the St Francis tip site or any other alternate approved tip site.

The rates tendered for the various items under this section shall further cover the cost of loading, transporting and disposing of material at the approved tip site as well as for any fees payable.”

PSC 5 CONSTRUCTION**PSC 5.3 CLEARING**

Add the following after subclause f):

“g) The clearing, breaking up, removal and spoiling of all concrete, brick-paved or bitumen surfaced slabs, walkways and roadways as well as any obstructions, concrete edging, slabs, playground equipment, bollards and other unwanted debris within the road verges and park areas.”

PSC 5.5 RECLEARING OF VEGETATION

Add the following:

“Except if otherwise agreed, where areas have to be re-cleared on the written instruction of the Engineer, such re-clearing shall be carried out at the Contractor’s own cost and the Contractor is advised therefore, not to clear areas at such an early stage that re-clearing may become necessary.”

PSC 8 MEASUREMENT AND PAYMENT**PSC 8.1 BASIC PRINCIPLES**

Add the following:

“The thickness layer that will unavoidably be stripped during clearing of vegetation will be taken as 100mm.

This implies that levels used in earthworks quantity calculations shall be 100mm lower than the original levels excluding stripping of topsoil to stockpile, where applicable.”

Levels to be used for earthworks quantity calculations will be surveyed once the clearing operations have been completed."

PSC 8.2 PAYMENT

PSC 8.2.1 Clear and grub

Replace the first line with the following:

"The areas designated by the Engineer to be cleared and grubbed will be measured in square metre or to the nearest square metre or,"

Delete "(except where 8.2.9 is applicable)" in the seventh line of this Clause.

Add the following:

"The tendered rate shall also cover the cost of loading, transporting and disposing of all rubble, spoil and other unwanted debris encountered in the parks, road reserves or along service routes, irrespective of distance. (Refer also PSC 8.1)"

PSC 8.2.8 Demolish and remove structures / buildings and dismantle steelwork, etc.

Add the following:

"The sum tendered shall cover all costs for the provision of labour, equipment and incidentals necessary to demolish, remove, transport and dispose of the scheduled structures / buildings, including foundations, at an approved tip site."

PSC 8.2.9 Transport material and debris to unspecified sites and dump

Delete this subclause.

Notwithstanding the fact that a disposal site will not be designated by the Engineer, the transportation of all material and debris generated by any clearing and grubbing operations, will not be measured for payment."

"PSC 8.2.11* Remove and dispose of existing concrete kerbing and channelling combination.....Unit: m

The rate tendered shall cover the provision of all labour and equipment necessary to remove, transport and dispose of existing concrete kerbing and channelling combination, including backing and screed, at an approved tip site, regardless of volume and the type kerbing.

PSC 8.2.12* Remove and dispose of existing concrete kerbing.....Unit: m

The rate tendered shall cover the provision of all labour and equipment necessary to remove, transport and dispose of existing concrete kerbing,

including backing and screed, at an approved tip site, regardless of volume and the type kerbing.

PSC 8.2.13* Saw-cut asphalt surfacing.....Unit: m

The rate tendered shall cover the provision of all labour and equipment necessary to saw-cut asphalt surfacing to a minimum depth of 50 mm.

PSC 8.2.14* Remove and dispose of existing asphalt and bituminous surfacing Unit: m²

The rate tendered shall cover the provision of all labour and equipment to remove, transport and dispose of all existing asphalt and bituminous surfacing at the approved tip site (saw-cutting will be compensated for under item PSC 8.2.13).

Where existing bituminous sidewalks are retained with concrete edge strips, the rate under this item shall include for the removal and spoiling of such.

No separate payment will be made under PSC 8.2.12.

PSC 8.2.15* Saw-cut concrete in roadway / sidewalksUnit: m

The rate tendered shall cover the provision of all labour and equipment to saw-cut concrete surfacing to a minimum depth of 250 mm.

PSC 8.2.16* Remove and dispose of concrete surfacing (up to a thickness of 250 mm)..... Unit: m²

The tendered rate shall cover the provision of all labour and equipment to remove, transport and dispose of concrete surfacing at the approved tip site (saw-cutting will be compensated for under item PSC 8.2.16).

PSC 8.2.17* Remove and dispose of existing brickwork (up to a thickness of 300 mm)..... Unit: m²

The sum tendered shall cover the provision of all labour and equipment to remove on the instruction of the Engineer, transport and dispose of existing brickwork at the approved tip site.

The rate shall be based on brickwork with a wall thickness of 300 mm."

PSD EARTHWORKS**PSD 2 INTERPRETATIONS****PSD 2.1 SUPPORTING SPECIFICATIONS**

Replace Clause 2.1.2 with the following:

"PSD 2.1.2: Any of the other SABS 1200 Specifications or Particular Specifications may form part of the Contract Documents."

PSD 2.3 DEFINITIONS

Replace the word and the definition for "borrow" with the following:

"Borrow material: Material, other than material obtained from excavations required for the Works, obtained from sources such as borrow pits or the authorised widening of excavations. 'Borrow' shall have a corresponding meaning."

Replace the definition for "specified density" with the following:

"Specified density: The specified dry density expressed as a percentage of modified AASHTO dry density."

Replace the definition for "stockpile" with the following:

"Stockpile (verb): The process of selecting and, when necessary, loading, transporting and off-loading material in a designated area for later use for a specific purpose."

Add the following definitions:

"Commercial Source: A source of material provided by the Contractor, not the Employer, and including any borrow pit, provided by the Contractor."

Fill: An embankment or terrace constructed of material obtained from excavations or borrow pits.

Fill (material): Material used for the construction of an embankment or terrace.

Roadbed: The natural in situ material on which the fill, or in the absence of fill, the pavement layers, are constructed."

PSD 3 MATERIALS**PSD 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES****PSD 3.1.1 Method of Classifying**

Add the following:

"The classification of material other than 'soft excavation' shall be agreed upon before excavation may commence.

The Contractor shall immediately inform the Engineer if and when the nature of the material being excavated changes to such an extent that a new classification is warranted for further excavation. Failure on the part of the Contractor to advise the Engineer in good time shall entitle the Engineer to reclassify, at his discretion, such excavated material."

PSD 3.1.2 Classes of excavation

Notwithstanding the provisions of this subclause no distinction will be made between soft and intermediate excavation. All excavation, other than in hard rock and boulder excavation, shall for measurement and payment purposes be classified as soft excavation.

PSD 3.2.1 Material suitable for embankments and terraces

Add the following to paragraph (b):

Provided sufficient fines are mixed with the rock to ensure a dense compacted mass can be achieved.

PSD 3.2.3 Material Suitable for Backfill or Fill against Structures

Replace the contents of this sub-clause with the following:

"Material used for backfill behind structures shall generally be the material excavated, subject to the following conditions:

- (a) The material shall not contain an excessive number of stones retained on a 50 mm sieve; and
- (b) The material shall not contain large clay lumps that do not break up under the action of the compaction equipment; and
- (a) The liquid limit of the material shall not exceed 40, neither shall the PI exceed 18.
- (b) The minimum compaction shall be 93% of modified AASHTO maximum density."

PSD 3.3 SELECTION

PSD 3.3.1 General

Replace the second paragraph with the following:

"The Contractor shall deal selectively with materials from all excavations to ensure that no acceptable backfill or bedding material is contaminated by material unfit for use. No additional payment shall be made in this regard and all costs related to the above selection process shall be included in the applicable payment items. Should useful material be contaminated to such an extent that it is regarded as unfit for use the Contractor shall at his own cost dispose of this material and replace it with material of an equivalent standard to the acceptable in situ material."

PSD 3.3.2 Backfilling and embankments

With reference to the last line of this subclause the material to be used for backfill shall be either 15MPa/19 concrete or material complying with 3.2.2 compacted in 150mm layers to 90% of modified AASHTO maximum density, as ordered on site.

"PSD 3.3.3* Selection in Excavations and Borrow Pits

Approval of a borrow area for a certain purpose does not necessarily mean that all the material in that area is suitable for the specified purpose. It does mean that the borrow area contains some suitable material. The onus shall rest on the Contractor to ensure that only material that is indeed suitable is removed and used for the specified purpose.

When the Contractor has to select excavated material for a specific purpose, the above provisions relating to borrow areas shall apply *mutatis mutandis* to excavations.

The Contractor shall not waste or contaminate material that has been selected for a specific purpose."

PSD 4 PLANT

PSD 4.4 DETECTORS

Replace the contents of Clause 4.4 with the following:

"The Contractor shall, for the purposes of detecting and locating underground services in accordance with the provisions of Subclause 5.4 of SABS 1200 A and Subclause 5.1.2 of SABS 1200 D, at its own cost, provide and use detecting equipment which is suitable for the detection of underground cables and pipes."

PSD 5 CONSTRUCTION

PSD 5.1 PRECAUTIONS

PSD 5.1.1 Safety

PSD 5.1.1.1 Barricading and lighting

Replace "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" with "Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Construction Regulations 2014".

PSD 5.1.1.2 Safeguarding of excavations

Replace "Machinery and Occupational Safety Act" with "Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Construction Regulations 2014".

Add the following to paragraph (b) (1):

"Payment for supporting the sides of excavations and trenches shall be deemed to be included in the rates tendered for excavations. No separate payment will be made in this regard and it will be the Contractor's responsibility to ensure the safety and stability of all excavations.

Where trenches have to be widened to accommodate manholes, junction boxes, etc., the cost of supporting the vertical sides of such additional excavations will be deemed to be included in the rates tendered for excavation."

Add the following to paragraph (b) (2):

"The slope of the sides of an excavation or trench may never be steeper than 60° to the horizontal and all costs incurred to slope the sides of an excavation or trench will, irrespective of the angle of the slope, be deemed to be included in the rates quoted for excavation."

PSD 5.1.1.3 Explosives

Replace the contents of this subclause with the following:

"No overbreak allowance shall apply to this Contract.

The Contractor will generally be permitted to use explosives for breaking up hard material during excavations, for demolishing existing structures, and for other purposes where explosives are normally required, subject to the following conditions:

- (a) The Engineer may prohibit the use of explosives in cases where, in his opinion, the risk of injury to persons or damage to property or to adjoining structures is too high. Such action by the Engineer does not

entitle the Contractor to additional payment for having to resort to less economical methods of construction.

- (b) The Engineer's prior written approval shall be obtained for each and every blasting operation. This approval may be withheld if the Contractor does not use explosives responsibly and carefully.
- (c) The Contractor shall comply fully with the requirements of the Explosives Act, Act 83 of 1997 and all other legislation and regulations as may be applicable to blasting and the use of explosives.
- (d) Before blasting is undertaken, the Contractor shall satisfy the Engineer that he has established whether or not the insurers concerned require pre- and post-blasting inspections of buildings and structures within a certain radius of the proposed blasting.

Should such inspections be required, the Contractor shall, together with the Engineer and the insurer, examine and measure the buildings, houses or structures in the vicinity of the proposed blasting site and establish and record, together with the owner, lessee or occupier, the extent of any existing cracking or damage before the commencement of blasting operations.

- (e) When there is a possibility of damage to power and telephone lines or any other services or property, the Contractor shall adapt his method of blasting and the size of the charges and shall use adequate protective measures (e.g. cover-blasting, to reduce the risk of damage.
- (f) All accidents, injury to persons and animals and damage to property shall be reported to the Engineer in detail and in writing as soon as is practicable.
- (g) The Engineer shall be given 24 hours' notice by the Contractor before each blasting operation is carried out.
- (h) When blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits. The Contractor shall make good, at its own expense, any additional excavation necessitated by the shattering of rock in excess of any overbreak allowances specified in the Scope of Works or given on any drawing.

Notwithstanding the Contractor's compliance with the above provisions, the Contractor shall remain liable for any injury to persons and animals and loss of or damage to property occurring as a result of blasting operations."

PSD 5.1.2 Existing services

PSD 5.1.2.2 Detection, location and exposure

Replace the contents of Clause 5.1.2.2 with the following:

“The exposure by the Contractor of underground services, as required in terms of Clause 5.4 of SABS 1200 A and PSA 5.4 shall be carried out by careful hand excavation at such positions and to such dimensions as are agreed to by the Engineer.

Unless otherwise instructed or agreed by the Engineer, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted to the following densities:

(a) In roadways: 95% Mod AASHTO density; and

(b) In all other areas: 93% Mod AASHTO density.

Where hand excavations to expose underground services have to be carried out in roadways, the Contractor shall reinstate the road layerworks in accordance with the provisions of the Contract or as directed.

Payment in respect of the exposing of the services by means of hand excavation as described above shall be deemed to be covered by the rates tendered under items PSA 8.8.4(c).”

Payment in respect of the reinstatement of layerworks in road ways will be made in accordance with PSDB 8.3.6.1 and subclause 8.3.6.1 of SABS 1200 DB.”

PSD 5.1.2.3 Protection of cables

Replace Clause 5.1.2.3 with the following:

“5.1.2.3 Protection during Construction

Further to the requirements of PSA 5.4.2 and Subclause 5.4.2 of SABS 1200 A, major excavating equipment and other Plant shall not be operated dangerously close to Known Services. Where necessary, excavation in close proximity to Known Services shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. **No additional payment will apply to such more difficult work.**

Should any service not being a Known Service be discovered or encountered during the course of the Contract, the Contractor shall, in addition to complying with the requirements of Sub-clause 5.4.2 of SABS 1200 A (as amended), immediately notify the Engineer thereof and implement such measures as will prevent damage of such service or, if it was damaged in the course of discovery, will prevent and minimise the occurrence of any further damage occurring.”

PSD 5.1.2.4 Negligence

The Contractor shall not repair any service damaged. Where the damage is the result of the Contractor's negligence he shall bear all costs of the repairs undertaken by the owner, as well as the costs of associated damages."

PSD 5.1.6 Road traffic control

Delete the contents of Clause 5.1.6 and replace with the following:

"The provisions of PSA 5.10 shall apply as applicable. Where the work affects the operation or safety of public road traffic, vehicular and/or pedestrians in addition, to complying with the requirements of 5.1.1.1, the Contractor shall provide, erect and maintain traffic signs, personnel and equipment that conform to the requirements, layout and guidelines of the "South African Road Traffic Signs Manual", as well as the Site Manual entitled "Safety at Roadworks in Urban Areas" as published by the Department of Transport, in number and in layout, as shown in these manuals.

Where necessary and as shown in these manuals, warning lights, an adequate number of flagmen and appropriate barricades, clearly visible to oncoming traffic at all times of the day and night shall be provided. If steel drums are used for this purpose, they shall be ballasted with soil, sand or stones and the outside shall be whitewashed and provided with retro-reflective material (in the case of tape, of minimum width 10 mm), red on the left-hand side facing oncoming traffic and white on the right-hand side. The drums shall be maintained in a clean and effective condition and no stones shall be placed on them.

No direct payment will be made for the cost of providing and complying to the aforementioned. Payment will be deemed to be covered by the rates and sums tendered and paid for the various items of work included under the Contract."

PSD 5.2 METHODS AND PROCEDURES

PSD 5.2.1 Site preparation

PSD 5.2.1.2 Conservation of topsoil

Add the following:

"Topsoil ordered to be stripped and conserved for later use shall be stockpiled in a manageable heap where designated by the Engineer. The material together with such vegetation and small roots as may occur within the specified depth shall be stripped, loaded, transported to stockpile within a freehaul distance of 0,5 km, maintained and wetted (dust control) for the full duration of the Contract or until use."

PSD 5.2.2 Excavation**PSD 5.2.2.1 Excavation for General Earthworks and for Structures**

Add the following to paragraph (b):

"When the nature of the material precludes the above procedure, additional excavations shall be carried out to provide working space for the erection of formwork. In general, payment will be made for excavating a working width of 600 mm, but the Contractor may excavate a greater working width at no additional cost to the Employer."

Replace the first sentence of paragraph (e) with the following:

"Where excavations have been carried below the authorised levels, the Contractor shall backfill such excavations to the correct level with approved gravel material compacted to 98% of modified AASHTO density or to the density of the surrounding material, whichever is the higher density.

Where excavations for structures have been carried out in hard material, the Engineer may direct that over-excavation be backfilled with weak concrete if there is a danger of settlement or differential settlement of the foundations.

Where the sides of excavations against which concrete is to be cast have been over-excavated or have collapsed partially, the Contractor shall re-trim the excavations if necessary and, unless other remedial measures are agreed to by the Engineer, shall cast the concrete for the structure, including the additional concrete that may be required as a result of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor's account."

PSD 5.2.2.3 Disposal

Replace the second sentence with the following:

"The Contractor shall provide necessary spoil sites for the spoiling of all surplus and unsuitable materials and shall make the necessary arrangements with the owner of the site where the material is disposed of and pay all charges and levies as may be applicable for the use of such spoil sites.

Every spoil site provided by the Contractor shall be approved by the local authority in whose area it is located and the spoiling shall comply with the applicable statutory and municipal regulations as well as the requirements of the owner of the spoil site.

No direct payment will be made for locating and making arrangements for suitable spoil sites and for the spoiling and haul of material at and to such sites. Payment will be deemed to be covered by the various rates tendered and paid."

PSD 5.2.2.4* Selection and Stockpiling

Approval or designation of the material in a particular borrow pit or excavation for a particular purpose does not imply that all the material in the borrow pit or excavation is suitable for the particular purpose for which the said approval or designation relates, nor that all material in the borrow pit or excavation should be used for the particular purpose. The Contractor shall select suitable material from that borrow pit or excavation, discard unsuitable material and reserve material for other purposes as necessary.

The Contractor shall organise and carry out its operations in such a manner as will prevent the contamination of suitable embankment, fill and backfill material with unsuitable materials. Any excavated material which becomes, in the Engineer's opinion, unsuitable for use in embankments, fills or backfill as a result of contamination, shall be disposed of in a manner acceptable to the Engineer and shall be replaced by the Contractor with materials acceptable to the Engineer, all at the Contractor's cost.

When required, or when ordered by the Engineer, material shall be temporary stockpiled at sites indicated by the Engineer for later use. The additional costs of stockpiling material shall be paid to the Contractor in accordance with the provisions of Sub-clause PSD 8.3.14.

PSD 5.2.3 Placing and Compaction**PSD 5.2.3.1 Embankments**

Replace the first sentence of the sixth paragraph with the following:

"Each layer shall be compacted at OMC to a density as specified and in the case of cohesive soil and 100% of modified AASHTO maximum density in the case of non-cohesive soil."

PSD 5.2.3.3* The material of each area of fill shall, unless otherwise approved, be deposited in layers of thickness, before compaction, not exceeding 150 mm. The material shall be spread to form a layer that is approximately uniform thickness, and graded over the whole area of the fill site.

Each layer shall be compacted at OMC to a density of at least 93% of modified AASHTO density in the case of cohesive soil or 100% in the case of non-cohesive soil. Should the material be too wet, owing to rain or any other cause, it shall be harrowed and allowed to dry out to the correct moisture content before compaction is undertaken.

The contractor shall ensure that stormwater will at all times be discharged uniformly over the full fill area or through specially prepared and protected drainage ditches to prevent scouring of the slopes."

"PSD 5.2.3.4 Backfilling over-excavation and overbreak

The material to be used shall comply with 3.2.1, except that the maximum particle size shall not exceed $\frac{2}{3}$ of the thickness of the layer being placed, and shall be compacted to at least 90% of modified AASHTO maximum density.

PSD 5.2.4.3 Grass and other vegetation

Add the following:

"Grass sods shall be fine kweek (Cynodon Dactylon) as specified by the Engineer.

The grass sods shall be nursery grown, cut, delivered and laid within 36 hours from harvesting. It shall be free of weeds and disease and contain a minimum soil thickness of at least 30 mm.

The area to be harvested shall be well watered prior to harvesting and handled with extreme care to retain the maximum amount of moisture and soil within the roots. The contractor shall place and plant the sods on the areas indicated by the Engineer. Prior to the placement, the area to receive sods shall be fertilized by applying 40g/m² of super phosphate fertiliser and thereafter be well watered.

Sods shall be fitted closely together and any hollows shall be filled with topsoil to produce an even and smooth surface. During and directly after the laying the sods, the sods shall be well watered and rolled to obtain a level and even surface."

PSD 5.2.5 Transport for Earthworks

Replace the entire contents of Sub-clause 5.2.5 with the following:

"The transport and haul of all materials, as well as material imported from commercial sources or borrow pits selected by the Contractor, irrespective of the distance and source, shall be deemed to be freehaul, the cost of which shall be included in the Contractor's tendered rates and prices for the excavation of the materials.

No separate compensation shall apply for the transportation of excavated materials."

PSD 6 TOLERANCES

PSD 6.1 POSITIONS, DIMENSIONS, LEVELS, ETC.

Add the following:

“PSD 6.1(c) Bulk earthworks

The tolerances applicable to excavations for structural foundations (degree of accuracy II), as specified in Subclause 6.1(a) shall apply, provided no ponding areas or adverse grades result.”

PSD 7 TESTING

PSD 7.2 TAKING AND TESTING OF SAMPLES

Replace the contents of this subclause with the following:

“The Contractor shall arrange with the approved independent laboratory engaged by the Contractor in terms of clause C3.4.9 of the Scope of Works, to carry out sufficient tests on a regular basis as agreed between it and the Engineer to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the Specifications and shall submit the results of these tests to the Engineer in a form approved by him.

The compaction requirements for fills shall be deemed complied with when at least 75% of the dry-density tests on any lot show values equal to or above the specified density and when no single value is more than five percentage points below the specified value.”

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.3 SCHEDULED ITEMS

PSD 8.3.1 Site Preparation

Replace Clauses 8.3.1.1 and 8.3.1.2 with the following:

“Where Site preparation such as clearing, grubbing, the removal of large trees or the removal and stockpiling of topsoil or surface obstructions are required, the provisions and scheduled items of SABS 1200 C shall apply.”

PSD 8.3.2 Bulk Excavation

Replace the contents of subclause 8.3.2 with the following:

“PSD 8.3.2.1 Excavate in all materials and use for embankment fills, platforms, berms, backfill or dispose, as ordered Unit: m³

The unit of measurement shall be the cubic metre measured in place in accordance with Subclause 8.2 of SABS 1200 D.

Separate items will be scheduled for each type of excavation or structure and for each type or manner of disposal of excavated material.

The tendered rates shall cover the cost of excavation in all material, complying with all the precautions required in terms of Subclause 5.1 of SABS 1200 D (as amended) in addition to the cost of excavation, for basic selection and keeping selected material separate, for loading, transporting within the applicable freehaul distance, off-loading at the spoil or stockpile site, maintaining and finishing the spoil site, spreading, backfilling, watering, compacting as specified on the Drawings, final grading, shaping and trimming, for complying with the requirements for tolerances, providing for testing, finishing and tidying, all in accordance with the specifications.

The rate shall further also provide for backfilling any over-excavation or overbreak in accordance with the requirements of PSD 5.2.3.3.”

PSD 8.3.2.2 Extra-over Items PSD 8.3.2.1 for:

- (a) Hard rock excavation Unit : m³
- (b) Boulder excavation, Class A Unit : m³
- (c) Boulder excavation, Class B Unit : m³

The rate shall cover the additional cost of the operations enumerated in Subclauses 8.3.2.1 above for any portion of the excavation that is classified as hard rock, boulder excavation class A or boulder excavation class B as applicable.

NOTE:

The rates tendered for Subclauses 8.3.2.1 and 8.3.2.2 above shall also provide for backfilling any over-excavation or overbreak in accordance with the requirements of PSD 5.2.3.3.”

PSD 8.3.3 Restricted excavation

Replace the heading of subclause 8.3.3 (a) and the contents of the first two paragraphs with the following:

“PSD 8.3.3(a) Excavate for restricted foundations, footings, aprons, beams, landscaping, structures, pathways, bollards, streetlights as well as for walls and drains, in all materials, and use for fill, backfill, berm or dispose, as ordered Unit: m³

Separate items will be scheduled for each category of excavation and for each class or manner of disposal of excavated material.

All restricted excavation shall be measured by volume.

Replace “in 5.2.2.1 – 5.2.2.3 (inclusive)” at the end of subclause (a) with “in Clauses 5.2.2.1 to 5.2.2.4 (inclusive).”

Delete Clause 8.3.3(b) (1) as well as any reference to intermediate excavation in subclause (b). For the purposes of measurement and payment, excavation other than hard rock and boulder excavation will not be separately classified (refer PSD 3.1.2).”

PSD 8.3.6 Overhaul

Delete Sub-clause 8.3.6.

No overhaul will be paid on material for the purposes of this Contract and all costs for transporting material shall be included in the applicable tendered rates and amounts.

PSD 8.3.12 Road traffic signs and markings

Delete the contents of this Sub-Clause.

The provisions of PSA 5.10 shall apply.

“PSD 8.3.14* Extra over items 8.3.2.1 and PSD 8.3.3 for temporary stockpiling Unit: m³

The unit of measurement shall be the cubic metre of material from necessary excavations, temporarily stockpiled by the Contractor on the instructions of the Engineer, before being used in embankments, fills or backfill.

Measurements shall be taken in place in compacted embankment, fills or backfill as the case may be.

The tendered rate shall include for the costs, additional to those provided for in PSD 8.3.2.1 and PSD 8.3.3 of off-loading, forming and maintaining the stockpile for as long as is required, reloading and transporting regardless of the distance involved from the stockpile.

Payments to the Contractor under this item will only be made in respect of that material stockpiled on the instructions of the Engineer (which instruction shall state specifically that payments for such stockpiling will be paid for under this item) and no payments will be made to the Contractor under this item in respect of materials stockpiled by the Contractor on its own volition, nor for materials necessarily stockpiled by the Contractor in consequence of the

sequence of operations adopted by it in the course of executing the Works, whether such stockpiling was avoidable or otherwise.”

“PSD 8.3.15*Trees and individual plants complete as detailed Unit: No

Trees / plant installation type stated. (Refer details in schedule)

The rate tendered shall cover all costs to procure, collect, plant/install, construct and execute the following:

- The collection of the trees / plants from the nursery / supplier .
- The excavation of a 1 m³ hole to accommodate the tree and required soil.
- The excavation of the plants bed to accommodate the plant and the required soil.
- Planting of the trees / plants and backfilling the remainder of the hole using a soil mix consisting of 40 % red soil, 50 % black soil and 10% mushroom compost. Each tree shall receive 500 grams super phosphate mixed into above-mentioned soil mix.
- The provision and installation of the tree support and guard as detailed on the drawings.
- The provision and installation of the specified tree grid and frame complete with all incidentals necessary, as detailed on the drawings.
- The tree shall be secured to the tree support with 3 x 500 mm x 30 mm rubber bands.
- The addition of 2 x 100 grams “AGRIFORM” tablets for each tree.
- Directly after planting, each tree shall receive 50 litres of water twice a week.
- Directly after the commencement of the Defects Liability Period, each tree shall be watered and maintained for a period of 6 months.
- Each tree shall receive at least 60 litres of water once a week and all unwanted weeds shall be removed from the soil base around the tree.
- Pruning required: None.

The tendered rate shall include for all fixings shown and detailed on the drawings.

Payment for this item will be as follows :

60% of the rate will be paid once the tree / plants have been delivered and planted to the satisfaction of the Landscaper.

A further 20% will be paid 3 months after initial planting based on the growth and health of the trees and plants as determined by the Landscaper.

The balance will be paid at the release of the retention period (12 months after the certificate of completion has been issued) if the trees and plants have been fully established as determined by the Landscaper.

Note: The Contractor's attention is drawn to Clause C3.4.5.1 under Part 3: Scope of Work.

PSD 8.3.16* Install root barrier geotextile..... Unit : m²

The rates tendered shall cover the cost of supplying and installing a suitable root guard geotextile barrier to protect existing services adjacent to trees planted under PSD 8.1.15.

The geotextile shall comply with the following specifications:

- 17.5% : Active Chemical*: Trifluralin (a,a,a-Trifluoro 2,6 - dinitro - N,N, - Dipropyl - p - toluidine)
- 82.5% : Inert Ingredients: 100% Spunbonded Polypropylene, Polyethylene and Carbon"

PSDA EARTHWORKS (SMALL WORKS)**PSDA 3 MATERIALS****PSDA 3.1 Classification For Excavation Purposes**

Delete SABS 1200 D Clause 3.1 and replace with the following:

PSDA 3.1.1 Method of Classifying

The Contractor may use any method he chooses to excavate any class of material but his chosen method of excavation shall not determine the classification of the excavation. The Engineer or his Representative will decide on the classification of materials. In the first instance classification will be based on inspection of the material to be excavated and on the criteria given in PSD 3.1.2(a) and (b).

PSDA 3.1.2 Classes of Excavation

All materials encountered in any excavation for any purpose including restricted excavation will be classified as follows:

(a) Hard rock excavation

Hard rock excavation shall be excavation in material (including undecomposed boulders exceeding 0.17 cubic metres in individual volume) that cannot be efficiently removed without blasting, wedging and splitting, or hydraulic hammers.

This classification includes materials such as:

- solid unfractured rock occurring in bulk
- solid ledges thicker than 200mm
- igneous rock intrusions
- cemented sedimentary rocks.

(b) Soft Excavation

Any material which can be removed by bulldozers or backhoes, shall be classified as soft excavation.

Soft excavation shall be material not falling into the category of hard rock excavation.

PSDA 5 CONSTRUCTION**PSDA 5.1. Precautions****PSDA 5.1.1.2 Safeguarding of excavations**

Safeguarding of excavations will be the contractors full responsibility.

PSDA 5.1.1.3 Explosives

No blasting will be allowed

PSDA 5.1.2.4 Negligence

The applicable requirements of subclause 5.4 of SABS 1200A shall apply.

PSDA 5.1.8 Road traffic control

Traffic signs, barriers and flagmen will be required and shall be installed / placed as required. The requirements of subclause PSA 5.11* will also apply.

PSD 5.2.6.2 Overhaul

Delete the contents of this clause. For the purpose of this contract, all haul shall be deemed to be freehaul, and the contractor is to include the cost of haul / transport in the relevant tendered rates.

PSDA 8 MEASUREMENT AND PAYMENT

PSDA 8.3.3 Restricted excavation

Replace the heading of subclause 8.3.3(a) and the contents of the first two paragraphs with the following:

“PSDA 8.3.2(a)Excavate for restricted foundations, footings, trenches, stormwater drains, and landscaping as if in soft material and use for backfill or berm or dispose, as ordered.....Unit : m³

Separate items will be scheduled for each category of excavation and for each class or manner of disposal of excavated material.

All restricted excavation will be measured by volume.

Delete subclause 8.3.3(b)(1) as well as any reference to intermediate excavation in subclause (b). For the purposes of measurement and payment, excavation other than hard rock excavation (Class A or Class B) will not be separately classified (refer PSD 3.1.2).

“PSDA 8.3.2 (c)* Extra over PSDB 8.3.2(a) for hand excavation where ordered
Unit : m³

The rate tendered shall cover the additional cost, extra over that provided for under 8.3.2(a), for carrying out trench excavation by hand where ordered by the Engineer.

The volume shall be computed from the dimensions specified, shown on the drawings or ordered by the Engineer."

Note: Normal handwork required to clean and trim the sides and bottoms of mechanically excavated trenches will not qualify for payment in terms of this clause"

"PSDA 8.3.9* Excavate and dispose of unsuitable material from sides or bottom of restricted foundations, footings, trenches and stormwater drains where ordered and replace with:

- (a) Selected material complying with subclause 3.2.2 of SABS 1200 ME compacted to 90% of modified AASHTO maximum density (Source to be stated)..... Unit : m³
- (c) 15MPa/19 concrete Unit : m³

Separate items will be scheduled for each type of excavation, source of backfill material and manner of backfill.

The rates tendered shall cover the cost of excavating the unsuitable material to the extent ordered by the Engineer, disposing of the material as directed within a free haul distance and subsequent backfilling of the excavation using selected material or concrete as ordered.

NOTE: The work required to construct the selected layer beneath areas to be concrete lined will be measured for payment under (a) as applicable. The unit of measurement shall be the cubic metre of selected material placed and compacted. Any excavation required to accommodate the concrete lining will be deemed to be covered by subclause 8.3.4 of SABS 1200 DM."

PSDM EARTHWORKS (ROADS, SUBGRADE)**PSDM 1 SCOPE**

Add the following:

“This specification shall also cover the construction of the pioneer layer.”

PSDM 2 INTERPRETATIONS**PSDM 2.3 DEFINITIONS AND ABBREVIATIONS**

Notwithstanding the definition of roadbed given under Clause 2.2 of SABS 1200 M, all in-situ surfaces requiring compaction as indicated on the drawings, shall be classified as roadbed.

PSDM 3 MATERIALS**PSDM 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES**

Notwithstanding the provisions of this Clause, the excavation of material will, for purposes of measurement and payment, be classified as specified in PSD 3.1.

PSDM 3.2.2 Fill

Notwithstanding the requirements of this Clause, material from commercial sources or borrow pits located by the Contractor, to be used in the fill, shall comply with the requirements of Clause 3.2.3 and PSDM 3.2.3.

PSDM 3.2.3 Selected layer

Replace the contents of this Clause with the following:

“The following requirements shall apply in respect of the selected layer:

- a) Maximum particle size: 60% of compacted layer thickness
- b) Unstabilised selected layer:
 - (i) Upper selected layer

Minimum CBR at 93% of modified AASHTO density: 15

Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

Note:

The requirements for the upper selected layer also apply where only one selected layer is specified.

- (ii) Lower selected layer and Pioneer layer

Minimum CBR at 93% of modified AASHTO density: 7

Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

PSDM 5 CONSTRUCTION

PSDM 5.1.2 Accommodation of traffic

The requirements of Clauses PSA 5.10 and PSD 5.1.6 shall apply regarding the control and temporary accommodation of traffic.

PSDM 5.2.2.2 Dimensions of cuts

Delete "suitable material7" in the fifth line and replace with "material complying with 3.2.3 and PSDM 3.2.3."

PSDM 5.2.2.3 Use of material

Add after "borrow pits" in the second line of Sub-clause (a): "or commercial sources."

PSDM 5.2.2.5 Disposal of surplus or unsuitable material

Add after "directed" in the second line of this Clause "(refer PSD 5.2.2.3)".

PSDM 5.2.3.2 Removal of unsuitable ground

Replace the second sentence of paragraph (a) with the following:

"The excavated spaces shall then be backfilled with approved imported material compacted to the required density."

Add the following sentence to paragraph (b):

"Unsuitable excavated material will be paid for as cut to spoil."

PSDM 5.2.3.3 Treatment of roadbed

Add the following to Clause (a):

"The depth of compaction shall be 150mm."

PSDM 5.2.4.3 Finishing

Notwithstanding the provisions of this Clause the requirements of PSDM 5.2.9 shall as applicable apply to the finishing off of verges.

PSDM 5.2.5 Selected layer

Replace the contents of this Clause with the following:

“Except with regard to density, the requirements of Clause 5.2.4 shall apply. The degree of compaction shall be:

Upper selected / Selected : 93% of modified AASHTO maximum density.

Lower selected : 93% of modified AASHTO maximum density.”

PSDM 5.2.8. Transport

Replace the contents of this subclause with the following:

“The provisions of Subclause PSD 5.2.5 of SABS 1200 D, as amended, shall apply.”

“PSDM 5.2.9* Trimming, shaping and rolling of verges

During the initial earthworks the verge width shall be cut or filled to approximately the final level and shall be kept trimmed and tidy during construction of the works. Where specifically ordered and after the completion of the road layers, including the surfacing, and after construction of the necessary kerbs, including the satisfactory backfilling behind the kerb, the verge shall be finished off, trimmed, shaped, rolled and compacted, to the lines and levels shown on the drawings or as specified.

The verge material shall consist of that material which would normally be occurring at that position or depth when in cut and shall not be contaminated by foreign materials such as bricks, basecourse material, horticultural inferior materials from trench excavation, etc. Verges in fill conditions are to consist of the material as specified for the fills and similarly not be contaminated with foreign materials.

Over those areas and sections of verge where grass is to be planted or where other cover is specified, the verge shall not receive the treatment (trimmed, shaped and rolled) described above.

The Contractor shall be responsible for taking the necessary precautions and measures to control the dust nuisance which may arise due to his operations on the verge, whether from the natural ground surface or topsoil layer, until the verge is accepted by the Engineer.”

"PSDM 5.2.10* Dimension and Level Control and Process Control

The Contractor shall submit to the Engineer records of dimension and level control and/or process control prior to requesting the Engineer to carry out any routine tests and/or inspections.

A sample form can be obtained from the Engineer."

"PSDM 5.2.11* Requesting of Tests

Tests and Inspections of the works will only be carried out by the Engineer once the appropriate test/inspection request forms have been fully completed. Test/inspection request forms can be obtained from the Engineer.

PSDM 6 TOLERANCES

"PSDM 6.5* DIMENSION AND LEVEL CONTROL

The requirements of PSM 6.4 shall apply."

PSDM 7 TESTING

PSDM 7.3 ROUTINE INSPECTION AND TESTING

Replace Table 2 and the contents of Clause 7.3.2 with the following:

"The dry density requirements for a particular lot of selected layer or wearing course shall be deemed to be satisfied if the average density and the results of individual tests meet the requirements specified in Table 2 below. Refer to Clause PSD 7.2 for the requirements for fill.

TABLE 2 - DENSITIES

1	2	3	4	5
Layer	Specified density (% of modified AASHTO density)	Number of tests per lot	Average density %	Minimum density for any single test, %
Upper selected	93	3 and 4 5 6	93,1 93,4 93,6	89,4 89,2 89,0
Lower selected layer or pioneer layer	93	3 and 4 5 6	93,1 93,4 93,6	89,4 89,2 89,0

"PSDM 7.4* INSPECTION AND TESTING BY ENGINEER

The requirements of PSM 7.3 shall apply."

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.1 BASIC PRINCIPLES

Add the following:

"The requirements of PSM 8.2 shall apply. The Contractor shall further make provision in the various rates for the construction of the roadbed, fill and selected layer for the cost of his own process control testing and the cost of complying with PSDM 6.5 and PSDM 7.4."

PSDM 8.2 COMPUTATION OF QUANTITIES

Replace Clauses 8.2.1 to 8.2.3 (inclusive) with the following:

"PSDM 8.2.1 The provisions of Clause 8.2.1 of SABS 1200 D shall apply.

PSDM 8.2.2 The provisions of Clause 8.2.2 of SABS 1200 D shall apply.

PSDM 8.2.3 The provisions of Clause 8.2.2 of SABS 1200 D shall apply."

PSDM 8.2.5 Verifying quantities

Replace the first sentence of this Clause "Before the work quantities" with the following:

"After the works have been set out and the area cleared (including the demolition of buildings and removal of brick and asphalt paving as well as surface obstructions), the Contractor shall allow the Engineer reasonable time to take cross-sections for the purpose of measurement and payment of cut and fill quantities. The latter being subject to the adjustments stipulated in Clause 8.2.2."

PSDM 8.3.3 Treatment of roadbed

Add the following to Clause 8.3.3(a):

"(4) Minimum of 95% of modified AASHTO maximum density: Unit :m³

Add the following paragraph to the end of Clause 8.3.3(a):

"The unit of measurement shall be the cubic metre of material recompacted as specified and the volume shall be determined from levelled cross-sections on which are superimposed the levels to which the roadbed is to be constructed. When material is imported to make up the required volume, such material will be paid for as cut or borrow to fill as relevant.

Note:

No additional payment will be made for difficult work or hand operations in confined areas."

PSDM 8.3.4 Cut to fill, borrow to fill

Replace the contents of this Clause with the following:

"(a) Cut to fill compacted to 90% of modified AASHTO maximum density
Unit: m³

The rate tendered shall cover the cost of excavating from the site as if in soft material, transporting, preparing, processing, shaping, watering, mixing, compacting to percentage of modified AASHTO maximum density specified, trimming and testing the fill.

The rate tendered shall further differentiate between cut to fill in vehicular trafficked areas and cut to fill in pedestrian trafficked areas.

(b) Borrow to fill from commercial or off site sources located by the Contractor compacted to 90% of modified AASHTO maximum density Unit: m³

The rate tendered shall cover the cost of acquiring the material from commercial or off site sources located by the Contractor, any excavation and selection required, loading, transporting to the point of use irrespective of distance, temporary stockpiling if necessary, placing, watering, compacting to percentage of modified AASHTO maximum density specified, trimming and testing the fill."

The rate tendered shall further differentiate between borrow to fill in vehicular trafficked areas and borrow to fill in pedestrian trafficked areas.

Note:

Cut or borrow to fill in pedestrian trafficked areas shall only qualify for payment if the fill is placed after the kerbs have been laid, alternatively it will be paid as cut or borrow to fill in vehicular trafficked areas.

No additional payment will be made for difficult work or hand operations in confined areas.

PSDM 8.3.5 Selected layer compacted to 93% of modified AASHTO maximum density

Replace the contents of this Clause with the following:

"(a) Using material cut from the Site..... Unit : m³

The rate tendered shall cover the cost of excavating as if in soft material, selecting, loading, transporting, placing, watering, compacting to percentage of modified AASHTO maximum density specified, trimming and testing the selected layer.

(b) Using material from commercial or off site sources located by the Contractor Unit: m³

The rate tendered shall cover the cost of acquiring the material from commercial or off site sources located by the Contractor, any excavation and selection required, loading, transporting to the point of use irrespective of distance, temporary stockpiling if necessary, placing, watering, compacting to percentage of modified AASHTO maximum density specified, trimming and testing the selected layer.

Note :

No additional payment will be made for difficult work or hand operations in confined areas."

PSDM 8.3.7 Cut to spoil or stockpile from

Delete paragraph (b). In terms of PSDM 3.1 intermediate excavation will not be separately measured for payment.

Add the following:

"Separate items will be scheduled for cut to spoil and cut to stockpile. The rate tendered shall further cover the cost of complying with the requirements of Clause 5.2.3.2 irrespective of the depth or extent of the material ordered to be removed, or whether the order to remove unsuitable material is given after the completion of any initial cut operation.

The tendered rate shall further, in the case of cut to spoil, include full compensation for transporting the material regardless of the distance involved and for all other incidental cost to dispose of the spoil material. (Refer also PSD 5.2.2.3, PSD 5.2.5 and PSDM 8.3.12)."

PSDM 8.3.9 Overbreak of excavation in:

Delete sub-item (a). In terms of PSDM 3.1 intermediate excavation will not be separately measured for payment.

PSDM 8.3.11 Extra over 8.3.2, 8.3.4 or 8.3.5 for temporary stockpiling of material

Add the following:

The temporary stockpiling of material from commercial sources or borrow pits located by the Contractor will not be measured for payment."

PSDM 8.3.12 Overhaul

Delete this item as no overhaul will be paid on material for the purposes of this contract and all the costs for transporting material shall be included in the applicable tendered rates and amounts.

PSDM 8.3.13 Surface finishes

Replace the contents with the following:

"a) Topsoiling from on-site sources Unit: m²

The rate shall cover the cost of excavating from stockpiles formed in terms of 5.2.1 and hauling and spreading in terms of subclause 5.2.4.2 of SANS 1200 D or subclause 5.2.5.2 of SANS 1200 DA, as applicable.

b) Topsoiling from commercial sources..... Unit: m²

The rate shall cover the cost of acquiring and hauling, regardless of distance, the required topsoil material mix complete with fertiliser as specified and for spreading in terms of subclause 5.2.4.2 of SANS 1200 D or subclause 5.2.5.2 of SANS 1200 DA, as applicable.

c) Grassing or other cover Unit: m²

Separate items shall be scheduled for the various covers specified.

The rate shall cover the cost of acquiring and hauling, regardless of distance, the required grassing or cover specified, for applying, placing, fertilizing, constructing, watering and rolling the specified cover all in terms of subclause 5.2.4.3 of SANS 1200 D or subclause 5.2.5.3 of SANS 1200 DA, as applicable.

Grassing and other vegetation specified shall be obtained from a reputable source.

Note: This item is not applicable to quantities measured under 8.3.2(b).

d) Trim, shape and roll verge, where ordered Unit: m²

Measurement shall be the surface area of the verge prepared in accordance with the requirements of PSDM 5.2.9. The rate tendered shall cover the cost of all things necessary to finish off the verge as specified, including the incorporation of material to make up for material lost due to weather or other reasons. (Cut and fill to bring verge to level payment under 8.3.4).

Add the following subclauses

PSDM 8.3.17* Rectifying faulty subgrade Unit : m³

Payment will only be made for areas within the road bed that are not greater than 100m² in extent and is deemed unsuitable ground in terms of Clause 5.2.3.2 as ordered by the Engineer. Payment for the removal, disposal, etc will be paid under cut to spoil or stockpile from as applicable.

The rate shall cover the cost of acquiring selected material (in terms of PSDM 3.2.3) from commercial sources or borrow pits located by the Contractor, transporting, temporary stockpiling, (if required) placing the selected material, watering, compacting to 95% Mod AASHTO maximum density, trimming, grading and testing

Areas that are greater than 100m² in extent will be paid under excavation items as applicable.”

“PSDM 8.3.18*Construct the selected layers with material from commercial sources.....Unit: m³

The rate shall cover the cost of locating the source, complying with all the relevant precautions required in terms of Clause 5.1, SABS 1200 D, procuring the material, basic selection, transporting from source to point of deposition on the road, spreading, watering, compacting, final grading, complying with the tolerances and testing.”

PSGA CONCRETE (SMALL WORKS)

PSGA 1 SCOPE

Add the following:

"This specification shall also cover the construction of the concrete walkways, traffic circles and concrete slabs."

PSGA 3 MATERIALS

PSGA 3.2 CEMENT

PSGA 3.2.1 Applicable Specifications

Replace the contents of this subclause with the following:

"Notwithstanding the contents of this Clause, where reference is made in this specification or the standard specifications to any cement specification, it shall be replaced with the following specification, SABS EN 197-1-Cement-Part 1: Composition, specifications and conformity criteria for common cements.

On this Contract cement grade CEM I 42, 5 shall be used."

PSGA 3.2.2 Storage of cement

Add the following:

"Cement shall not be stored for longer than 12 weeks without the Engineer's permission."

"PSGA 3.8* Curing compound

Curing compound shall be white pigmented natural resin based liquid curing compound complying with ASTM 309-74."

"PSGA 3.9* STAINLESS STEEL

The following grades of stainless steel shall be used:

- 316L for welded applications,
- 316 for not-welded applications."

"PSGA 3.10* MATERIALS FOR BUILDING WORK

PSGA 3.10.1 Cement

The requirements stipulated for subclause 3.2.1 and PSGA 3.2.1 shall apply.

PSGA 3.10.2 Sand

Sand for mortar shall comply with SABS 1090.

PSGA 3.10.3 Bricks

Brickwork shall be built in stretcher bond. The walls shall be built to the dimensions shown on the Drawings or ordered. All bricks shall be well soaked in water immediately before being laid and the previous course of bricks shall be well wetted before the laying of the following course.

Walls shall be carried up regularly so that no brickwork is more than 1m higher than adjoining brickwork.

All bricks shall comply with SABS 227 and shall be NFX burnt clay masonry units free of stones, cracks and other defects. The bricks shall be obtained from an approved manufacturer and samples of the bricks shall be submitted to the Engineer for approval.

PSG 3.10.4 Mortar

Mortar shall comprise of the cement, lime and sand mixed in the proportions given below:

Cement:	50 kg
Lime:	0 – 40L
Sand:	130L (measured loose and damp)”

PSGA 4 PLANT**"PSG 4.4.2 Finish**

The finish to all exposed concrete shall be smooth and that to buried or backfilled surfaces, rough.

PSGA 5 CONSTRUCTION**PSGA 5.4 CONCRETE****PSGA 5.4.1.5 Strength Concrete**

Add the following:

"The Contractor shall when requesting approval of a mix design, submit the constituent proportions of the proposed mix together with the results of compressive strength tests carried out."

PSGA 5.4.2 Batching

Notwithstanding the requirements of this Clause, the method of batching shall be subject to approval.

PSGA 5.4.7 Curing and protection

Notwithstanding the provisions of this subclause, all cast in situ concrete shall, except where otherwise authorised, be cured in accordance with the requirements of subclause (c) using curing compound of the type specified in PSGA 3.8.

PSGA 5.4.8 Concrete surfaces

All unformed concrete surfaces shall, except where otherwise ordered, be given a wood float finish.

“PSGA 5.5* CONSTRUCTION OF CONCRETE SURFACING

The surfaces on which concrete are to be cast shall, after being trimmed and compacted, be covered with a sprayed bitumen emulsion primer or polyethylene sheeting of nominal thickness 0,25 mm, all joints in the sheeting being overlapped at least 150mm. Care shall be taken not to damage the bitumen layer or the polyethylene sheeting (as relevant) during the placing of reinforcement and during concreting.

Joints in concrete shall be sealed and shall be constructed as shown on the drawings. The paving shall be cast in alternate panels and, after the concrete in the alternate panels has set, the exposed end surfaces shall be painted with bituminous emulsion before the intermediate slabs are cast.

The exposed surfaces of the concrete shall be given a broom textured finish and shall be cured as specified in 5.4.7 and PSGA 5.4.7.”

“PSGA 5.6* BRICKWORK

Brickwork shall be built in stretcher bond, except for the top course of the walls which shall be built in soldier course. The walls shall be built to the dimensions shown on the drawings or ordered. All bricks shall be well soaked in water immediately before being laid and the previous course of bricks shall be well wetted before the laying of the following course.

Walls shall be carried up regularly so that no brickwork is more than 1m higher than adjoining brickwork.

Mortar joints shall not exceed 10 mm in thickness and shall be pointed. The mortar used shall be mixed in small quantities and used within 2 hours of mixing. Bricks shall further be clay fire bricks to SABS 227.”

PSGA 6 TOLERANCES

PSGA 6.4 PERMISSIBLE DEVIATIONS

Add the following:

"Notwithstanding the tolerances specified for the construction of the embankment, the following tolerances shall apply to the construction of the apron slab:

Position in plan	:	Within 100mm of its designated position, provided that over any length of 30m, the deviation from a straight line joining the extremities of the 30m section, shall not exceed 25mm.
Thickness	:	Not less than 95mm.
Width	:	± 25 mm provided the requirements with respect to alignment are met.
Level	:	± 10 mm provided the requirement with respect to thickness is met and that the distance between the surface and a 3m straight edge placed on the apron slab is nowhere more than 5mm.

PSGA 7 TESTS**PSGA 7.1.2 Frequency of sampling**

Notwithstanding the requirements of this subclause, the Contractor shall take note that he is responsible for taking an adequate number of tests to ensure that the concrete being used complies with the specification. The Engineer will only carry out such control testing as he may require.

PSGA 8 MEASUREMENT AND PAYMENT**PSGA 8.1.2 Reinforcement**

Replace the contents of this clause with the following:

"The unit of measurement for steel bars shall be the ton of reinforcement in place in accordance with the drawings or as authorised by the Engineer.

The unit of measurement for welded steel fabric shall be the square metre of fabric reinforcement in place and the quantity shall be calculated from the nett area covered by the mesh, excluding laps.

Clips, ties, separators, stools and other steel used for positioning reinforcement shall not be measured unless shown on the bending schedules.

The rate tendered shall cover the cost of the supply, delivery, cutting, bending, placing and fixing of the steel reinforcement, including all tying wire, stools, supports and waste."

PSGA 8.1.3 Concrete

Delete all references to "intermediate excavation" throughout this subclause.

Notwithstanding the provisions of subclause 8.1.3.1 (b) and (d) concrete required to replace overbreak or over-excavation will not be measured for payment (refer PSD 3.2.2, PSD 5.1.1.3 and PSD 5.2.2.1).

Add after "testing" in the second line of subclause 8.1.3.3(a) "including transport to an approved laboratory."

PSGA 8.4.4 Unformed surface finishes

Add the following :

"(c)Broom textured finishUnit : m²"

"PSGA 8.4.5*Concrete surfaces (Surface area to be paved, thickness and grade of concrete specified) Unit: m²

..... Unit: m²

The unit of measurement shall be the plan area of concrete surfacing to be placed, irrespective of shape, cross-sectional slope or longitudinal grade.

The rate tendered shall cover the cost of all labour, plant, materials, formwork and incidentals required to construct the surfacing complete as detailed on the drawings, including for the rounding the edges, trimming and compaction of the layer to receive concrete, in the positions and to the extent shown on the drawings, or directed on site, including sprayed bitumen emulsion primer or polyethylene sheeting, formwork, mesh reinforcement, where applicable, and for texturing. (Expansion joint will be measured elsewhere).

Note :

The testing of the surfacing will be carried out in terms of the applicable requirements of Clause 7 of SABS 1200 MK and PSMK 7 and payment for testing will be effected in terms of PSMK 8.2.3.

The acceptance criteria stated in PSMK 8.2.1 shall also apply to concrete surfacing placed in terms of this specification.

No additional payment will be made for forming voids or boxing out holes.

"PSGA 8.6* Construct raised pedestrian crossing complete (Table Top) Unit: m

The unit of measurement shall be the linear meter of crossing constructed measured from one end to the other across the roadway. It should be noted that the average length of crossing is approximately 14 500 mm.

The rate tendered shall cover the cost of all labour, plant, materials, formwork and incidentals required to saw cut the existing bituminous surfacing, to excavate into the existing road surface and layerworks, and to construct the crossing complete as detailed on the drawings, including mortar layer under paving, for trimming and compaction of the layer to receive concrete, in the positions and to the extent shown on the drawings or directed on site, including sprayed bitumen emulsion primer or polyethylene sheeting, formwork, concrete, and for texturing and colouring where applicable as shown. Road signs, road mark painting, kerbing and paving will be measured elsewhere.

PSLC CABLE DUCTS**PSLC 1 SCOPE**

Add the following to subclause 1.1:

“This specification shall also cover the supply, laying and bedding in trenches of pipes as ducts for the provision and protection of telecommunication and data cables.”

PSLC 2 INTERPRETATIONS**PSLC 2.1 SUPPORTING SPECIFICATIONS**

Add the following to this subclause:

“f) SABS 1200 GA

PSLC 3 MATERIALS**PSLC 3.1 DUCTS**

Irrespective of this clause all pipes for cable ducts shall be as follows:

a) Data and telecommunication ducts:

Pipes shall be smooth bore, green, HDPE, Telkom approved ducting pipe, “Kabelflex” or similar approved, complete with push fit couplings and rubber sealing rings.

b) Electrical ducts:

Pipes shall be smooth bore, black, HDPE ducting pipe, “Kabelflex” or similar approved, complete with push fit couplings and rubber sealing rings.

PSLC 3.2 BEDDING

Delete sub-clauses 3.2.1 and 3.2.2 and replace with the following:

“Selected granular material shall be an aggregate, sand or granular material all of a non-cohesive nature, the grading analysis of which shows 100% passing a 13.2 mm sieve and not more than 5% passing a 0.075 mm sieve (Metric sizes). The Compactability Factor shall not exceed 0, 4.”

PSLC 3.3 BACKFILL

Notwithstanding the provisions of this Clause, the material to be used for backfill in areas subject to road traffic loads shall be subbase quality material

complying with the requirements of Clause 3.2.1 of SABS 1200 ME and PSME 3.2.1.

PSLC 3.4 CABLE DUCT MARKERS

Where applicable, temporary markers shall be provided at the end of each duct.

The ends of all ducting pipes shall be temporarily marked with a 300 x 100 x 75 mm clay brick planted 200 mm vertically into the ground directly above the end plugs. The ends of the draw ropes shall be attached to this brick marker. The exposed part of the brick marker shall be painted as follows:

Electricity	Red
Telkom	Green
Communication	Yellow

Permanent markers shall be provided in accordance with the requirements of PSLC 5.10.

PSLC 5 CONSTRUCTION

PSLC 5.1 EXCAVATION OF TRENCHES

Material excavated other than hard rock, will not be separately classified for the purpose of measurement and payment. The unit rate for excavation shall cover excavation in soft and intermediate material.

PSLC 5.1.1 Trench widths and depths

Replace the contents of Clauses 5.1.1.1 and 5.1.1.4 with the following:

“Subject to the requirements of 5.2.4, trenches for ducts shall be excavated to widths determined in accordance with the following minimum requirements:

- Minimum trench width, 450 mm
- Minimum side allowance, 100 mm
- Minimum horizontal spacing between ducts measured at a coupling, 50 mm.”

Replace the contents of Clause 5.1.1.2 with the following:

“Subject to the requirements of 5.2.2.1 and 5.2.4 and unless otherwise shown on the drawings or ordered, trenches shall be excavated to such a depth that, after the duct or nest of ducts has been laid, there is a minimum cover to ground level of at least:

- a) 600 mm for communication and data ducts and
- b) 1 200 mm for electrical ducts.”

PSLC 5.1.3* Excavation for trenches at road crossings

The requirements of PSDB 5.4 shall apply with the additional proviso that the minimum depth of cover over ducts shall be 300mm where construction traffic is liable to cross them. Road crossings shall therefore be constructed after the construction of the roadworks has reached the stage where the required cover is available.

PSLC 5.3.3 Draw wire

Notwithstanding the requirements of this Subclause, the nominal diameter of draw wire shall be 3 mm.

PSLC 5.3.5* Laying to grade

Where two or more Telkom ducts of internal diameter greater than 75 mm are laid together in the same trench, the ducts shall be laid to a minimum grade of 1:400."

PSLC 5.6 LAYING OF TELECOMMUNICATIONS AND DATA DUCTS WITH OTHER SERVICES

The horizontal separation between telecommunications ducts and other services shall be the maximum possible but in the case of electricity cables at least 300mm. Where the latter cannot be attained the ducts shall be separated from the cables by means of concrete protection slabs (see below) placed vertically.

No service other than telecommunications ducts shall be laid directly above and parallel to a telecommunication duct.

The concrete protection slabs mentioned above shall be 400mm square by 50 mm thick and shall be reinforced with welded mesh Ref. 193. The concrete used shall be 20 MPa/13 and the slabs shall be finished off to the satisfaction of the Engineer.

Replace the heading and contents of Subclause 5.7 with the following:

"PSLC 5.7 CROSSING OF TELECOMMUNICATION DUCTS WITH OTHER SERVICES

Telecommunications ducts should preferably cross above other services. The radial separation at such crossings shall be the maximum possible but in the case of electricity cables at least 300mm. Where the latter cannot be attained, concrete protection slabs as specified in PSLC 5.6 shall be placed above the electricity cable for a distance of 800 mm on either side of the crossing (or below as the case may be)."

PSLC 5.8 ROAD CROSSINGS

Delete the last sentence and replace with:

“The duct(s) shall extend a distance of at least 1m beyond the rear of kerb or walkway as applicable.”

PSLC 5.10 POSITION TO BE MARKED

Replace the contents of this Subclause with the following:

Marking is required on both sides of the carriageway.

“The position of each duct shall be marked by imprinting a letter “I”, “T” and “E”, as applicable, into the wet concrete of extruded kerbs, directly above the duct. The imprint shall be 100 mm high and 10 mm deep and the tool used shall be of an approved shape and design.

Where there is no kerb face, or where pre-cast kerbs are used, the duct shall be marked with a concrete marker comprising a 150mm square by 300mm long, 20 moa/19 concrete block, with the appropriate letter imprinted on the square face. The marker shall be placed hard up against the edge of the road surface or the back of the kerb, level with the verge.”

PSLC 8 MEASUREMENT AND PAYMENT**PSLC 8.1 GENERAL**

Add the following:

“Material displaced by the pipeline and by imported material from sources other than trench excavation, shall be disposed of at an approved site furnished by the Contractor. No haulage shall be payable for such material.”

PSLC 8.2.2 Schedule Items

Replace the last line of the first paragraph of Subclause (a) “determined drawing” with “determined in accordance with the provisions of PSLC 5.1.1 and that ordered in terms of PSLC 5.6.”

Delete payment clause 8.2.2(b) and add the following:

“8.2.2(b) Extra over item (a) above for:

Hard rock excavation..... Unit: m³

PSLC 8.2.5 Supply, lay, bed and prove duct

Add after “specified” in paragraph (a) of this clause “as well as the cost of complying with PSLC 5.3.5.”

The tendered rate shall further include all labour, plant, material and incidentals, including push fit couplings, rubber seal rings, end plugs, draw wire, protection during construction and marking of the duct ends.

Replace the heading and contents of Clause 8.2.6 with the following:

PSLC 8.2.6 “Provision of selected granular material complying with PSLC 3.2

(a) From commercial or off-site sources located by Contractor Unit: m³

The rate tendered for shall cover the cost of acquiring, regardless of distance, the required bedding from commercial or off-site sources located by the Contractor, delivering it to points alongside the trench spaced to suit the Contractor’s method of working and disposing of material displaced by each importation within a freehaul distance of 0.5 km.

PSLC 8.2.9 Overhaul of surplus excavation

Delete this subclause.

“PSLC 8.2.10*Imported backfill (source and quality stated)..... Unit: m³

The provisions of Clause 8.3.3.1 of SABS 1200 DB shall apply, except that the trench width shall be determined in accordance with PSLC 5.1.1 or that called for in terms of 5.6.

“PSLC 8.2.11*Compaction in road reserves Unit: m³

The provisions of PSDB 8.3.3.3 shall apply, except that the trench width shall be determined in accordance with PSLC 5.1.1 or that ordered in terms of PSLC 5.6 and payment will be extra over that covered by 8.2.2(a)”.

“PSLC 8.2.12*Supply and installation of concrete protection slabs..... Unit: No

The rate tendered shall cover the cost of all labour, plant and material required to manufacture the protection slabs as specified in PSLC 5.6, as well as placing and bedding the slabs.

PSLE STORMWATER DRAINAGE

PSLE 3 MATERIALS

PSLE 3.1(a) Precast concrete pipes

Interlocking joint pipes (Ogee) shall be used throughout.

PSLE 3.1(d) Skewed ends

Skewed ends may be cut on site using and approved concrete saw.

PSLE 3.4.1 Bricks

Delete the first sentence, and replace with the following:

“Bricks used in stormwater structures shall be:

Burnt clay engineering bricks, having a nominal compressive strength of 28 MPa, and complying with the requirements of SABS 227.

PSLE 3.5.9* Subsoil / Flodrain Drainage System

The Flodrain system shall consist of a geonet drainage core and drainage pipe enclosed within a geotextile filter jacket. The Flodrain shall be supplied prefabricated with geopipe for assembly on site. The Flodrain shall have a minimum flow capacity of 0,19 l / s per metre (hydraulic gradient of unity and a pressure of 10 KPa) and shall not decrease in thickness by more than 20% under confining pressure of 10 kPa.

(a) Geonet Drainage Core

The core shall Kaytech Flodrain or approved equivalent, be non-corroding, rot-proof and manufactured from low density polyethylene with minimum characteristics as follows:-

Mass	:	822 g/m ²
Thickness	:	5 mm
Tensile Strength	:	2, 4 kN / m
Discharge capacity	:	3, 0 l /sec under 100 kPa at a hydraulic gradient of unity

(b) Drainage Pipe

The geopipe to be used in conjunction with the prefabricated Flodrain shall be Kaytech Geopipe or approved equivalent, manufactured from high density polyethylene with not less than 60% of the surface perforated.

Geotextile filter jacket

The geotextile filter jacket to be used in conjunction with the prefabricated Flodrain shall be, Kaytech A1 or approved equivalent, with minimum characteristics as follows:

Thickness	:	1,3 mm under 2 kPa
Permittivity	:	3/s @ 100mm head
Porosity	:	93% under 2 kPa
Throughflow	:	300 l / s / m ² head @ 100mm head
Permeability	:	3.9m/s

PSLE 5 CONSTRUCTION

PSLE 5.2.1 General

With reference to the last sentence of the second paragraph of this Clause and without limiting the Contractor's responsibility in this regard, the minimum depth of cover during construction shall be as specified by the pipe manufacturer.

PSLE 5.2.2 Pipe culverts

Add the following:

"Unless otherwise stated in the Bill of Quantities or indicated on the drawing, pipes with ogee joints shall be used. Butt ended pipes will not be permitted.

Pipes with ogee joints, where they pass under roads and also on curved pipelines in verges, shall be wrapped with two layers of Hessian soaked in cementitious grout. The wrapping shall be 400mm wide and placed centrally over each joint.

Where pipes are cut, the ends shall be made good with an epoxy concrete mix so as to prevent rusting of the reinforcement or deterioration of the concrete."

PSLE 5.5.6 Benching

Delete "granolithic plaster" and replace by "concrete topping consisting of a 1:2:3 cement, sand and 7 mm stone mix by weight. The sand proportion may be varied between 1, 5 and 2, 5 to obtain ideal workability.

PSLE 5.8* INSTALLATION OF SUBSOIL / FLODRAIN DRAINAGE SYSTEM

The geopipe shall be placed at the bottom of the geonet with the channel section of the geopipe as the invert of the drain.

The geotextile filter jacket shall then be wrapped around the geopipe and stapled/joined at 300mm intervals. The complete system shall then be placed in the trench ensuring that during backfilling the fin remains vertical.

PSLE 6 TOLERANCES

“PSLE 6.6* PIPES INTO MANHOLES / CATCHPITS

Pipes may protrude up to 300 mm into a manhole / catchpit. This relaxation will only be permitted if the pipe does not have to be cut. The “dead space” formed at the end of the manhole is to be suitably benched off to prevent the collection of silt and rubbish.”

“PSLE 6.7* “RECORD” DETAILS

The Contractor shall submit as-built/record levels, distances between manholes and the grades of pipelines for which he requires payment, at the time he submits his monthly payment claim. A sample form is obtained from the Engineer.”

PSLE 8 MEASUREMENT AND PAYMENT

PSLE 8.2.1 Supply and lay concrete pipe culverts

Notwithstanding the stated provisions, bedding will be measured for payment in terms of the appropriate clauses of SABS 1200 LB and PSLB.

Add the following:

“The tendered rate shall also cover the cost of any additional work to wrap joints as specified in 5.2.2 and caulk lifting eyes.”

PSLE 8.2.8 Supply and install manholes, catchpits, and the like Unit: No

Delete the words “but excluding excavation and backfilling, which will be measured separately” and replace with “including dealing with any excavation in all materials (including disposal of surplus) which is additional to that measured under the item for pipe trench excavation (see subclause 8.2.3 of SABS 1200 DB)”.

Add to the contents of Clause 8.2.8 the following:

“(d) Inlets (type and depth range stated)

The rate shall cover the cost and dealing with any excavation (as if in sort excavation including disposal of surplus) that is additional to the measured under the item for pipe trench excavation, the supply of all labour, plant and materials required to complete the structures as inlet channelling, building in connecting pipes, any benching required and backfilling structures.”

PSLE 8.2.13* Subsoil / Flodrain Drainage System Unit: m

The composite drain will be measured linearly on slopes overall as laid. No deductions will be made for specials, but deductions will be made for the

internal length of manholes. Separate items will be scheduled for different diameters of pipes, where relevant.

The rate shall cover the cost of providing the Subsoil / Flodrain drain and the cost of laying, bedding, backfilling, jointing and making connections into manholes.

PSLE 8.2.14*Jointing with existing network Unit: Sum

The tendered sum shall include full compensation for the cost of all labour, plant, materials, excavation, backfilling, compaction and overheads to join the subsurface drains to the existing stormwater network.

PSLE 8.2.15*Breaking into existing manhole and installing new pipe

a) (State pipe diameter and type) Unit: Sum

b) (Etc for other diameters and types) Unit: Sum

The tendered rates shall include full compensation for the supply of all labour, plant and materials, making an opening in the existing manhole, installing the new pipe in the new opening, sealing around the pipe, breaking out the existing benching and channels where required and reconstructing them complete with rendering to suite the new pipe arrangement, disposing of all debris to the dumping site and backfilling around the manhole with selected material.

PSLE 8.2.16*Breaking into existing stormwater pipe, installing new pipe and building new manhole

a) (State pipe diameter and type) Unit: No

b) (Etc for other diameters and types) Unit: No

The tendered rates shall include full compensation for the supply of all labour, plant and materials, removing a section of the existing stormwater pipe, installing the new pipe, constructing the complete, new manhole, sealing around the pipes, disposing of all debris to the dumping site and backfilling around the manhole with selected material."

PSLE 8.2.17*Removing existing headwalls Unit: No

The rate shall include for all labour, plant and materials required for excavation for removing the existing headwall, loading and transporting to a spoil site, connecting of new pipe, benching where necessary and making good around the pipe and all necessary reinstatement of the connection.

PSM ROADS (GENERAL)**PSM 6 TOLERANCES****"PSM 6.4* DIMENSION AND LEVEL CONTROL**

The Contractor shall submit to the Engineer a record of the surface levels of the section of layer under consideration, prior to requesting inspection and acceptance control testing.

The levels shall be taken at chainage intervals and co-ordinates that coincide with those given on the drawings.

PSM 7 TESTING**PSM 7.1 GENERAL**

Notwithstanding the provisions of this Clause, the Contractor shall note that the random sampling method of TMH 5 for the spotting of positions for field density testing will not necessarily be applied by the Engineer.

Testing shall be carried out where in his opinion the density is suspect.

The Contractor shall further present the full width of the layer between the stated linear stake values for acceptance. Only in exceptional cases may partial widths be presented.

PSM 7.2 PROCESS CONTROL

Add the following:

"Process control to be carried out by the Contractor shall be executed by an independent testing laboratory approved by the Engineer."

PSM 7.3 ROUTINE INSPECTION AND TESTING

Add the following to Clause 7.3.1:

"All requests for acceptance control testing shall be submitted in writing to the Engineer. Each request shall clearly specify the exact location of the section and the description and type of the layer, and shall be accompanied by the dimension and level control data for the section under consideration (refer PSM 6.4), as well as the results of the Contractor's process control testing (refer 7.2).

On receipt of the aforementioned the Engineer will undertake, or arrange as the case may be, for the necessary inspection and acceptance control tests to be carried out to satisfy himself that the layer complies with the specification.

Testing will be carried out as expeditiously as possible and the results of tests made available within 48 hours from the time the request was made, plus the normal time required to do the test.

The written approval of the submitted section of a layer shall be obtained from the Engineer before the Contractor may proceed with the placing of material for the following layer. The Contractor shall also, before proceeding with the placing of the material for the following layer, make good any test holes left in the layer using material complying with the specification for that layer and compacting it to the specified density applicable to for that layer. Concrete shall not be used."

PSM 8 MEASUREMENT AND PAYMENT

Add the following:

"Should the layer submitted for acceptance control testing fail to comply with the specification, the Contractor shall, in the case where the tests arranged for by the Engineer were carried out by a designated laboratory (refer PSA 7.2), bear the invoiced cost of the tests. Conversely, should it be found that the layer complies with the specification, the cost of the acceptance control tests will be borne by the Employer. The cost of refilling and compacting the test holes shall be covered by the rate tendered for the construction of that layer."

PSME SUBBASE

PSME 1 SCOPE

Add the following

"All the requirements as specified for the construction of subbase shall, except where otherwise stated or ordered, apply to the stabilization of the in situ material as new subbase."

PSME 3 MATERIALS

PSME 3.2.1 Subbase material

Replace the contents of paragraph (a) with the following:

"a) The maximum particle dimension of the coarse aggregate shall not exceed 63 mm."

Replace the contents of paragraphs (d) and (e) with the following:

"(d) The CBR at 95% of modified AASHTO maximum density shall be at least 45 for unstabilised as well as for stabilised material prior to stabilisation or as directed by the Engineer.

e) The UCS at 7 days of each cement-stabilized material shall at 100% of modified AASHTO maximum density be as follows:

- For C3 cemented natural gravel : 1,50 MPa minimum
- For C4 cemented natural gravel : 0,75 MPa minimum"

With reference to Subclause d) (ii) and d) (iii), the regional factor for Port Elizabeth shall be taken as 0, 6.

PSME 3.3.1 General

Add the following to this Sub-clause:

"Where reference is made in this specification or the Standard Specifications to the cement specifications, e.g. 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 different cement types, the following new names shall be used as a guide but must be confirmed by the Engineer.

Cement Grade	Cement Type	Approximate old product name	New Alpha	New Blue Circle	New NPC	New PPC	New Slagment
52.5	CEM I	Rapid hardening	Rapid Hard	Duracast	Eagle Super		-
42.5R	CEM I	Rapid hardening	-	-	-		-
42.5	CEM I	OPC*	Portland Cement	Duratech	-	OPC	-
	CEM I	LASRC	-	-	-	LASRC	-
	CEM II A-S	PC15SL	-	-	Eagle Plus	-	-
	CEM II B-S	RH30SL		-	Eagle Plus	-	-
32.5R	-	-	-	-	-	-	-
32.5	CEM II A-V	PC15FA	All – purpose cement	-	-	Surebuild	-
	CEM II A-W	PC15FA	-	-	-	Surebuild	-
	CEM II A-L	-	All purpose cement	-	-	Surebuild	-
	CEM II B-V OR W	PC25FA/PFAC* *	-	Structcrete	-	Surecrete	-
	CEM II B-V OR W	PC25FA/PFAC* *	-	Duracrete	-	Surecrete	-
	CEM III A	PBFC	-	BFC	Eagle Pro	-	PBFG
	CEM III A	RHSL	-	-	-	-	RHSL
22.5	MC 22.5X	PFAC***	Multi-purpose cement	Durabuild	-	-	-
	MC 22.5X	PFAC***	-	Buildcrete	-	-	-
12.5	MC 12.5	Walcrete	Mortar cement	Walcrete	-	Masonry	-
	MC 12.5	Mortacem	-	-	-	-	-

PSME 5 CONSTRUCTION

PSME 5.1 PRECAUTIONS

Add the following to this Sub-clause:

“No stabilization shall be carried out during falling temperatures when the ambient air temperature falls below 7°C or during rising temperatures when the ambient air temperature is below 3°C.

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The Contractor shall be responsible for taking the necessary measures in this connection, and especially to refrain from stabilizing when such temperatures become probable.

When a sudden unforeseen temperature drop to a level below this limit occurs, the stabilized layer shall be covered with the material required for the next layer to be constructed.

All stabilized layers damaged by frost or by the formation of ice in the layer shall be removed and replaced by the Contractor at his own expense.

The Contractor shall make allowance for these requirements in his construction programme, and no claims in this connection will be considered.”

The Contractor shall at all times supply all workers exposed to chemical stabilizing agents with approved protective apparel, eyewear and masks, and no person without such apparel, eyewear and masks shall be permitted to work with or be exposed to the chemical agents. Precautionary measure shall also be taken to ensure that any livestock and the public will not be exposed to the chemical agents blown by the wind or under similar circumstances”

PSME 5.2.2 Borrow pits

Insert the words “designated by the Engineer and” between the words “pits” and “established” in the first line.

PSME 5.4.1 Placing

The compacted thickness of the subbase for the various areas shall be that shown on the drawings.

PSME 5.4.4 Compaction

Notwithstanding the requirements of Clause 5.4.4.2 the subbase shall be compacted to 95% or 97% of modified AASHTO maximum density, as the case may be.

PSME 5.7 TRANSPORT

Delete the entire contents and replace with:

“The provisions and contents of subclause PSD 5.2.5 shall apply.”

PSME 6 TOLERANCES**PSME 6.1.1 General**

Add the following:

“For layers, constructed of subbase quality material, on which the bituminous surface will be placed, the tolerance for dimensions and level shall be as set out in SABS 1200 MF Subclauses 6.1.2 to 6.1.6 inclusive.”

PSME 6.3 STABILIZATION

Add the following to this Clause:

“The coefficient of variation shall not exceed 0, 3 (30%) for mixing in place and 0, 2 (20%) for plant mixed material, calculated as follows:

$$\frac{S_n}{X_n} \times 100$$

Where:

Xn is the average and Sn is the standard deviation of stabilizing content per lot”

"PSME 6.4* DIMENSION AND LEVEL CONTROL

The requirements of PSM 6.4 shall apply."

PSME 8 MEASUREMENT AND PAYMENT**PSME 8.1 BASIC PRINCIPLES**

Insert a semi-colon in the first line of paragraph b) after the words "will be paid for once only" and delete the rest of the paragraph.

Replace the contents of paragraph c) with the following:

“c) that except as provided for in d) below, the freehaul will be that specified under subclause 5.7 (as amended).”

Add the following to paragraph d):

"A commercial source shall be held to include any off site sources or borrow pits selected the Contractor.

Further, no additional payment will be made for the temporary stockpiling of material from commercial sources, the class of excavation, method of processing (except stabilizing) or for overhaul.”

Add the following:

- "e) The requirements of PSM 8.2 shall apply. The Contractor shall further make provision in the rates tendered for the construction of the subbase, for the cost of his own process control testing and the cost of complying with PSME 6.4."

Replace the contents applicable to subitem (a) of Clause 8.3.2 with the following:

"The rate for (a) shall include full compensation for excavating and selecting subbase material, for loading and transporting the material within the free-haul distance, and for either placing the material on the road or stockpiling the material for later use. When material is stockpiled, the rate shall include compensation for shaping and grading the stockpile so that it is free-draining."

PSME 8.3.3 Construct the subbase course/shoulders/gravel wearing course with material from commercial sources or designated borrow areas

Replace the heading of Clause 8.3.3 with the following:

"8.3.3 Construct the subbase course/shoulders/gravel wearing course with material from commercial sources Unit: m³

Add the following:

"This item shall also apply to the construction of subbase course/shoulders/gravel wearing course with material from borrow pits selected by the Contractor.

No additional payment will be made for difficult work or hand operations in confined areas.

The rate tendered for subbase shall further differentiate between subbase beneath vehicular trafficked areas (rank and roadways) and subbase beneath pedestrian trafficked areas."

PSME 8.3.9 Overhaul (haul exceeding 2 km)

Delete the entire clause. The terms, provisions and principals of 8.1 and PSME 8.1 shall apply.

PSMF BASE

PSMF 3 MATERIALS

PSMF 3.3 PHYSICAL AND CHEMICAL PROPERTIES

PSMF 3.3.1 Natural gravel (stabilised or unstabilised)

Replace the contents of paragraph (a) with the following:

"(a) The maximum particle dimension of the material shall not exceed 63 mm."

PSMF 3.3.2 Graded crushed stone

Add the following after the words SABS 1083:

"for 37,5 mm stone".

PSMF 5 CONSTRUCTION

PSMF 5.4.1 Placing

Add the following:

"The compacted thickness of the base shall be as indicated on the drawings."

PSMF 5.4.4.2 Compaction

Delete 98% and 97% and replace with 102%.

Add the following:

"(c) Where the compaction specified is in apparent density, the base material shall be compacted to 86% of apparent density which shall determined as follows:

(i) Apparatus

- Balance to measure 5 kg accurately to within 0,5 g
- Pycnometer (e.g. a preservative jar with a flat ground rim)
- Temperature-controlled bath with thermostat capable of maintaining the temperature at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- Thermometer (0°C - 100°C)
- Drying oven capable of maintaining temperatures between 105°C and 110°C
- Towels
- 10% Teepol solution

(ii) Method

Take 3 000 g to 4 000 g of the material from a density hole in the road. All the material obtained from the hole should preferably be used. If there is too much for one pycnometer, the material may be divided between two pycnometers.

Dry the material to a constant mass in an oven at 105°C to 110°C.

Ensure that the pycnometer is clean, and determine its mass together with that of a marked sheet of glass.

Place the dried sample in the pycnometer and determine the combined mass of the pycnometer, glass sheet and sample. (The sample should not be more than half the pycnometer's volume.)

Add clean water at a temperature of 25°C to the pycnometer until it is approximately three quarters full.

Add three drops of the 10% Teepol solution to the water, close the pycnometer and shake thoroughly for 1 to 2 minutes.

Fill the pycnometer to near the brim with water at a temperature of 25°C and place it in a thermostatically controlled bath at 25°C. Leave for 30 minutes without disturbing.

Remove the pycnometer without shaking or jarring it and place it on a spread towel. Fill with water at a temperature of 25°C and slide the glass sheet carefully over the brim from one side. Make sure that no air bubbles are trapped beneath the glass sheet. Dry the pycnometer and the glass sheet carefully all over and determine the mass of the filled pycnometer plus the glass sheet.

Remove the contents of the pycnometer and clean and fill it in the same manner with water at a temperature of 25°C. Dry the pycnometer and determine the mass of the pycnometer filled with water together with the glass sheet.

(iii) Calculation

The apparent density of the material is calculated as follows:

Mass of pycnometer + glass sheet = a

Mass of pycnometer + glass sheet + material = b

Mass of material only = (b - a)

Mass of pycnometer + material + water +

glass sheet = c

Mass of pycnometer + water + glass sheet = d

Apparent density of material = $(b - a) / \{(d - a) - (c - b)\}$

NOTES:

- (1) Do not add any chemicals other than the Teepol solution to the water.
- (2) No suction should be applied to the water to remove air.
- (3) The temperature of the water should be $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ and no other temperature should be used.
- (4) When two pycnometers are used, the apparent density is calculated from the weighted average of the two results."

PSMF 5.9 TRANSPORT

Replace the contents of this Clause with the following:

"All movement of material will be considered as free-haul. No haulage cost will be paid."

PSMF 6 TOLERANCES

PSMF 6.1.2 Grade

Delete the contents of Clauses (a) and (b) and replace by "the height of the edge of the channel above the top of the completed base is not less than the minimum thickness of asphalt surfacing, i.e. 5 mm less than the specified thickness. (Refer subclause 6.3.4 of SABS 1200 MH)"

PSMF 6.1.5 Cross-section

Replace "25 mm" in the second line of this subclause with "10 mm".

PSMF 7 TESTING

PSMF 7.3.2 Routine inspection and testing

Replace subclause 7.3.2 with the following:

"The density measured at all test holes shall be a minimum of 102% of modified AASHTO maximum density for the lot to be acceptable."

Add the following new subclause:

“7.3.3 Where the compaction specified is in apparent density, the contents of 7.3.2 shall apply but Table 4 shall be replaced with:

TABLE 4 - APPARENT DENSITY OF BASE

Specified apparent density, %	Number of tests per lot	Minimum average density, %	Minimum value for any single test, %
86	4	86,1	82,7
	5	86,4	82,6
	6	86,5	82,4
	7	86,7	82,3
	8	86,8	82,2
	9	86,9	82,1

“

PSMF 8 MEASUREMENT AND PAYMENT

Replace the heading of Clause 8.3.3 with the following:

“PSMF 8.3.3 Construct base with material from commercial sources compacted to 102% of modified AASHTO maximum density”

Add the following:

“No additional payment will be made for difficult work or hand operations in confined areas.”

PSMF 8.3.9 Overhaul

Delete the contents and replace with:

“The terms, provisions and principals of subclause 8.3.9 of SANS 1200 ME and PSME 8.3.9 shall apply.”

PSMJ SEGMENTED PAVING**PSMJ 5 CONSTRUCTION****PSMJ 5.1 PREPARATION**

Notwithstanding the provisions of this Clause, the construction of the earthworks and controlled layers shall be completed in accordance with the applicable requirements of SABS 1200 DM and SABS 1200 ME, and any amendments thereto, as well as the details shown on the drawings.

PSMJ 5.4 LAYING OF UNITS

Notwithstanding the provisions of this Clause, filler units shall be cut such that they are close fitting. No chopping or breaking of the units will be permitted.

PSMJ 5.5 FILLING GAPS IN UNIT PATTERN

Delete the contents of this Clause. Clause 5.4 and PSMJ 5.4 shall apply.

PSMJ 8 MEASUREMENT AND PAYMENT**PSMJ 8.2.2 Construction of Paving Complete**

Add the following:

"Jointing sand applied to concrete interlocking pavers shall include a 2.5% cement stabilising agent and the rate tendered shall include all costs associated with the addition of this stabilising agent."

PSMJ 8.2.3 Cutting units to fit edge restraints

Delete the word "raking" in the first sentence of this Clause.

Add the following:

"The cutting of units to suit radii > 1,0m shall be classified as straight cutting."

PSMJ 8.2.6 Laying pavers on existing concrete slab bedded on stabilised grit screedm²

Add the following new clause:

"Pavers to be laid on the existing concrete slab will be bedded on a 20 mm stabilised (1:10) cement grit (smaller than 5mm) screed.

If additional screed is required, over and above the 20mm already allowed for in order to achieve the desired longitudinal grades, then this additional screed will be paid for as an extra over item "



TENDER NO: MLM 11/2020/21

PSMK KERBING AND CHANNELLING**PSMK 2 INTERPRETATIONS****PSMK 2.3 DEFINITIONS**

Add the following definitions:

“Backing The supporting concrete behind the edge of the precast kerb, as shown on the drawings and PSMK 2.

Screed Screed shall have the corresponding meaning as bedding material, Refer PSMK 3.9.”

PSMK 3 MATERIALS**PSMK 3.2.1 General**

Replace the contents of this Clause with the following:

“Refer to the Drawings as well as the NMBM’s Standard Infrastructure Details for kerb and channel details.”

PSMK 3.7.2 Concrete

Notwithstanding the requirements of this Clause, the Contractor shall take note that the acceptability of extruded kerbing and channelling will be evaluated on the basis of the compressive strengths of cores taken. The Contractor shall therefore at his own discretion increase the grade of concrete used.

PSMK 3.8 CURING COMPOUND

Notwithstanding the provisions of this Clause, the requirements of PSGA 3.8 shall apply.

PSMK 3.9 BEDDING MATERIAL

Replace the contents with the following:

“The material on which precast concrete kerbs and channels are bedded shall consist of a 1 to 8 cement sand mix, or class 20/19 concrete where the layer is more than 30 mm thick. Refer also PSMK 2”.

"PSMK 3.10* CONCRETE FOR EDGING STRIPS

The requirements of Clause 3.7 and PSMK 3.7.2 shall apply to concrete for edging strips."

PSMK 5 CONSTRUCTION**PSMK 5.1 EXCAVATION AND BEDDING**

Delete the first paragraph viz. "Trenches for grade."

PSMK 5.2 PRECAST CONCRETE KERBING AND CHANNELLING

Replace "50 mm" in the second line with "10 mm minimum". For bedding more than 30 mm thick, the requirements of PSMK 3.9 shall apply.

Replace "15 MPa" in the last line with:

"(Class 20/19 concrete)"

"PSMK 5.2.1* Precast Concrete Kerbing and Cast-in-situ Concrete channelling

After the precast kerbs have been laid to formwork for the channelling shall be set up. Expansion joints shall be allowed for at approximately 8 metres intervals, i.e. opposite the joint between the kerbs. The principles of Clause 5.4 shall apply to the construction of cast-in-situ channelling.

PSMK 5.8 MACHINE-LAID CAST-IN-SITU (EXTRUDED) KERBING AND CHANNELLING

Before commencing kerb laying on the site, the first 50m length of kerb and channel to be constructed shall be regarded as trial kerb and channel. The Contractor shall demonstrate in the trial length the methods he proposes to use for the construction of the kerb and channel, including joints, texturing, the achievement of a smooth surface and dense fully compacted concrete. It may be constructed either in the recognised position in a road or elsewhere on the site in which case it shall be demolished, broken out and removed at the Contractor's expense.

The trial kerb and channel shall be constructed with the plant and equipment to be used on the works and the equipment's motion forwards and the handwork carried out on the extruded section shall be so controlled and used as to produce a kerb and channel to the shape, lines and levels specified.

The time taken to lay the test strip shall be recorded, which in the event of acceptance, shall be used to calculate a rate of extrusion which shall not be exceeded without the permission of the Engineer.

If the concrete in the trial strip fails to meet the test requirements, the Contractor may, at his own cost, cut further cores from the kerb and or channel up to a maximum of one core per 100m length. The strengths obtained on such cores, together with those tested on the instruction of the Engineer, shall be used to test compliance with the strength requirements.

The Contractor may, unless advised of any deficiencies in the trial kerb and channel, proceed with kerbing as soon as acceptable core test results are obtained.

In the event of deficiencies in the trial kerb and channel, the Contractor shall, at his own expense, demolish the rejected sections and remove to the designated tip site and repeat the 50m long trial strip. This process shall be continued until the Contractor has produced kerb and channel in accordance with this specification. He may then proceed with kerb and channel construction proper. Any unacceptable trial length shall be broken out and removed to spoil, at the Contractor's expense before any subsequent trial length is permitted to commence.

Core test holes shall be filled with 30 MPa concrete mixed with a suitable adhesive compound.

No other means of testing the concrete will be considered and any kerb or channel not complying with all the requirements of the specification shall be broken out, removed to spoil and replaced at the Contractor's own expense.

The Contractor shall ensure that no change of circumstances or conditions is made to jeopardise the quality of the kerb and channel under construction. If, in the opinion of the Engineer, this does occur, he may order the construction of a further trial length of 50m of kerb and channel in accordance with the requirements of this specification. Work on the kerb and channel proper shall not proceed until a trial strip has been constructed in accordance with the requirements of this specification. No claims for delays will be considered by the Engineer on account of further trial lengths of kerbing being ordered.

PSMK 5.8.3 Subbase preparation

Delete in the first line from: "500 mm beyond" to "as relevant" and replace by "150 mm beyond the back face of the kerb". Note this dimension applies to the compaction width required for the road layer.

Notwithstanding the provisions of this Clause, where kerbing and channelling is to be constructed along existing travelled ways, the material at the founding level shall be trimmed to the required line and level and compacted to give a firm surface.

PSMK 5.8.5 Curing

Notwithstanding the provisions of this Clause, curing shall be carried out in accordance with the requirements of PSGA 5.4.7.

PSMK 5.11 TRANSITION SECTIONS AND INLET AND OUTLET STRUCTURES

Delete the words "and with the requirements of the Project Specification" in the second paragraph.

"PSMK 5.13*PRECAST CONCRETE KERBING AND CAST IN SITU CONCRETE CHANNELLING

Precast concrete kerbing and cast in situ concrete channelling shall be constructed in accordance with the details shown on the drawings and the applicable requirements of Clauses 5.2 to 5.10.

The formwork for the channelling shall be set up after the precast kerbs have been laid. The channelling shall be cast in alternate sections approximately 2m in length and the construction joints so formed shall coincide with joints in the precast kerbing, except that an expansion joint in lieu of a construction joint shall be provided at approximately 8m intervals. Where applicable, expansion joints in the channelling shall coincide with those in the precast kerbing."

"PSMK 5.14*EDGING STRIPS

Edging strips shall be constructed in accordance with the details shown on the drawings and the applicable requirements of Clauses 5.2 through to 5.10."

The formwork for the channelling shall be set up after the precast kerbs have been laid. The channelling shall be cast in alternate sections approximately 2m in length and the construction joints so formed shall coincide with joints in the precast kerbing, except that an expansion joint in lieu of a construction joint shall be provided at approximately 8m intervals. Where applicable, expansion joints in the channelling shall coincide with those in the precast kerbing."

PSMK 6 TOLERANCES**PSMK 6.1 CONCRETE KERBING AND CHANNELLING**

Replace the permissible deviation "0, -10" applicable to item b (1) with "±10".

Add to item b (1):

"provided the base layer thickness is not prejudiced and no adverse grade results."

PSMK 7 TESTING**PSMK 7.2.2 Alternative tests**

Delete in Clause 7.2.2.2 all references to cubes and cube testing.

Add to second line of Clause 7.2.2.2 after "SABS Method 865" the following:

"The numerical value of the compressive strength of the core used for adjudication shall be that value determined in accordance with Clause 6.3 of SABS Method 865."

Delete in fourth line of Clause 7.2.2.2: "22 MPa (i.e. less than 25 - 30 MPa)" and replace by: "20 MPa".

PSMK 7.3 RESPONSIBILITY FOR COSTS OF TESTING, ETC

Delete this Sub-clause.

PSMK 8 MEASUREMENT AND PAYMENT

PSMK 8.1 BASIC PRINCIPLES

Replace the second sentence of Clause 8.1.1 with the following:

"Deductions will be made for transition kerb and channel pieces, structures and pedestrian slopes, which will be measured separately."

Replace the heading and amend the contents of Clause 8.2.1 as follows:

PSMK 8.2.1 Concrete kerbing Unit: m

Add after "and for bedding" in the second line of Clause (b), "irrespective of variations to the thickness of the bedding".

Replace "7.2" in the second line of Clause (b) with "7.1".

Add at the end of Clause (b) "as well as for the supply and placing of the class 20/19 concrete backing, irrespective of variations to the thickness of the backing".

Replace "5.8.2" in the third line of Clause (e) with the following: "5.8.3"

Replace "1000m" in the second last line of Clause (e) with "600m"

Delete the following in the second last line of Clause (e):

"and as specified in clause 7.2"

PSMK 8.2.2 Concrete kerbing and channelling combined Unit: m

Add: "Acceptance of work that is substandard in measured compressive strength shall be subject to reduced payment at the following percentages of the tendered rate for the item.

Measured compressive strength of individual core % of full payment

15 MPa up to 20 MPa	20
Less than 15 MPa	Nil"

Replace the heading and contents of Clause 8.2.3 with the following:

"PSMK 8.2.3 Tests on cast in situ of extruded kerbing and channelling:

- (a) Core strength tests.....Unit: No
(b) Set of three cores.....Unit: No

The rate tendered shall cover the cost of preparing a test specimen, despatching to an approved laboratory, testing and making good.

A test, the results of which show that the kerbing fails to comply with the requirements of the specification will irrespective of whether the kerbing is accepted for payment in terms of PSMK 8.2.2, not be measured for payment.

Note:

The Engineer reserves the right to arrange for testing if the Contractor fails to expeditiously do so, or to undertake all testing, in which case the rates tendered shall not apply. If the coring and testing is carried out via the Municipal Road Laboratory the Contractor will be debited with the cost of the test when the measured compressive strength is less than 20 MPa.”

PSMK 8.2.6.1 Ancillaries

Add to Clause 8.2.6.1: “The unit of measurement of 2 metre length of kerb and channel transition between mountable and barrier type kerb and channel and between mountable or barrier type and the precast support kerb at the catchpit shall be per number.”

PSMK 8.2.15*Construct concrete pedestrian slope complete as shown on PSMK 8/7
Unit: No

The unit of measurement shall be the number of pedestrian slopes constructed as detailed on PSMK 8/7 and shall include all transition pieces, sunken kerbs and channelling. The average width of the road for the motor slope can be taken as 5,5 meters.

The rate tendered shall cover the cost of all labour, materials, plant and incidentals required to construct the concrete sloped area as detailed on PSMK 8/7 inclusive of all excavations, for supplying 150mm subbase quality material from commercial sources compacted to 95% of modified AASHTO maximum density placing to the required levels, watering, shaping and compaction, supplying and placing concrete, forming of joints, screeding, surface finishes as well as for the disposal of all surplus and waste material.

PSMK 8.2.16*Construct residential concrete motor slope complete as shown on PSMK 8/6
Unit: No

The unit of measurement shall be the number of residential motor slopes constructed as detailed on PSMK 8/6, based on a ramp width of 3 m, and shall include all transition pieces, sunken kerbs and channelling.

The rate tendered shall cover the cost of all labour, materials, plant and incidentals required to construct the concrete sloped area as detailed on

PSMK 8/6 inclusive of all excavations, for supplying 150mm subbase quality material from commercial sources compacted to 95% of modified AASHTO maximum density placing to the required levels, watering, shaping and compaction, supplying and placing concrete, forming of joints, screeding, surface finishes as well as for the disposal of all surplus and waste material.

An extra-over payment item shall be provided to allow for motor slopes with additional ramp widths.

PSMM ANCILLARY ROADWORKS

PSMM 3 MATERIALS

PSMM 3.2 ROAD SIGNS

PSMM 3.2.1 General

Replace “South African” with “SADC” in the first sentence.

Replace “Council for Scientific and Industrial Research” in footnote 1 with “Government Printer”.

PSMM 3.2.2 Structural steel

Delete the words "except that they shall be of D-shape cross-section" in the first paragraph.

Add the following:

"All steel sign supports shall be hot-dip zinc coated (galvanised) in accordance with SANS 763 for type A1 or B2 articles, as may be applicable."

PSMM 3.2.4 Steel plate

Replace the entire contents of this Clause with the following:
“

a) Steel plate

Steel plate for road signs shall be 1,40 mm thick prepainted galvanized steel plate (Iscor G275 Chromadek or approved equivalent), which has been treated on both sides with an epoxy primer followed by a silicone polyester top coat. The total dry thickness of the treatment shall be at least 25 µm.

The reverse side of a stop sign and all its derivatives shall be painted white. The reverse side of all other signs shall be dark grey.

Where a reflectorised road sign is required, its reverse side shall be painted with a dull grey prime coat and the face with only the specified top coat.

b) Steel Profiles

Standard sign profiles shall be 200 mm sections with a thickness of 1,0 mm, manufactured from prepainted galvanized mild steel substrate (Iscor G275 Chromodek or approved equivalent), and shall comply with the details on the drawings.”

PSMM 3.2.8 Paints and protective coatings

PSMM 3.2.8.1 Structural steel sign supports and sign face frames

Replace the contents of this Clause with the following:

“The reverse side of all R1 Stop-signs and all its derivatives shall be painted white. The backs of all other road sign faces shall be painted dark grey. The colour code of the paint shall be code No G13 according to the SANS 1091 classification.

No galvanised steel supports shall be painted. All surface damage to galvanising shall be made good with a proprietary galvanising product.”

PSMM 3.2.9 Retro-reflective material

Delete subclause 3.2.9 and replace with:

“Retro-reflective material shall be supplied in the following grades and shall comply with the requirements of SABS 1519 and the adhesion requirements of CKS 191:

- Class I material – 7 year warranty grade
- Class II material – 10 year warranty grade
- Class III material – 15 year warranty grade
- Class IVB material – 15 year warranty grade

The specific commercial product used shall be subject to the approval of the Engineer.

No materials from different manufacturers shall be overlaid without specific approval of the Engineer and subject to such conditions as the Engineer shall impose.

Each sign shall be completed with the retro-reflective material from one and the same roll. No sign shall be manufactured from retro-reflective material from different rolls.

The material shall be supplied with a pressure sensitive or heat applied adhesive backing protected by a removable lining. The adhesive backing shall be applied to the sign face in strict accordance with the retro-reflective material manufactures specifications.”

PSMM 3.2.12* Street Name Boards

Street Name Boards shall be as specified on NMBM Municipal Standard Detail Drawings PSMM 54.

PSMM 3.3 ROAD MARKING MATERIALS**PSMM 3.3.1.1 Non reflectorised paint**

Replace “SABS 731” with “SANS 731-1 : 1995”

Add the following:

“The paint shall be Type 1, 2 or 3 and shall be of a drying classification Class 1 in accordance with SANS 731-1”. The paint shall be Plascon Hysheen Road and Runway Marking Paint Products TP24, 41 or 88 or similar approved.

The possible use of Plascon Hysheen Aquafest Road Marking Paint WTP1 as the final application on-site shall be considered at the end of the Defects Liability Period”.

PSMM 3.3.1.2 Reflectorised paint

Replace this Clause with the following:

“Reflectorised paint shall comply with the requirements of PSMM 3.3.1.2 as well as the retro-reflectivity requirements set in SANS 731-1 paragraph 4, 17.3 for new markings.”

PSMM 3.3.1.3 Colour

Delete in the first line from “white or an acceptable match” and replace with:

“G80 Cloud White, B49 Golden Yellow and A11 Signal Red as shown in SABS 1091.”

PSMM 5 CONSTRUCTION**PSMM 5.2 ROAD SIGNS****PSMM 5.2.1 Manufacturing****PSMM 5.2.1.2 Backing plates and boards**

Add in the first sentence after “drawings” the following:

“and SADC Road traffic signs manual, Volume 4 to comply with the National Road Traffic Regulations, 2000.”

Delete “...steel plate...” in second sentence and replace with:

“1, 40 mm thick prepainted galvanized steel plate (Isacor G275 Chromodek or approved equivalent), 1 mm thick 200 mm prepainted galvanized mild steel profiles (Isacor G275 Chromodek or approved equivalent),”

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 Engineer with a 100 mm x 150 mm 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.

Chromadek section shall be assembled in accordance with the details on the Drawings.

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 a practical visual match of the specified colour.”

PSMM 5.2.2.5 Painting of road signs

Delete the entire Clause and replace with the following:

“All sign faces shall be faced with retro-reflective material. Painted front sign faces shall not be used.

Where applied to Chromadek sections, retro-reflective material shall be applied as specified in Clause PSMM 5.2.12 of this project Specification.”

Road sign boards shall be manufactured by a recognised manufacturer of road signs.

Retroflexive material shall be affixed to the road sign board face in strict accordance with the requirements and specifications of the retro reflective sheeting manufacturer.

No silk-screening of road sign faces shall be acceptable other than the screening of black symbols on Regulatory or warning signs.”

PSMM 5.2.4.2 Erection

Add the following:

“Vertical clearances for all signs shall be at the preferred height of 2.1 m unless otherwise specified on the design drawings.”

PSMM 5.3 ROAD MARKINGS

PSMM 5.3.2 Surface preparation

Insert the following before the last sentence:

“The areas where new markings shall be painted shall be thoroughly cleaned by acid pickling with a diluted product like Aquasolv Degreaser or similar, scrubbing with a steel brush and rinsing it with fresh water.

All run-off shall be intercepted and treated prior to wasting into a stormwater system. No paint shall be applied on wet or untreated concrete surfaces. The need to apply a primer prior to the application of the paint shall be assessed before the final markings are applied.”

Add the following:

“At the end of the Defects Liability Period the markings shall be repainted on cleaned and degreased surfaces in accordance with the paint manufacturer’s specifications.”

PSMM 5.3.3 Setting out of road markings

In the second paragraph, replace “Road Traffic Ordinance”, and “South African” with (National Road Traffic Regulations, 2000” and “SADC” respectively.

PSMM 5.5* STREET NAME BOARDS

Poles shall be erected at the positions shown on the drawings and name blades attached as ordered. The correct spelling of the names of the streets, etc. to appear on the blades will be supplied in writing by the Engineer.

PSMM 8 MEASUREMENT AND PAYMENT

PSMM 8.3.1 Sign Faces with etc.

Delete the entire Clause and replace with the following:

“PSMM 8.3.1 Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from:

- a) Prepainted galvanised steel plate (Chromadek 1, 4 mm thick) or approved equivalent (Sign number, size and name stated)..... Unit: No

The unit of measurement shall be the number of signs supplied and erected.

The tendered rate shall include and cover the cost of supplying and erecting the complete sign, for procuring and finishing all the materials, and for manufacturing and supplying the completed road sign, including amongst others the supporting framework, reinforcement, cross-bracing,

struts, fixing brackets, angle-irons, channel profiles, galvanizing (if specified), painting, retro-reflective or semi-matt black lettering, symbols, numbers, arrows, emblems and borders, for attaching the road sign board to a support structure, or to an overhead road sign structure, or to an overbridge, and for transport, handling, etc necessary for the manufacture, completion, delivery and installation of the road sign board complete as specified.

The rates tendered shall further include full compensation for the additional cost of providing retro-reflective background, symbols, lettering numbers, arrows, emblems and borders of the type specified in each case.

- b) Prepainted galvanised steel profile (200 mm high, Chromadek 1, 0 mm thick) or approved equivalent (Sign number, size and name stated).Unit:
No

The unit of measurement shall be the number of signs supplied and erected.

The tendered rate shall include and cover the cost of supplying and erecting the complete sign, for procuring and finishing all the materials, and for manufacturing and supplying the completed road sign, including amongst others the supporting framework, reinforcement, cross-bracing, struts, fixing brackets, angle-irons, channel profiles, galvanizing (if specified), painting, retro-reflective or semi-matt black lettering, symbols, numbers, arrows, emblems and borders, for attaching the road sign board to a support structure, or to an overhead road sign structure, or to an overbridge, and for transport, handling, etc necessary for the manufacture, completion, delivery and installation of the road sign board complete as specified.

The rates tendered shall further include full compensation for the additional cost of providing retro-reflective background, symbols, lettering numbers, arrows, emblems and borders of the type specified in each case."

PSMM 8.3.8* Dismantling and disposal of ground mounted road signs

- (a) Sign panels of all materials, with surface area of:

(i) up to 2 m ²	m ²
(ii) exceeding 2 m ² but not 10m ²	m ²
(iii) exceeding 10 m ²	m ²

- (b) Sign supports (all diameters) No

The unit of measurements shall be the square metre of sign panels of all materials in each size group dismantled and disposed of.

The unit of measurements shall be the number of sign supports dismantled and disposed of.

The tendered rate shall include full compensation for dismantling and disassembling the road signs as specified, loading, transporting, off-loading and disposing of the materials as required by the Engineer. They shall also include compensation for restoring the site where the road signs have been dismantled.

The tendered rate for 8.3.8(b) shall also include full compensation for demolishing the concrete footings of existing signs to at least 200 mm below the adjacent ground level, disposing of the resulting debris at approved dumping sites provided by the Contractor, and cutting timber or steel support structures at not less than 200 mm below the adjacent ground level.”

PSMM 8.3.9* Dismantling and disposal of overhead road signs with a surface area of:

- (a) exceeding 2m² but not 10m² m²
- (b) exceeding 10m² m²

The unit of measurement shall be the square metre of sign panel in each size group dismantled and disposed of.

The tendered rate shall include full compensation for dismantling the road sign as specified, loading, transporting, off-loading and disposing of the signs as required by the Engineer.”

PSMM 8.3.10* Extra-over item 8.3.4 for hard rock excavation m³

The unit of measurement shall be the in-situ cubic metre of rock excavated within the excavation limits specified in item 8.3.4.

The tendered rate shall include full compensation for the additional cost of excavating in rock.”

PSMM 8.4.1 Non-reflectorised paint, etc

Delete unit rates in subitem (a) and (b) “...km.” and replace with “m”.

Add new subitem as follows:

- (f) Red lines (broken and unbroken) (width of line indicated) m

Amend the last line of the last sentence from “...markings...” and replace with “...and including the setting out and premarking of lines.”

“PSMM 8.6* Removal of existing, temporary or permanent road markings by:

- (a) Sandblasting..... m²
(b) Overpainting as temporary measurem²

The unit of measurement shall be the square metre of road marking removed or obliterated.

The tendered rate shall include full compensation for the necessary equipment, labour and materials for any specific protection measures, accommodation of traffic, and the cleaning of the area of all dust, all as specified.”

PART E PROVISION OF THE TEMPORARY WORKFORCE

CONTENTS

E1	SCOPE
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E3	PERMITTED SOURCES OF TEMPORARY WORKERS
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E9	LABOUR RELATIONS AND WORKER GRIEVANCE PROCEDURES
E10	THE SUBCONTRACTORS' WORKFORCES
E11	MEASUREMENT AND PAYMENT

E1. SCOPE

This Specification covers the provisions and requirements relating to the provision of the temporary workforce.

E2. INTERPRETATIONS

E2.1 Supporting Documents

The Tendered Rules, Conditions of Contract, Standard and Construction Specifications, Drawings and statutory minimum requirements relating to the employment and remuneration of labour shall *inter alia* be read in conjunction with this Specification.

E2.2 Definitions and abbreviations

For the purposes of this specification, the definitions given in the Conditions of Contract, the Standard Specifications and the Construction Specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

(i) "Key Personnel" means all contracts managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators, artisans and the like, and all other personnel in the permanent employ of the Contractor or Subcontractor who possess special skills and/or who play key roles in the Contractor's or Subcontractor's operation

(ii) "Project Committee" means a committee consisting of the Employer, the Engineer, the Contractor, (or their nominated representatives) as well as representatives of the temporary workforce, which is convened from time to time at the discretion of the Engineer, for the purposes of acting as an avenue for effective communication and liaison between all the parties referred to, in all matters pertaining to the Contract

(iii) "Subcontractor" means any person or group of persons in association, or firm, or body corporate (whether formally constituted or otherwise) not being the Contractor, to whom specific portions or aspects of the Works are sublet or subcontracted by the Contractor in accordance with the provisions of the Contract

(iv) "Worker" for the purposes of this Specification means any person, not being one of the Contractor's key personnel, nor any key personnel of any Subcontractor, who is engaged by the Contractor, a Subcontractor or the Employer to participate in the execution of any part of the Contract Works and shall include unskilled labour, semi-skilled and skilled labour, clerical workers and the like

(v) "Workforce" means the aggregate body comprising of all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all Subcontractors

(vi) "Liaison Officer" means a representative from the temporary workforce, duly elected by them, to act on their behalf and through whom all matters pertaining to the temporary workforce can be channelised.

E2.3 Status

Where any provisions or requirements of this Specification are in conflict with anything elsewhere set out in the Contract, the provisions and requirements of this Specification shall take precedence and prevail.

E3. Permitted Sources Of Temporary Workers

The Contractor shall as far as possible make optimum use of the human resources outside his own workforce and the workforces of all Subcontractors. The temporary workforce which is to be used in the execution of the Works in terms of Part A may consist of the workers of various communities, and shall not be bound to one particular community.

E4. EMPLOYMENT RECORDS TO BE PROVIDED

The Contractor shall maintain accurate and comprehensive records of all workers engaged on the Contract and shall provide the Engineer at monthly intervals from the commencement of the Contract, with interim records substantiating the actual numbers of employment opportunities which have been generated to date and the amounts actually paid in respect thereof. Such interim records shall be in a format approved by the Engineer.

The Contractor shall, on completion of the Contract, and as a pre-requisite event to the release of any retention money in terms of the Conditions of Contract, provide the Engineer with copies of the Terms of Employment as well as independently audited documentary evidence of the total number of temporary and permanent employment opportunities actually generated during the Contract.

E5. VARIATIONS IN WORKER PRODUCTION RATES

Notwithstanding anything to the contrary as may be stated in or inferred from any other provision of this Contract, the Contractor shall not be entitled to any additional payment or compensation whatever, in respect of any differences as may result between the production rates actually achieved by workers in the course of the execution of the Contract Works and those production rates on which he has based his Tendered.

E6. TRAINING OF THE TEMPORARY WORKFORCE

Selected members of the workforce are to be provided with structured training in accordance with the provisions of Part F.

The Contractor shall make all necessary allowances in his programme of work to accommodate and facilitate the delivery of such structured training and shall comply fully with the requirements of Part F.

The provision of structured training as described in Part F shall not relieve the Contractor of any of his obligations in terms of the Conditions of Contract and the Contractor shall remain fully liable for the provision, at his own cost, of all training of the workforce, additional to that as provided for in Part F, as may be necessary to achieve the execution and completion of the works strictly in accordance with the provisions of the Contract.

E7. RECRUITMENT AND SELECTION PROCEDURES

The Contractor through the Project committee shall be fully responsible for the recruitment and selection of workers to constitute the temporary workforce.

The Contractor shall advise the Engineer in writing of the numbers of each category of temporary worker which he requires, together with the personal attributes which he considers desirable that each category of worker shall possess (taking due cognisance of the provisions of the Contract relating to training).

The Contractor shall, at his own cost, take all necessary actions to advertise within the communities comprising the personnel resources, the fact that temporary employment opportunities exist and the time and place where recruiting will occur. This shall include making contact with the local ward councillors and or labour forums that may exist. Delays in obtaining temporary workers shall not be accepted as reasonable grounds for seeking an extension of time claim.

The Contractor shall record in writing, the details of all persons applying for employment, including *inter alia*:

- (i) Name, address, age and sex
- (ii) Marital status and number of dependants
- (iii) Qualifications and previous work experience (whether substantiated or not)
- (iv) Period since last economically active
- (v) Preference for type of work or task.

The Contractor shall make his selection of workers from amongst the applicants, taking due cognisance of his requirements for the workforce and the provisions of the contract in regard to the provision of training to the workforce and in accordance with the following principles:

- (i) No potential temporary worker shall be precluded from being employed by the Contractor on the execution of the Works, by virtue of his lack of skill in any suitable operation forming part of the Works, unless -
 - all available vacancies have been or can be filled by temporary workers who already possess suitable skills, or
 - The Time for Completion allowed in the Contract, or the remaining portion of the Contract Period (as the case may be) is insufficient to facilitate the creation of the necessary skills.
- (ii) Preference shall be given to the unemployed and single heads of households.
- (iii) The Contractor shall, in so far as is reasonably practicable, give priority to accommodating the applicants' expressed preferences regarding the types of work for which they are selected.
- (iv) The selection process shall not be prejudicial to youth (over the age of fifteen years) and women. After making his selection, the Contractor shall advise the Engineer thereof, in writing and the Engineer shall, without undue delay, ratify the Contractor's selection. The provisions of this clause shall apply *mutatis mutandis* in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time during the Contract.

The Contractor shall, after selecting his temporary workforce, arrange at his own cost for the appointment of the Liaison Officer as representative of the workforce to act on their behalf with regards to all matters pertaining to the workforce.

E8. TERMS AND CONDITIONS PERTAINING TO THE EMPLOYMENT OF THE TEMPORARY WORKFORCE

E8.1 All temporary workers engaged in accordance with the provisions of the Construction Specifications, shall be employed on the terms and conditions of employment as are consistent with those as set out in this Contract. The Contractor shall implement and adhere strictly to such terms and conditions relating to the employment of the temporary workforce, and subject only to the provisions of this Contract, shall not employ any temporary worker on terms and conditions which are less favourable to the worker or inconsistent with the standards and norms generally applicable to temporary workers in the Civil Engineering Industry and applicable to the particular area.

E8.2 The Contractor shall pay to all temporary workers engaged in terms of Part A of the Construction Specifications, not less than the minimum rate of remuneration as specified by the Department of Labour for the free State area.

E9. LABOUR RELATIONS AND WORKER GRIEVANCE PROCEDURES

The Contractor, as the Employer of the workforce, shall be fully responsible for the establishment and maintenance at his own cost, of satisfactory labour relations on site and the resolution of all grievances of temporary workers as may occur.

The Contractor shall at all times adhere to the accepted norms and standards of labour relations prevailing generally in the Civil Engineering Construction Industry and shall conduct himself in a fair and reasonable manner, within the constraints as may be imposed upon him by the terms of the Contract.

In the event of any temporary worker engaged by the Contractor in terms of the Contract, being aggrieved with regard to his terms of employment, working conditions and training, he shall have the right, at his discretion, to be supported in any inquiry or disciplinary hearing or investigation instituted by the Contractor by one member of the temporary workforce and one member of the Project Committee, which persons shall be nominated by the worker.

In the event of any grievance not being satisfactorily resolved through the application of normal dispute resolution procedures, then either the Contractor or the worker concerned may require that the matter be referred to the Project Committee for further consideration, with a view to facilitate the resolution thereof.

E10. THE SUBCONTRACTORS' WORKFORCES

The provisions of this Part F shall apply *mutatis mutandis* to the workforces employed by all Subcontractors engaged by the Contractor and the Contractor shall be fully responsible for ensuring, at his own cost, that the terms of every subcontract agreement entered into are such as to facilitate the application of these provisions in respect of the workforces of all Subcontractors.

The Contractor shall at his own cost and to the extent necessary, assist and **monitor all Subcontractors in the application of the provisions of this Specification, and shall**, in terms of the Conditions of Contract, remain fully liable in respect of the acts, omissions and neglects of all Subcontractors, in respect of the application of the provisions of this Specification.

E11. MEASUREMENT AND PAYMENT

The Contractor will not be separately reimbursed or compensated in respect of the provision of the workforce and creation of temporary employment opportunities and all the Contractor's costs associated with compliance with the provisions of this part of the Construction Specifications shall, except to the extent provided for in Part F as relevant, be deemed to be included in the rates tendered for the various items of work listed in the Bill of Quantities.

PART F: PROVISION OF STRUCTURED TRAINING

CONTENTS

F1	SCOPE
F2	INTERPRETATIONS
F3	ENGINEERING SKILLS TRAINING
F4	ENTREPRENEURIAL SKILLS TRAINING
F5	MEASUREMENT AND PAYMENT

F1. SCOPE

This specification covers the requirements for the provision of the following training:

- (i) Specified structured training to selected members of the workforce and small, medium and micro enterprises (SMME's) by a selected Subcontractor as appointed by the Employer.
- (ii) Additional training deemed necessary by the Contractor, to members of the workforce and small, medium and micro enterprises (SMME's).

F2. INTERPRETATIONS

F2.1 Supporting documents

The Tendered Rules, Conditions of Contract, Standard, Supplementary and Specific Specifications and Construction Specifications and drawings shall *inter alia* be read in conjunction with this specification.

F2.2 Application

The provisions of this specification shall apply in respect of all workers and small, medium and micro enterprises other than the Contractor's key personnel, who are engaged on the execution of the works.

F3. ENGINEERING SKILLS TRAINING

The Contractor shall, from the commencement of the contract, implement a structured training programme comprising of the training delivered by the Selected Subcontractor and any additional training as provided for by the Contractor, in which the various skills required for the execution and completion of the works are imparted to the workers, and where applicable, small, medium and micro enterprises engaged thereon, in a

Programmed and progressive manner. Selected workers shall be trained progressively throughout the duration of the contract in the various stages of a particular type of work.

F3.1 Training programme

The skills training programme to be implemented by the Selected Subcontractor shall comply with the following minimum standards:

- a) Be accredited by the Civil Engineering Industry Training Scheme (CEITS) or other institution recognised by the Department of Labour, as being appropriate for application on this project. Accredited training refers to both the trainers as well as to the training materials.
- b) Be delivered by suitably qualified and experienced trainers accredited to do so.

F3.2 In house training

The Contractor shall provide with his Tendered, full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:

- (i) The name of the accredited training institution and programme
- (ii) The various aspects of each type of training comprised in the programme
- (iii) The manner in which the training is to be delivered
- (iv) The numbers and details of the trainers to be utilized.

Details of such additional skills training shall be attached to Form H of the forms to be completed by the Tenderer.

F3.3 Additional training

The Contractor shall be responsible for the provision of the following necessary for the delivery of the specified and additional skills training programme, including the following:

- (i) Sufficient skilled, competent and accredited trainers to deliver the additional training programme to workers in accordance with the training programme
- (ii) A suitably furnished venue
- (iii) Transport of the workers as required
- (iv) Tools, equipment, and teaching aids
- (v) Stationery and all other necessary materials.

F3.4 Selection of candidates

Members of the workforce will be selected by the Engineer, assisted by the Contractor and the Liaison Officer, to receive specific training as approved by the Engineer.

The following will be taken into account in the selection of the workers to receive the specified training:

- (i) Previous experience (if any)
- (ii) Previous courses completed (if any)
- (iii) Module specific requirements.

F3.5 Duration of training

The Contractor shall allow in his programme for the selected members of the workforce to be engaged in the specified training modules.

Provision must also be made by the Contractor for members of the workforce to receive any additional training as provided for by the Contractor.

F3.6 Training hours

All specified skills-related training shall take place only during normal working hours and the Contractor shall ensure that the selected workers are available at the appropriate times to undergo such training.

F3.7 Approval of training

Both the Selected Subcontractor's and the Contractor's additional training programme shall be subject to the approval of the Engineer, and if so instructed by the Engineer, the Contractor shall alter or amend the programme and course content to suit changing conditions on site and all changes in the Contractor's programme of work.

F3.8 Training record

The Contractor shall keep comprehensive records of the training given to each worker involved in training as well as the nature and number of each task executed by the worker and whenever required shall provide copies of such records to the Engineer.

F3.9 Remuneration during training

Workers shall be remunerated in respect of all time spent undergoing the specified training in terms of Clause D03.02, at the minimum specified wage rate for the area of the Works.

F3.10 Use of workers

The Contractor shall, in so far as it is reasonably feasible, take due cognizance of the nature of the works to be executed at any given time and use trained workers on those aspects of the works for which they have been trained.

F4. ENTREPRENEURIAL SKILLS TRAINING**F4.1 Selection of Candidates**

Members from selected small, medium and micro enterprises employed by the Contractor as Subcontractors will be entitled to receive a structured training programme, comprising of training delivered by a Selected Subcontractor and any additional training as provided for by the Contractor, the training will comprise both management skills as well as business development skills.

F4.2 Performance and monitoring

The Contractor shall closely monitor the performance of all the 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 elsewhere in the Contract and where required by the Engineer, and shall make recommendations in this regard. The final list of candidates will be decided between the Contractor, the Engineer and the Project Committee.

F4.3 Delivery of training

The Contractor shall assist in facilitating in the delivery of the training, by instructing and motivating the Subcontractor's regarding attendance and participation therein.

F4.4 Programming of work and training

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.

F4.5 Training standards

The entrepreneurial skills training programme to be implemented by the selected Subcontractor shall comply with the following minimum standards:

- (i) Be accredited by the Civil Engineering Industry Training Scheme (CEITS) or other institution recognised by the Department of Labour, as being appropriate for application on this project. Accredited training refers to both the trainers as well as to the training materials.
- (ii) Be delivered by suitably qualified and experienced trainers accredited to do so

F4.6 Certificates

Following completion of the structured training, members of small, medium and micro Subcontractors that have demonstrated understanding of and competence in the training material are to be appropriately certified by the accrediting body.

F4.7 In house training and additional training

The Contractor shall provide with his Tendered, full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:

- (i) The name of the training institution and programme
- (ii) The various aspects of each type of training comprised in the programme
- (iii) The manner in which the training is to be delivered
- (iv) The numbers and details of the trainers to be utilized.

Details of such additional entrepreneurial training shall be attached to Form H of the forms to be completed by the Tenderer.

F4.8 Provision of entrepreneurial training

The Contractor shall be responsible for the provision of the following necessary for the delivery of the entrepreneurial training programme, including the following:

- (i) Sufficient skilled and competent trainers to deliver the additional training programme to trainees in accordance with the training programme
- (ii) A suitably furnished venue
- (iii) Transport of the trainees as required
- (iv) Tools, equipment, and teaching aids
- (v) Stationery and all other necessary materials.

F4.9 Training hours

All specified entrepreneurial training shall take place within normal working hours.

F4.10 Approval of training

Both the Selected Subcontractor's and the Contractor's training programme shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content.

F4.11 Training records

The Contractor shall keep comprehensive records of the training given to each Subcontractor involved in training and whenever required shall provide copies of such records to the Engineer. 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.

F4.12 Remuneration during training

No remuneration in respect of time spent undergoing specified training in terms of this clause will be made to any of the Subcontractors.

F5. MEASUREMENT AND PAYMENT

F5.1 Basic principles

a) General

Measurement and payment for all work executed in terms of this contract shall be measured and paid for in accordance with the principles of the Construction Specifications, irrespective of whether the work is executed as an integral part of the provision of training in terms of this specification.

b) Training

The Contractor shall only be reimbursed for the amounts actually paid by the Contractor to the Selected Subcontractors as appointed by the Employer, in execution of the Engineer's written instruction, plus a percentage as Tendered to cover all his charges and profits.

F5.2 Scheduled items

Payment items are included in the bill of Quantities for the provision of the specified training by selected Subcontractors only.

	Item	Unit
F5.2.1	Conducting of skills audit and the development of a training plan	Provisional Sum
	A provisional sum is allowed for the conducting of a skills audit of the Local Labour, as well as the compilation of a training plan.	
	The provisional sum shall include full compensation for identification of pre-qualification criteria and training needs, staff assessment and evaluation prior to training, all technical research, identification of accredited training courses, and all other actions necessary for commencement of official training sessions in accordance with the specification.	

Any expenditure under this item requires the written prior approval of the Engineer and Employer.

	Item	Unit
F5.2.1	Presenting accredited training course for Local Labour and MEs	Provisional Sum
	The provisional sum shall include full compensation for presenting the courses, including lectures, demonstrations, on-site training and hands-on development, and improvement of maintenance personnel's skills to enable them to maintain and repair installations safely and efficiently at the satisfactory functional condition specified.	
	The provisional sum shall also include full compensation for the Contractor's time, appointment of the accredited trainer for the course, and for all material expenses such as paper hand-outs and slides for the whole group of trainees, the number of which shall be determined during development of the training course.	
	Any expenditure under this item requires the written prior approval of the Engineer and Employer.	

F5.2.2 **Penalty Calculation**

Use of Local Labour

Should the contractor fail to meet the minimum requirement of creating 10 employment opportunities on site for the duration of the contact, a penalty of 1,5 * the value of the amount of employment that was not created, calculated at R350-00 per day per person, will be calculated and imposed. This amount will be deducted from the Contractor's payment certificate.

The Contractor is to indicate to the Municipality via a report certified by their auditors indicating the payments made to Local Labour at the end of the Contract before the retention money is released.

C3.5 MANAGEMENT

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C3.5.1 HEALTH AND SAFETY SPECIFICATIONS

This part of C3.5 Management contains specifications for Health and Safety matters not covered by C3.4 Construction Specifications.

The number of each clause and each payment item in this specification is prefixed with a G to differentiate these clauses and items.

SECTION G1000 : HEALTH AND SAFETY REQUIREMENTS

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G1001 SCOPE

This health and safety specification establishes the overarching framework within which a contractor is required to satisfy general requirements for occupation health and safety in an engineering and construction works contract.

- Note:** 1) This specification establishes general requirements to enable the employer and the contractor to satisfy the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2003.
- 2) The Construction Regulations, 2003, require an employer to stop any contractor from executing construction work which is not in accordance with the contractor's health and safety plan for the site or which poses a threat to the health and safety of persons.

G1002 DEFINITIONS

Act: the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

competent person: any person having the knowledge, training and experience specific to the work or task being performed

ergonomics: the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimize human well-being and overall system performance
hazard: a source of or exposure to danger
incident: an event or occurrence occurring at work or arising out of or in connection with the activities of persons at work, or in connection with the use of plant or machinery, in which, or in consequence of which-

- a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he 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 to continue with the activity for which he was employed or is usually employed;

- b) a major incident occurred; or
- c) the health or safety of any person was endangered and where-
 - i) a dangerous substance was spilled;
 - ii) the uncontrolled release of any substance under pressure took place;
 - iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or machinery ran out of control

health and safety plan: a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

health and safety specification: a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons

inspector: a person designated as such under section 28 of the Act

major incident: an occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace

reasonably practicable: practicable having regard to:

- a) the severity and scope of the hazard or risk concerned;
- b) the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk;
- c) the availability and suitability of means to remove or mitigate that hazard or risk; and
- d) the cost of removing or mitigating that hazard or risk in relation to the benefits deriving therefrom;

risk: the probability that injury or damage will occur

safe: free from any hazard

scaffold: any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both

specification data: data, provisions and variations that make this specification applicable to a particular contract

structure

- a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or
- c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more

substance: any solid, liquid, vapour, gas or aerosol, or combination thereof

suitable: capable of fulfilling or having fulfilled the intended function or fit for its intended purpose

G1003 INTERPRETATION

- G3.1 The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.
- G3.2 Compliance with the requirements of this specification does not necessarily result in compliance with the provisions of the Act.

G1004 REQUIREMENTS

G4.1 General requirement

- G4.1.1 The contractor shall execute the works in a manner that complies with all the requirements of the Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring.
- G4.1.2 The contractor shall with respect to the site and the engineering and construction works that are contemplated:
 - a) identify the hazards and evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the Act; and
 - b) as far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.
- G4.1.3 The contractor shall as far as is reasonably practicable, cause every employee to be made conversant with the hazards to his health and safety attached to any work which he has to perform, any article or substance

which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with the respect to those hazards.

G4.1.4 The contractor shall ensure that all employees under his or her control are:

- a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and
- b) issued with proof of health and safety induction training issued by a competent person and carry proof of such induction when working on site.

G4.1.5 The contractor shall not allow or permit any employee to enter any site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

G4.1.6 The contractor shall ensure that each visitor to a construction site, save where such visitor only visits the site office and is not in direct contact with the construction work activities:

- a) undergoes health and safety instruction pertaining to the hazards prevalent on the site; and
- b) is provided with the necessary personal protective equipment.

G4.1.7 The contractor shall provide suitable on-site signage to alert workers and visitors to health and safety requirements.

G4.1.8 The contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace.

G4.2 Health and safety representatives

G4.2.1 The contractor shall appoint in writing one health and safety representative for every 50 employees of the contractor working on the site, whenever there are more than 20 employees on the site; to:

- a) review the effectiveness of health and safety measures;
- b) identify potential hazards and potential major incidents;
- c) in collaboration with his employer, examine the causes of incidents;
- d) investigate complaints by any employee of the contractor relating to that employee's health or safety on the site;
- e) make representations to the contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;
- g) inspect the site with a view to the health and safety of employees, at regular intervals;
- h) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and
- i) participate in any internal health or safety audit.

G4.2.2 The contractor shall inform the relevant safety representative:

- a) beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector; and
- b) as soon as reasonably practicable of the occurrence of an incident on the site.

G4.2.3 The contractor shall convene health and safety meetings whenever more than two health and safety representatives have been appointed for the site. These meetings shall be attended by all health and safety representatives and shall be convened at least once every month to:

- a) make recommendations to the employer regarding any matter affecting the health or safety of persons on the site; and
- b) discuss any incident on the site in which or in consequence of which any person was injured, became ill or died.

G4.2.4 The contractor shall consult with the health and safety committee on the development, monitoring and review of the risk assessment.

G4.3 Appointment of construction supervisor and safety officers

4.3.1 The contractor shall appoint a full-time competent employee designated in writing as the construction supervisor for the site, with the duty of supervising the performance of the work falling within the scope of the contract and may appoint one or more competent employees to assist the appointed construction supervisor.

1.3.2 A contractor may having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer in writing, who has in the contractor's opinion the necessary competencies and resources, to assist the contractor in the control of all safety related aspects on the site.

1.3.3 The contractor shall ensure that the construction supervisor is in possession of the most recently updated version of the fall protection plan.

G4.3.4 The contractor shall ensure that the following activities, as relevant, are carried out under the supervision of a competent person and that such persons are appointed in writing:

- a) all formwork and support work operations;
- b) excavation work;
- c) demolition work;
- d) scaffolding work operations;
- e) suspended platform work operations;
- f) operation of batch plants; and
- g) the stacking and storage of articles on the site.

G4.4 Risk assessment

G4.4.1 The contractor performing work falling within the contract shall, before the commencement of any such work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing. Such an assessment shall as a minimum:

- a) identify the risks and hazards to which persons may be exposed to;
- b) analyse and evaluate the identified risks and hazards;
- c) document a plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;

- d) provide a monitoring plan; and
- e) provide a review plan.

Note: A risk assessment is an important step in protecting workers as well as complying with the law. It helps you focus on the risks that really matter in a particular workplace – the ones with the potential to cause real harm. Workers and others have a right to be protected from harm caused by a failure to take reasonable control measures. The following four steps are recommended:

Identify the hazards by looking at what could reasonably be expected to cause harm, ask employees or their representatives what they think, obtain advice from trade associations or publications on health and safety, check manufacturer's instructions or data sheets for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective, review accident and ill-health records, think about long-term hazards to health (eg high levels of noise or exposure to harmful substances) as well as safety hazards etc.

Identify who may be harmed and how by identifying how groups of people might be harmed i.e. what type of injury or ill health might occur.

Evaluate the risks and decide on precautions by doing everything 'reasonably practicable' to protect people from harm i.e. by looking at how things are done, what controls are in place and how the work is organised and comparing this against good practice to see if more can be done to bring practices up to standard. Consider if the hazard can be got rid of all together, and if not how can the risks be controlled so that harm is unlikely, e.g. try a less risky option (eg switch to using a less hazardous chemical); prevent access to the hazard (eg by guarding); organise work to reduce exposure to the hazard (eg put barriers between pedestrians and traffic); issue personal protective equipment (eg clothing, footwear, goggles etc); and provide welfare facilities (eg first aid and washing facilities for removal of contamination).

Record the findings by writing down the findings of the risk assessment.

- G4.4.2 The contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.
- G4.4.3 The contractor shall require a competent person to prepare a fall protection plan in compliance with the requirements of the Construction Regulations.

G4.4.4 Notwithstanding the provisions of the fall protection plan, the contractor shall ensure that:

- a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;
- b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;
- c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;
- d) fall prevention and fall arrest equipment is:
 - i) suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and
 - ii) securely attached to a structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;
fall arrest equipment is only used where it is not reasonably practicable to use fall prevention equipment; and
- f) suitable and sufficient steps are taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

G4.4.5 Where roof work is being performed on a construction site, the contractor shall ensure that it is indicated in the fall protection plan that:

the roof work has been properly planned;

the roof erectors are competent to carry out the work;

no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees;

prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists;

the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering; suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so

far as is reasonably practicable, the fall of any person, material or equipment.

G4.4.6 The contractor shall ensure that:

- a) all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;
- b) no structure or part of a structure is loaded in a manner which would render it unsafe; and
- c) specification data prepared by the designer of the structure is taken into account in the risk assessment;

Note: The specification data provided by the designer should outline known or anticipated dangers or hazards relating to the works and make available all information required for the safe execution of the work. It should provide as relevant, geotechnical information (or make reference to reports provided in the site information), the loading the structure is designed to withstand, the methods and sequence of construction.

G4.5 Health and safety plans

G4.5.1 The contractor shall prior to commencing the works to which this specification applies, submit to the employer for approval a suitable and sufficiently documented health and safety plan, based on this specification and the risk assessment that is conducted.

G4.5.2 The health and safety plan shall as a minimum provide:

- a) the information contained in Table 1 in respect of each of the hazards associated with work falling within the scope of the contract (see Figure 1); and

Table 1: Example of the format of a health and safety plan

What are the hazards?	Who might be harmed and how?	What are the safe work procedures for the site?	What further action is necessary (monitoring and review)?	Action by whom	Action by when

- b) an outline of the manner in which the contractor intends complying with the requirements of this specification.

G4.5.3 The contractor shall discuss the submitted health and safety plan with the employer's representative, modify such plan in the light of the discussions and resubmit the modified plan for approval.

G4.5.4 The contractor shall apply the approved health and safety plan from the date of commencement of and for the duration of the works to which this specification applies.

G4.5.5 The contractor shall conduct periodic audits for compliance with the approved health and safety plan at intervals agreed upon with the employer, but at least once every month.

G4.5.6 The contractor shall update the health and safety plan whenever changes to the works are brought about.

G4.6 Subcontractors

G4.6.1 The contractor may only subcontract work in terms of a written subcontract and shall only appoint a subcontractor should he be reasonably satisfied that such a subcontractor has the necessary competencies and resources to perform the work falling within the scope of the contract safely. Such a subcontract shall require that the subcontractor shall:

- a) co-operate with the contractor as far as is necessary to enable both the contractor and sub-contractor to comply with the provisions of the Act; and
- b) as far as is reasonably practicable, promptly provide the contractor with any information which might affect the health and safety of any person at work carrying out work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

G4.6.2 The contractor shall provide any sub-contractor who is submitting a tender or appointed to perform a sub-contract falling within the scope of the contract, with the relevant sections of this specification and associated specification data which might be pertinent to the sub-contract.

G4.6.3 The contractor shall take reasonable steps as are necessary to ensure:

- a) co-operation between all sub-contractors to enable each of those sub-contractors to comply with the requirements of the Act and associated regulations; and
- b) that each sub-contractor's health and safety plan is implemented.

G4.6.4 The contractor shall conduct periodic audits for compliance with the approved health and safety plan of each and every sub-contractor working

on the site at intervals agreed upon with such contractors, but at least once per month.

G4.6.5 The contractor shall stop any contractor from executing construction work which is not in accordance with the contractor's or subcontractor's health and safety plan for the site or which poses a threat to the health and safety of persons.

G4.6.6 The contractor shall ensure that where changes to the works occur, sufficient health and safety information and appropriate resources are made available to the subcontractor to execute the work safely.

G4.6.7 The contractor shall ensure that:

- a) every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site;
- b) potential subcontractors submitting tenders have made provision for the cost of health and safety measures during the construction process; and
- c) every subcontractor has in place a documented health and safety plan prior to commencing any work on site which falls within the scope of the contract.

G4.6.8 The contractor shall receive, discuss and approve health and safety plans submitted by subcontractors.

G4.6.9 The contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

G4.6.10 The contractor shall reasonably satisfy himself that all employees of subcontractors are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

The contractor shall satisfy himself and ensure that all subcontractor employees deployed in the site are:

- a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and
- b) issued with proof of health and safety induction training issued by a competent person and carry proof such induction when working on site.

G4.7 Reporting of incidents

The contractor shall notify the employer's representative of any incident as soon as possible after it has occurred and report such incidence to an inspector.

G4.8 Administration

G4.8.1 Notification of intention to commence construction work

The contractor shall notify the Provincial Director of Labour in writing using a form similar to that contained in Annexure A of the Construction Regulations issued in terms of the Act before construction work commences and retain a copy of such notification in the health and safety file where such work:

involves the demolition of a structure exceeding a height of 3m;

involves the use of explosives to perform construction work;

involves the dismantling of fixed plant at a height greater than 3m;

exceeds 30 days or will involve more than 300 person days of construction work; and includes:

- i) excavation work deeper than 1m; or
- ii) working at a height greater than 3 m above ground or a landing.

G4.8.2 Health and safety file

G4.8.2.1 The contractor shall maintain on site a health and safety file on site which contains copies of the following, as relevant:

- a) the notification made to the Provincial Director of Labour in terms of 4.4.1;
- b) the letters of appointment of health and safety representatives;
- c) the minutes of all health and safety meetings;
- d) a comprehensive and updated list of all the subcontractors (nominated, selected or domestic) employed on site by the contractor, indicating the type of work being performed by such sub-contractors;
- e) a copy of each and every subcontract agreement;.
- f) the contractor's health and safety plan;

- g) the health and safety plans of all the contractor's subcontractors who are required to provide such plans;
- h) the recommendations made to the contractor by the health and safety committee referred to in 4.2.3
- i) any report made to an inspector by the health and safety committee referred to in 4.2.3; and
- j) the findings of all audit reports made regarding the implementation of the contractor's or a subcontractor's health and safety plan;
- k) proof that the contractor and every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer;
- l) the inputs of the safety officer, if any, into the health and safety plan;
- m) a copy of risk assessments made by competent persons;
- n) details of induction training conducted whenever it is conducted;
- o) proof of all subcontractor's induction training whenever it is conducted;
- p) letters of appointments for competent persons to supervise prescribed activities;
- q) proof of the following where suspended platforms are used:
 - i) a certificate of system design issued by a professional engineer, professional certificated engineer or a professional engineering technologist;
 - ii) proof of competency of erectors;
 - iii) proof of compliance of operational design calculations with requirements of the system design certificate;
 - iv) proof of performance test results;
 - v) sketches indicating the completed system with the operational loading capacity of the platform;
 - vi) procedures for and records of inspections having been carried out;

- vii) procedures for and records of maintenance work having been carried out;
- viii) proof that the prescribed documentation has been forwarded to the provincial director;
- r) records of the register of inspections made by a competent person immediately before and during the placement of concrete or any other load on formwork; and
- s) the names of the first aiders on site and copies of the first aid certificates of competency.

G4.8.2.2 The health and safety file shall be made available for inspection by any inspector, subcontractor, employer's representative, employer's agent, health and safety representative or employee of the contractor upon the request of such persons.

G4.8.2.3 The contractor shall hand over the health and safety file to the employer upon completion of the contract together with a record of all drawings, designs, materials used and other similar information concerning the completed structure.

G4.9 First aid, emergency equipment and procedures

The contractor shall where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment.

The contractor shall ensure that where there are more than 10 employees employed on the site that for every group of up to 50 employees at that workplace, at least one person is readily available during normal working hours, who is in possession of a valid certificate of competency in first aid.

G1005 MEASUREMENT AND PAYMENT

Item

Unit

G10.1 Contractor's initial obligations in respect of the Occupational Health and Safety and Construction Regulations Lump Sum

Payment of the lump sum tendered shall include full compensation for all costs resulting from the Contractor's initial obligations complying with Occupational Health and Safety Act and its Construction Regulations and requirements in terms of health and safety requirements in respect of the contract as specified.

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*

G10.2 Contractor's time related obligations in respect of the Occupational Month Health and Safety Act and Construction Regulations

The tendered monthly amount shall represent full compensation for that part of the Contractor's general 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 G10.1 has been made.

The lump sum tendered will be payable monthly instalments in relation to the month under consideration and the total time of the completion of the Works.

C3.5.2 ENVIRONMENTAL SPECIFICATIONS

This part of C3.5 Management contains specifications for Environmental matters not covered by C3.4 Construction Specifications.

The number of each clause and each payment item in this specification is prefixed with an H to differentiate these clauses and items.

SECTION H1000 : ENVIRONMENTAL MANAGEMENT

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H1001 SCOPE

The Contractor is required to comply with the requirements of the detailed EMP (to be provided upon award of contract) throughout construction.

The following are standardised additional specifications applicable. They are intended to assist the appointed Contractors to fulfill the environmental requirements of the project. The objective of the EMP is to ensure that the potential impacts upon the environment are minimised, and that upon completion of each section of work the area is left in a clean and sustainable condition.

Overall the environmental impacts of the project are considered to be low as long as the listed procedures are followed. These are given in the EMP.

The Contractor is advised that there are cost implications to the EMP and these must be factored into the tendered price.

H1002 ENVIRONMENTAL MANAGEMENT PLAN

H2.1 Objectives

The prime objective of the EMP is to minimise or avoid significant environmental impacts by using a pro-active approach and planning procedures.

The second objective is to have a plan in place to rehabilitate areas that have been impacted upon and, thirdly,

To have a plan in place for emergency situations that arise and are detrimental to the environment e.g. fuel or bitumen spills.

The Contractor will be responsible for the day-to-day implementation of the EMP, by himself and all other sub-contractors. During the course of construction regular compliance audits will be undertaken. This environmental auditing will be conducted by qualified environmental practitioners.

H2.2 Environmental Control

The Contractor will oversee the environmental aspects of the construction phase of the project in consultation with the Engineer.

The Contractor will report back to the bi-weekly site meetings with regards to compliance to the environmental specifications.

H2.3 Environmental Awareness Programme

The Engineer will implement an Environmental Awareness Programme for the Contractor, his staff, sub-contractors and all people working on the project. The initial session will be immediately prior to construction commencing.

H2.4 Method Statements

The Contractor shall submit written method statements for activities that are identified by the Engineer, as being potentially harmful to the environment, or for work that is to be undertaken in areas identified as being environmentally sensitive.

Such activities include dewatering of excavations, pumping, working with cement, erection of construction camps and fuel stores, etc.

The Method Statement shall cover applicable details with regard to:

- construction procedures,
- materials and equipment to be used,
- getting the equipment to and from site,
- how the equipment/ material will be moved while on site,
- how and where material will be stored,
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur,
- timing and location of activities,
- compliance/ non-compliance with the Specifications, and
- any other information deemed necessary by the Engineer.

Method statements shall be submitted at least 7 days prior to commencing work on the activity to give the Engineer time to study the method statement and consult with contractor and specialists and to obtain written approval of the method statements. The Contractor shall not commence on that activity until such time as the method statement has been agreed to in writing by the Engineer. This will be done within this 10 day period.

Any changes required to the method statements once construction has commenced must be agreed upon in writing with the Engineer before being instituted.

H2.5 Working Areas

Regardless of the extent of the work, the following applies to all of these areas:

- All materials must be stockpiled or stored in a designated area (at each site) avoiding sensitive areas.
- No materials must be left on site once work is completed neither may they be dumped at any other place on site.
- Litter bins and containers for waste materials must be provided by the Contractor at each site. Bins should be weatherproof and scavenger proof.
- All waste must be placed in the bins and containers. No waste may be left lying on the site.
- Visible anti-litter signs must be displayed around the waste collection points and all employees must be encouraged to observe site rules pertaining to solid waste management practices. A concerted effort should be made to collect and dispose of materials suitable for recycling, separately from the other solid waste.
- No burning or burial of waste is permitted.
- Any soils contaminated by the contractor must be removed or rehabilitated. If a significant amount of soil has to be removed fresh soil must be imported and the site rehabilitated by grading and planting vegetation.
- All waste must be removed to an authorised landfill site, or taken to a facility for recycling.
Any excess road building materials must either be:
 - taken to a site for stockpiling and future re-use,
 - (ii) used for localised rehabilitation, or
 - (iii) removed from site by the contractor for disposal.
- The contractor shall provide waste bins for solid waste collection and storage. Such bins should be placed at designated areas within the site. The refuse collected from the site must be removed for landfill disposal at least once a week.
- Vehicles may not park in the road reserve except with the prior permission of the Engineer.
- Every care should be taken to avoid damaging vegetation or land when vehicles are in use.
- Fuel tanks, pumps, and all equipment using oil, diesel, etc. must have drip trays. The drip trays must have sufficient capacity to contain liquids that will spill in the case of failure of the tanks, etc. The waste liquids taken from the trays must be disposed of at a landfill which permits disposing of liquid wastes.

- Only emergency repairs to vehicles and equipment may take place on site. Where emergency repairs take place it is the responsibility of the contractor to ensure that all waste (e.g. spare parts and oils) are removed from site as soon as possible. All other repairs must take place at a yard off-site, where facilities are suitable and waste facilities are appropriate.
- Whenever practical a tarpaulin should be laid down, prior to emergency repairs taking place, to protect the environment from contamination.
- No natural vegetation may be gathered, removed or destroyed in the course of the project, except where agreed to by the landowner.
- No hunting is permitted.
- Fires are prohibited.
- Erosion control measures must be implemented if the need arises.
- Pollution of water courses by any means must be avoided.
- No defacement of any natural or other features will be allowed; this includes markings for road works, unless markings are restricted to the road surface.
- Dust suppression measures should be implemented if and when required.
- Chemical toilets must be provided at all sites and must be within walking distance of the workers. They must be serviced on a regular basis in order to be kept clean and hygienic. The toilets must be placed in a sheltered place and should be locked after working hours if they are outside a camp area. Alternative arrangements to use existing toilets with owners' written consent may be allowed when submitted in writing.
- All waste from toilets must be disposed of at a permitted landfill or waste treatment works.

H2.6 On-site Workers Camp

H2.6.1 Site Camp

The campsite selection should be carried out in consultation with the landowner or relevant authority.

The site must be selected with due regard to the environment. Due care should be taken to avoid areas where sensitive vegetation and habitats occur.

When the site selection process has been completed, the contractor will define the boundaries of the site and erect a fence with a controlled access around it if practical.

All activities associated with the camp must be restricted to the demarcated area.

It is the responsibility of the contractor to ensure the safety of all personnel within the boundaries of the site. The contractor should have an on-site contingency plan detailing measures to be observed in the case of a health, safety or environmental emergency.

The contractor should ensure that all employees, employed by him and/or employed by subcontractors, have a clear understanding of safety regulations and procedures.

H2.6.2 Water, wastewater, and stormwater

Site occupants must have access to safe drinking water.

If water is stored on site a clear distinction should be made between drinking water and multi-purpose water storage facilities.

All water used on site must be taken from a legal source and comply with recognised standards for potable and other uses.

Wastewater that is contaminated with soaps, detergents and other undesirable materials, such as grease and oils, should be collected in conservancy tanks and disposed of safely in a wastewater treatment facility.

It is illegal to discharge water into a public stream if the quality does not conform with required health standards.

In all camps stormwater must be managed to prevent erosion.

Run-off will be diverted to control ponds so that silt may settle and any pollutants are trapped.

Subsequently, any pollutants must be treated, or removed and disposed of at a permitted landfill site or recycling facility.

All materials should be protected from the rain to prevent them being washed into stormwater channels.

H2.6.3 Ablution Facilities

The contractor shall provide proper and adequate sanitary facilities for all site employees.

These facilities shall be maintained in good and working condition at all times. Odours emanating from these facilities should be controlled within acceptable levels.

H2.6.4 Fires and Cooking Facilities

Fires will not be allowed.

The contractor must supply cooking facilities that are suitable for the environment and are not liable to cause the outbreak of fires. Fire fighting equipment must be supplied by the Contractor at suitable locations.

H2.7 Plant and Equipment Storage Facility

H2.7.1 Plant

At the end of the shift all plant should be driven or transported back to the campsite for proper and safe overnight storage.

The contractor should ensure that equipment left elsewhere is stored in a manner that will not impact negatively upon the environment.

The plant should be regularly inspected for fuel and oil leaks that may be harmful to the environment, and/or aquatic life if washed into a stream or river.

H2.7.2 Hazardous Materials

Hazardous materials should be stored under lock and key in designated areas with properly displayed and visible warning signs.

All storage of hazardous materials must comply with legislation and regulations.

H1003REHABILITATION

Upon completion of each section of work the site must be cleared of all equipment, waste and any rehabilitation work must be undertaken. This may include local grading of soils and re-vegetation where sites have been disturbed.

Immediately after the demolition of the campsite, the contractor shall restore the site to its original state, paying particular attention to its appearance relative to the general landscape.

It is imperative that any potential erosion problems are addressed. This may require subsequent site visits to monitor the efficacy of erosion control measures.

H1004EMERGENCY PLANS

The onus is on the contractor to assess the potential risks to the environment as a result of the project. For example, accidental spillage of materials may pollute the soil or any water body.

The contractor must draw up a suitable emergency plan to contain such pollution. The emergency plans and procedures must be taught to all the workers on site, so that everyone is prepared to cope with an emergency.

Appropriate equipment must be available to carry out the emergency plans.

H1005ENVIRONMENTAL AUDITING AND PENALTIES

On a regular basis, a qualified auditor will carry out a site audit to ascertain and verify the contractor's level of compliance with the requirements of the EMP

Transgression will be treated as a contravention of the contractual agreement.

Deviation from these prescribed requirements will be met with penalties that are intended to enforce compliance.

It is a requirement that the contractor keep concise records of mitigatory measures undertaken at each site to minimise environmental impacts.

Any emergency situations that impact upon the environment should be recorded by the contractor together with the action that was taken to rehabilitate and remediate the site.

A copy of all completed environmental audits will be given to the contractor and the employer by the auditor. Any public complaints regarding the environment must be recorded and discussed with the Engineer to determine an appropriate course of action.

The contractor will be responsible for all costs incurred in the rehabilitation of sites.

The contractor will be responsible for all costs incurred where emergency procedures are implemented to deal with accidents that impact upon the environment.

The contractor will be responsible for ensuring that all procedures required to rehabilitate all sites are implemented.

If third parties are called to the site to perform clean up and rehabilitation procedures, the contractor will be responsible for all costs.

Penalties will be imposed for contravention of the EMP, as specified in the EMP:

MEASUREMENT AND PAYMENT

No separate payment items have been scheduled for compliance with the EMP, and all the relevant cost of the Contractor are deemed to be covered in other relevant items in the schedule of quantities.

PART C4

SITE INFORMATION

C4 Site Information

C4.1 Scope of Site Information

Geotechnical investigation was carried out as per the attached report, which soil samples of the in-situ soils were retrieved and delivered to SANAS accredited civil engineering laboratory for material testing to determine materials classification and properties. The following tests were undertaken:

- Trial holes
- Grading Analysis
- Atterberg Limits
- Maximum Dry Density (MDD)
- California Bearing Ration (CBR)
- DCP's

The tests are conducted to determine materials suitability for usage as road layers or flexible pavement layers.

Allowance was made in the schedule of quantities for expected hard rock excavation. For the purposes of the Contract it will be deemed that, prior to submitting his Tender, the Contractor acquainted himself fully with the information and prevailing site conditions. The contractor shall have no claim against the Employer in respect of geotechnical or subsurface conditions encountered during the course of the Contract.

JOHANN van der MERWE (Pty) Ltd
CONSULTING APPLIED EARTH AND ENVIRONMENTAL SCIENTISTS

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PROJECT No: M21/3897

8th June 2021

ENGINEERING ADVICE & SERVICES
73 Heugh Road
WALMER
PORT ELIZABETH 6070

Attention: Mr. Anton Westerberg

Dear Sir,

REPORT ON A FOUNDATION INVESTIGATION CARRIED OUT FOR: *PROPOSED UPGRADE OF ROADS IN METSIMAHOLO VILLAGE, ORANJEVILLE, FREE STATE PROVINCE*

1. INTRODUCTION

This report presents results and observations on a foundation investigation carried out during May 2021 for the proposed upgrading of gravel roads in Metsimaholo Village, located due north-east of Oranjeville. The investigation was carried out at the request of Mr. Rudi Nell of Paul and Partners, who is acting on behalf of Engineering Advice & Services.

The investigation consisted of the excavation, profiling and sampling of a number of hand excavated test pits combined with hand-held dynamic cone penetrometer tests and hand augered holes in order to compile the report that will be suitable for design purposes.

2. TERMS OF REFERENCE

The objectives of the investigation were to: -

- Determine the engineering properties of the site soils and bedrock including potentially expansive material, low bearing capacity soils and areas difficult to excavate.
- Present appropriate recommendations for pavement design, construction and precautionary measures in accordance with the requirements of the local municipality.

Written instructions to proceed with the investigation were obtained from Mr. Rudi Nell of Paul and Partners in his electronic mail dated 7th May 2021.

3. INFORMATION CONSULTED

The following information was available and was consulted: -

- The 1: 250 000 scale Geological Series Map Sheets Number 2628 East Rand.
- A colour aerial photograph of the site was obtained from Google Earth via the Internet.

- A site contour plan showing the various roads to be upgraded and surface contours at 0,25m intervals prepared to a scale of 1: 1 000 by Toon Korb land Surveyor, was supplied.
- The publication "National Home Builders Registration Council's Standards and Guidelines, May 1995", 1st Issue.

4. SITE INVESTIGATION

Two test pits were excavated by hand tool operations supplied by Profile Projects from Pretoria who also performed hand-held dynamic cone penetration tests (DCP's) and hand auger holes at each test pit and DCP location. The test pits were entered by an engineering geologist who described the soil and bedrock formations in terms of the methods advocated by Jennings *et al* (1973) namely, moisture condition, colour, soil consistency, soil structure, soil type and origin (MCCSSO). During the test pit profiling, disturbed representative soil samples were recovered from the test pits and submitted to LTG Civil Services commercial soil laboratory in Hatfield for testing and identification

Detailed descriptions of the test pit profiles are provided on the Soil Profile Sheets in Appendix 1 of the report whilst the laboratory test results appear in Appendix 2. The location of test pits is shown on the "Geotechnical Map", Drawing Number M21/3897 at the back of the report.

5. SITE SOILS AND GEOLOGY

The existing gravel roads are covered by a thin veneer (0,1m to 0,3m thick) of imported sugary dolerite underlain by transported sandy, gravelly and clayey soils over sandstone bedrock belonging to the Vryheid Formation, Ecca Group, Karoo Supergroup and by dolerite bedrock belonging to a Post Karoo intrusion. The route has been apportioned into two prominent material zones, Soil Zones "A" and "B", as shown graphically on the "Geotechnical Map".

Soil Zone "A" occupies the *south-eastern portion* of the route (some 600m) and a generalized description of the typical soil profile that may be encountered here, is as follows:-

- 0,0 - 0,2: ROADBED: Moist, dark olive, dense, clayey SAND containing DOLERITE GRAVELS and small CORESTONES (sugary dolerite). Ranges from 0,2m to 0,35m in thickness.
- 0,2 - 0,6: Slightly moist, dark reddish brown, very stiff, sandy SILT; colluvium.
- 0,6 - 1,2: Slightly moist, dark orange brown, very stiff, intact, sandy SILT; residual dolerite. Contains numerous small and large hard rock DOLERITE CORESTONES in some parts of the route from below shallow depth (<0,4m below surface).

Soil Zone "B" occupies the *major portion of the study area* (some 1 600m in length) and a generalized description of the typical soil profile that may be encountered here, is as follows:-

- 0,0 - 0,2: ROADBED: Moist, dark olive, dense, clayey SAND containing DOLERITE GRAVELS and small CORESTONES. Ranges from 0,1m to 0,25m in thickness.
- 0,2 - 0,7: Moist, light grey becoming yellowish brown, loose becoming very loose, silty fine SAND containing isolated pebbles; colluvium.
- 0,7 - 1,0: Dark orange blotched black, soft rock HARDPAN FERRICRETE. The colluvium is underlain by very dense SAND and by stiff, sandy CLAY in isolated areas.

Refusal of the hand tool operations was encountered in hard rock dolerite corestones in Soil Zone "A" at shallow depth (<0,5m) and in hardpan ferricrete in Soil Zone "B" from below 0,7m in places. The water table, whether perched or permanent, was not encountered during the investigation which was carried out during the early part of the wet season. However, saturated soil conditions were observed in the lower-lying portion of the route in the vicinity of hand auger hole D1.

6. GEOTECHNICAL CONSIDERATIONS

6.1 Expansive Soils

The site soils are generally sandy and gravelly and are potentially "low" in the degree of expansiveness based on the results of the laboratory tests and according to the Van der Merwe (1964) method. A total surface heave value of less than 5mm is predicted across the route, depending on the locality and should the moisture condition of the soils change from a dry to a saturated state.

6.2 Compressible Soils

The upper sandy and gravelly horizons that blanket Soil Zone "B" down to between 0,4m and 0,7m below surface, are considered to be potentially compressible, based on a visual appraisal of the soil structure i.e. a loose consistency and a voided texture. These soils were unfortunately too friable in order to take undisturbed soil samples.

6.3 Excavation Characteristics

No problems should be experienced in order to remove the material across the entire route down to a depth of at least 0,7m below surface using hand tools or conventional earth moving machines. Isolated areas across Soil Zone "A" may be present where hard machine excavation will be encountered in hard rock dolerite corestones.

6.4 Earthworks

The upper site soils were tested to determine their compaction characteristics. A summary of the test results appears below in Table 6.1: -

TABLE 6.1: SUMMARY OF COMPACTION TESTS

HOLE NO	DEPTH (m)	SOIL TYPE	PI	GM	CBR	TRI 14	SWELL (%)
OR/1	0,2 – 0,7	Silty SAND	NP	1,10	21	G7	0,04
OR/2	0,0 – 0,2	ROADBED	13	2,50	34	G7	0,11
OR/2	0,2 – 0,6	Sandy SILT	21	0,80	4	<G9	1,62
OR/2	0,0 – 1,2	Sandy SILT	19	0,70	6	<G9	1,83

Note : PI = Plasticity Index (NP = Non Plastic)
GM = Grading Modulus
CBR = California Bearing Ration at 95% Mod AASHTO compaction

Based on the results of the compaction tests, it is evident that the silty dolerite soils occupying portions of Soil Zone "B" is of poor quality (<G9) whereas the sandy soils blanketing Soil Zone "B" and the existing roadbed should be suitable for use as upper selected layers in road construction after removal of the >60mm fraction from the roadbed materials.

Cognizance should be taken of the potentially compressible and collapsible nature of the soil horizons across Soil Zone "B" in the design of roads and paved areas. The residual dolerite soils underlying portions of Soil Zone "B" will probably excavate as coarse gravelly material containing numerous small to medium sized corestones (small boulders) and should be suitable for use as selected layers after removal of the coarser than 60mm fraction. Material for use in the construction of subbase and basecourse layers will have to be imported to the site. From the Google Earth photo it appears that there is an existing borrow pit located on the northern boundary of the village.

6.5 Ground Water and Soil Chemistry

No ground water seepages were encountered anywhere during the investigation, proper surface drainage precautionary measures should be taken implemented in the design and construction of the new road. The lower-lying portion of the route in the vicinity of test point D1 exhibited saturated soils conditions with increasing depth and this area may be subject to "pumping" of the soil layers during compaction due to perched water table conditions here.

The site soils are expected to be potentially chemically aggressive with regards to buried ferrous pipes and non-ferrous metal pipes or plastic pipes should therefore be used for wet services and the foundation soils should be treated with an environmentally friendly insecticide to combat termites.

7. GENERAL

While every effort has been made to ensure that representative test pitting and sampling has been undertaken to probe the soils on-site, guaranteeing that isolated zones of either poor foundation material or hard rock excavation have not been identified, is impossible under the constraints of an investigation of this nature. The investigation has sought to highlight general areas of potential foundation and excavation problems, and to provide early warning to the design engineers and town planners. It is recommended that the excavation for roadbed preparation be inspected by a competent person during construction in order to verify that the materials thus exposed are not at variance with those described in the report.

The placement of the fill must be controlled with suitable field tests to confirm that the required densities are achieved during compaction and that the quality of fill material is within specification.

We trust that the above information will meet with your immediate requirements. Please do not hesitate to call for any further information.

Yours faithfully,



JOHANN VAN DER MERWE (Pr. Sci. Nat.)
Engineering Geologist

C:\WINDOWS\Desktop\data\reports\SCIP\ORANJEVILLE.doc

8. APPENDICES

Test Pit and Auger Hole Profiles

Laboratory Test Results

Dynamic Cone Penetration Tests

Geotechnical Map

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

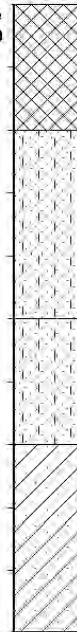
PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: **D1**

Sheet 1 of 1

JOB NUMBER: **M21/3897**

Scale
1:10



0.00

FILL; Moist, grey, medium dense, clayey SAND containing COBBLES and grass.

0.20

Moist, greyish brown, loose, silty SAND; colluvium.

0.50

Moist becoming saturated, dark grey, very loose, silty SAND; colluvium.

0.70

Moist, light grey, stiff, sandy CLAY; alluvium.

1.00

NOTES

- 1) No refusal of hand auger drilling at 1,0m.
- 2) No water seepage encountered.

CONTRACTOR: *Profile Projects*
MACHINE: *Small diameter hand auger*
DRILLED BY: *Profile Projects/jovdm*
PROFILED BY: *Johann van der Merwe*
TYPE SET BY: *Bernhard Crafford*
SETUP FILE: *STANDARD.SET*

INCLINATION :
DIAM : *75mm*
DATE : *17/05/2021*
DATE : *17/05/2021*
DATE : *08/06/2021 19:10*
TEXT : *..ktop\ARCHIVE\M213897.txt*

ELEVATION :
X-COORD : *S26 58 42.4*
Y-COORD : *E28 12 30.2*

HOLE No: **D1**

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

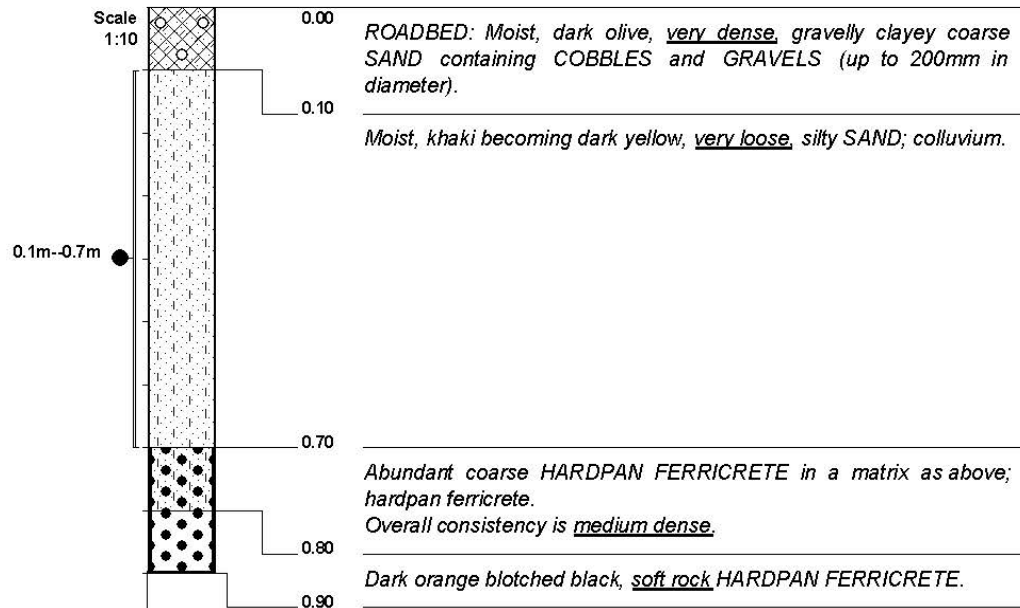
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: D2

Sheet 1 of 1

JOB NUMBER: M21/3897



NOTES

- 1) Gradual refusal of hand auger at 0,9m in hardpan ferricrete.
- 2) No water seepage encountered.
- 3) Disturbed foundation indicator sample taken from 0,1m-0,7m.

CONTRACTOR : Profile Projects
MACHINE : Small diameter hand auger
DRILLED BY : Profile Projects/jovdm
PROFILED BY : Johann van der Merwe
TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : 75mm
DATE : 17/05/2021
DATE : 17/05/2021
DATE : 08/06/2021 19:10
TEXT : ..ktop\ARCHIVE\M213897.txt

ELEVATION :
X-COORD : S26 58 34.5
Y-COORD : E28 12 37.5

HOLE No: D2

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: D4

Sheet 1 of 1

JOB NUMBER: M21/3897

Scale
1:10



ROADBED: Moist, dark olive, very dense, gravelly clayey coarse SAND containing COBBLES and GRAVELS (up to 130mm in diameter).

Slightly moist, light grey becoming dark yellow, loose, clayey SAND; colluvium.

Abundant coarse HARDPAN FERRICRETE in a matrix as above; hardpan ferricrete.
Overall consistency is medium dense.

Dark orange blotched black, soft rock HARDPAN FERRICRETE.

NOTES

- 1) Gradual refusal of hand auger at 0,7m in hardpan ferricrete.
- 2) No water seepage encountered.

CONTRACTOR: Profile Projects
MACHINE: Small diameter hand auger
DRILLED BY: Profile Projects/jovdm
PROFILED BY: Johann van der Merwe
TYPE SET BY: Bernhard Crafford
SETUP FILE: STANDARD.SET

INCLINATION :
DIAM : 75mm
DATE : 17/05/2021
DATE : 17/05/2021
DATE : 08/06/2021 19:10
TEXT : ..ktop\ARCHIVE\M213897.txt

ELEVATION :
X-COORD : S26 58 38.5
Y-COORD : E28 12 51.3

HOLE No: D4

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: D6

Sheet 1 of 1

JOB NUMBER: M21/3897

Scale
1:10



0.00

ROADBED: Moist, dark olive, very dense, gravelly clayey coarse SAND containing COBBLES and GRAVELS (up to 200mm in diameter).

0.25

Moist, dark brown, loose, silty SAND; colluvium.

0.40

Moist, orange becoming pale yellow, very dense, fine SAND; residual sandstone.

0.60

NOTES

- 1) Gradual refusal of hand auger at 0,6m in very dense residual sandstone.
- 2) No water seepage encountered.

CONTRACTOR: *Profile Projects*

MACHINE: *Small diameter hand auger*

DRILLED BY: *Profile Projects/jovdm*

PROFILED BY: *Johann van der Merwe*

TYPE SET BY: *Bernhard Crafford*

SETUP FILE: *STANDARD.SET*

INCLINATION :

DIAM : *75mm*

DATE : *17/05/2021*

DATE : *17/05/2021*

DATE : *08/06/2021 19:10*

TEXT : *..ktop\ARCHIVE\M213897.txt*

ELEVATION :

X-COORD : *S26 58 45.2*

Y-COORD : *E28 12 46.6*

HOLE No: D6

COOB Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: D7

Sheet 1 of 1

JOB NUMBER: M21/3897

Scale
1:10



0.00

Moist, dark olive, dense, clayey SAND containing DOLERITE GRAVELS and COBBLES (up to 100mm in diameter).

0.10

Dry, dark brown, dense, clayey SAND; colluvium.

0.25

Slightly moist, dark yellow blotched orange, dense, gravelly clayey SAND containing small DOLERITE CORE-STONES; residual dolerite.

0.40

As above and containing numerous DOLERITE CORE-STONES; residual dolerite.

NOTES

- 1) Abrup refusal of hand auger drilling at 0,4m in dolerite corestones.
- 2) No water seepage encountered.

CONTRACTOR: Profile Projects
MACHINE: Small diameter hand auger
DRILLED BY: Profile Projects/jovdm
PROFILED BY: Johann van der Merwe
TYPE SET BY: Bernhard Crafford
SETUP FILE: STANDARD.SET

INCLINATION :
DIAM : 75mm
DATE : 17/05/2021
DATE : 17/05/2021
DATE : 08/06/2021 19:10
TEXT : ..ktop\ARCHIVE\M213897.txt

ELEVATION :
X-COORD : S26 58 47.5
Y-COORD : E28 12 56.2

HOLE No: D7

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

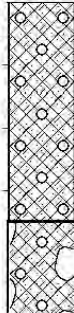
PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: D8

Sheet 1 of 1

JOB NUMBER: M21/3897

Scale
1:10



0.00

ROADBED: Moist, dark olive, very dense, gravelly clayey coarse SAND containing COBBLES and GRAVELS (up to 200mm in diameter).

0.35

ROADBED: Moist, dark olive, very dense, gravelly clayey coarse SAND containing COBBLES, GRAVELS and BOULDERS.

NOTES

- 1) Gradual refusal of hand auger at 0,35m in very dense roadbed material.
- 2) No water seepage encountered.

CONTRACTOR: Profile Projects
MACHINE: Small diameter hand auger
DRILLED BY: Profile Projects/jovdm
PROFILED BY: Johann van der Merwe
TYPE SET BY: Bernhard Crafford
SETUP FILE: STANDARD.SET

INCLINATION :
DIAM : 75mm
DATE : 17/05/2021
DATE : 17/05/2021
DATE : 08/06/2021 19:10
TEXT : ..ktop\ARCHIVE\M213897.txt

ELEVATION :
X-COORD : S26 58 51.8
Y-COORD : E28 12 55.1

HOLE No: D8

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

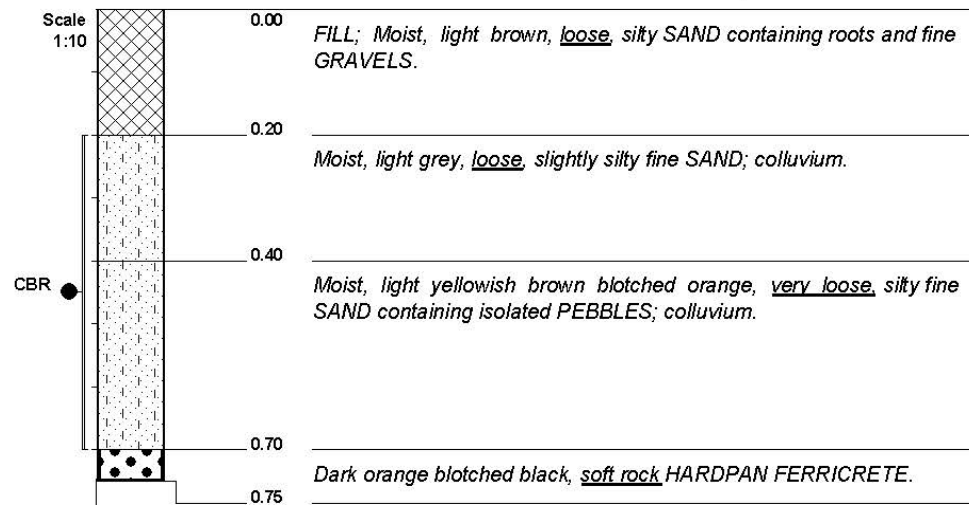
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: **OR/1**

Sheet 1 of 1

JOB NUMBER: **M21/3897**



NOTES

- 1) Abrupt refusal of hand tool excavation at 0,75m in hardpan ferricrete.
- 2) No water seepage encountered.
- 3) Disturbed bulk CBR sample taken from 0,2m-0,7m.

CONTRACTOR : *Profile Projects*
 MACHINE : *Hand Tool Excavation*
 DRILLED BY : *Profile Projects/jovdm*
 PROFILED BY : *Johann van der Merwe*
 TYPE SET BY : *Bernhard Crafford*
 SETUP FILE : *STANDARD.SET*

INCLINATION : *Vertical*
 DIAM : *Trench*
 DATE : *17/05/2021*
 DATE : *17/05/2021*
 DATE : *08/06/2021 19:10*
 TEXT : *..ktop\ARCHIVE\M213897.txt*

ELEVATION :
 X-COORD : *S26 58 39.0*
 Y-COORD : *E28 12 48.7*

HOLE No: **OR/1**

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7

ENGINEERING ADVICE & SERVICES

Metsimaholo Village, Oranjeville, Free State Province

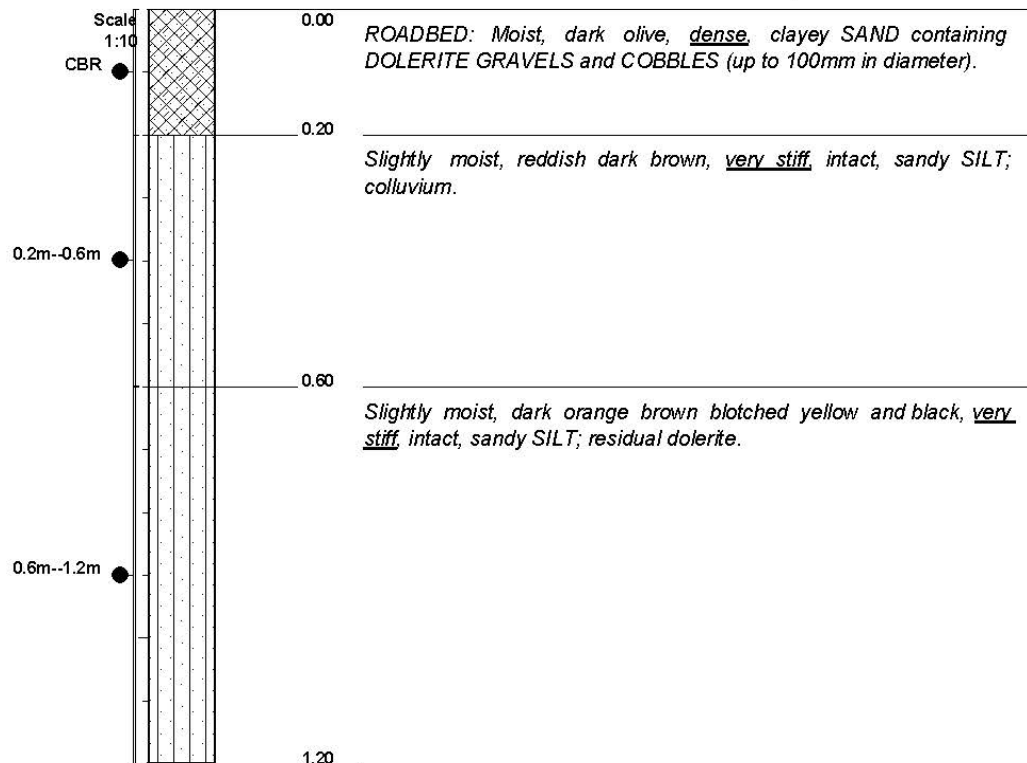
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:

PROPOSED UPGRADING OF ROAD NETWORK IN METSIMAHOLO

HOLE No: OR/2

Sheet 1 of 1

JOB NUMBER: M21/3897



NOTES

- 1) Slow excavation but no refusal of hand tool excavation at 1,2m.
- 2) No water seepage encountered.
- 3) Disturbed bulk CBR samples taken from 0,0--0,2m from 0,2m--0,6m and from 0,6m--1,2m.

CONTRACTOR: Profile Projects
MACHINE: Hand Tool Excavation
DRILLED BY: Profile Projects/jovdm
PROFILED BY: Johann van der Merwe
TYPE SET BY: Bernhard Crafford
SETUP FILE: STANDARD.SET

INCLINATION:
DIAM: Trench
DATE: 17/05/2021
DATE: 17/05/2021
DATE: 08/06/2021 19:10
TEXT: ..ktop\ARCHIVE\M213897.txt

ELEVATION:
X-COORD: S26 58 46.6
Y-COORD: E28 12 48.2

HOLE No: OR/2

C00B Johann van der Merwe (Pty) Ltd

dotPLOT 7022 PBpH7



1350 Hartbeestpruit Street, Hatfield, Pretoria, 0083
☎ 012 362 2352 ☎ 082 784 5667
✉ info@labworx.co.za 🌐 www.labworx.co.za
Reg. No: 2003/007845/23 Vat No: 4500204070

Test Report

Attention :	Mr Johann van der Merwe	Client :	Johann van der Merwe (Pty) Ltd.
Project :	Oranjeville Roads (M21/3897)	Contact No. :	082 570 2222
Report Date :	03-06-2021	Address :	289 Polaris Avenue Waterkloofrif 0181
Pages :	8		
Report No. :	JM/OR 21 06-001		

Herewith please find test results for your attention.

- | | | |
|----------------------|------------|---|
| 1. Contents : | p 2, 3 & 5 | Foundation Indicator, pH & Conductivity Results |
| | p 4, 6 - 8 | MDD/OMC, CBR & Road Indicator Results |

- | | |
|---|--|
| 2. Deviation / Addition / Exclusion from test method / sampling method : | None |
| 3. Decision rule agreed on : | None |
| 4. Remarks : | Information typed in " <i>Italic</i> " font is supplied by the Client. |

Hope you find all in order.

Regards,



Bernard Conradie
Technical Signatory

Disclaimer:

This test report relates to the area/s and/or sample/s tested or as received only. Where information is supplied by the client, it may affect the validity of the test results.

If a test report is published or reproduced, it will be done so in full, without any omission and without any manual or electronic alterations.

Everything possible is done to ensure that tests are representative and are performed accurately, and reports and conclusions are quoted correctly.

LTG Civil Services or its officials can in no way be held liable for consequential damage or loss due to any erroneous statement or opinion contained in a report based on such tests.

Tests marked with a (#) are from external providers.

GRAVEL, SOIL AND SAND ANALYSIS REPORT

Project:	Orangeville Roads (M21/3897)	Date Received:	18-05-2021
Client:	Johann van der Merwe (Pty) Ltd.	Report Date:	03-06-2021

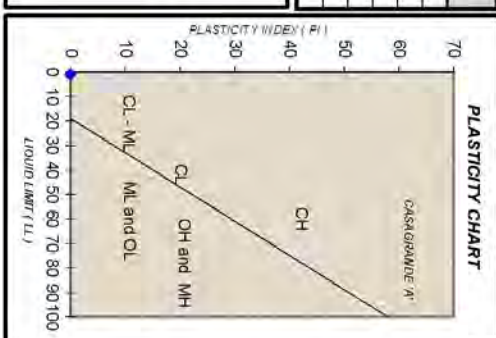
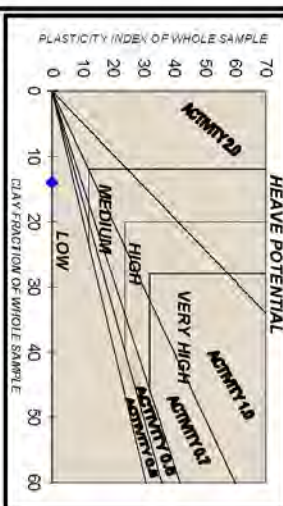
Your Reference : Sampled By :	<i>D / 2, 0.1 - 0.7m</i> Client	Environmental Conditions :	Not Specified	Sample No. : Sampling Method :	21/552 Not Specified
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[illegible]

GENERAL :	CBR RESULTS :
Effective size :	<0.002
Uniformity co-eff. :	269.8
Curvature co-eff. :	36.7
Oversize Index :	0
Strikethrough Product :	52
Grading co-eff. :	10.5
Swell @ 100% :	-
	@ 90% comp. :

SIEVE ANALYSIS

Sieve Size	Percentage Passing
60	100
75	100
100	75



REMARKS:

GRAVEL, SOIL AND SAND ANALYSIS REPORT

Report No.: JM/OR 21 06-001

Project: **Oranjeville Roads (M21/3897)**
Client: **Johann van der Merwe (Pty) Ltd**

Date Received: **18-05-2021**
Report Date: **03-06-2021**

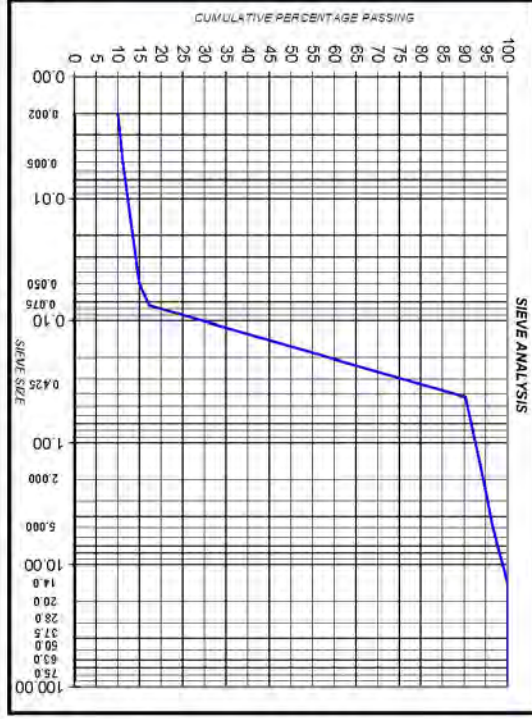
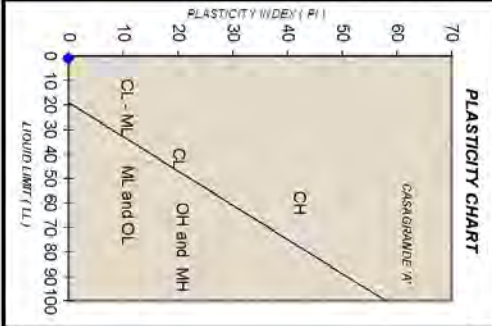
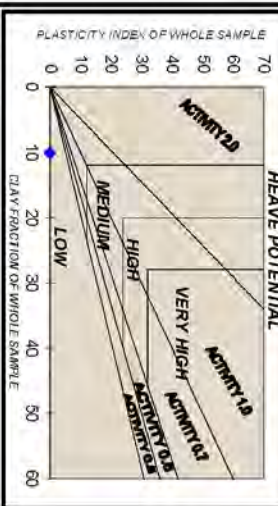
Your Reference: **OR / 1, 0.2 - 0.4m**
Sampled By: **Client**

Environmental Conditions: **Not Specified**

Sample No.: **21/554**
Sampling Method: **Not Specified**

Description	Sieve Analysis SANS 3001-GR1 Cumulative percentage passing															Soil Mortar Analysis % of mat. <2,00 mm				Atterberg Limits SANS 3001-GR10			Classification																								
(Unified Soil Classification)	pH SANS 5854		Conductivity (S/m) SANS 6240		100.0mm	75.0mm	63.0mm	50.0mm	37.5mm	28.0mm	20.0mm	14.0mm	5.00mm	2.00mm	0.425mm	0.075mm	0.05 mm	0.005 mm	0.002 mm	Grading Modulus SANS 3001-PR5				Coarse - sand <2,0 >0,425mm		Fine - sand <0,425 >0,05mm		Silt <0,05 >0,005mm		Clay <0,005 mm		Liquid Limit %		Plasticity Index		Linear Shrinkage %		Unified Soil		Colto		US. Highway		Group Index			
					-	-	-	-	-	-	-	100	97	94	90	17	15.0	11.2	10.1	1.0	4.4		79.7		4.0		11.9		-		NP		0.0		SM (d)		-		A-2.4		0						
	Light Brown Silty Sand		7.8		0.020																																										

GENERAL:		CBR RESULTS:	
Effective size:	<0.002	SANS 3001-GR40	
Uniformity co-eff.:	206.8	@ 100% comp.:	-
Curvature co-eff.:	49.7	@ 98% comp.:	-
Oversize index:	0	@ 97% comp.:	-
Shrinkage Product:	0	@ 95% comp.:	-
Shrinkage co-eff.:	5.4	@ 93% comp.:	-
Swell @ 100%:	-	@ 90% comp.:	-



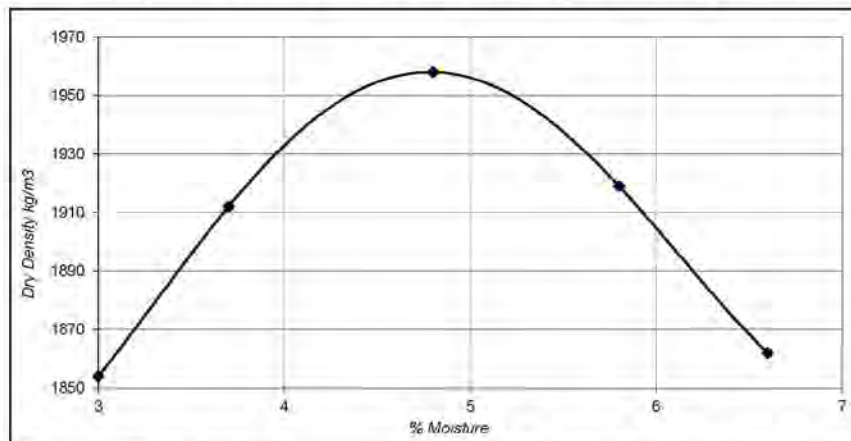
REMARKS:

GRAVEL, SOIL AND SAND ANALYSIS REPORT
Report No. : JM/OR 21 06-001

Project :	Oranjeville Roads (M21/3897)	Date Received :	18-05-2021
Client :	Johann van der Merwe (Pty) Ltd.	Report Date :	03-06-2021
Your Reference :	OR / 1, 0.2 - 0.7m	Sample No. :	21/555
Sampled By :	Client	Environmental Conditions :	Not Specified
Sampling Method :	Not Specified		

Description	Sieve Analysis SANS 3001-GR1 Cumulative Percentage Passing											Grading Modulus SANS 3001-PR5	Atterberg Limits SANS 3001-GR10			Classification			
	100.0mm	75.0mm	63.0mm	50.0mm	37.5mm	28.0mm	20.0mm	14.0mm	5.00mm	2.00mm	0.425mm	0.075mm	Liquid Limit %	Plasticity Index	Linear Shrinkage %	Unified Soil	Colto	US. Highway	Group Index
Unified Soil Classification																			
Light Brown Silty Sand	-	-	-	-	-	-	100	98	92	87	79	20	1.1	-	NP	0.0	SM (D)	G7	A-2-4 0

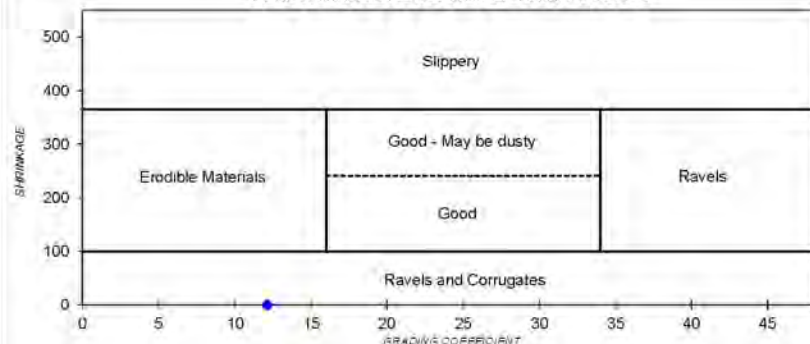
SANS 3001-GR20 & GR30	Maximum Dry Density :	1958	kg/m ³
	Optimum Moisture Content :	4.8	%


GENERAL :

 Effective Size : <0.075
 Uniformity Co-eff. : 245.4
 Curvature Co-eff. : 42.3
 Oversize Index : 0
 Shrinkage Product : 0
 Grading Co-eff. : 12.1
 Swell @ 100% : 0.04

CBR RESULTS : SANS 3001-GR40

 @ 100% comp. : 49
 @ 98% comp. : 35
 @ 97% comp. : 29
 @ 95% comp. : 21
 @ 93% comp. : 15
 @ 90% comp. : 10

PERFORMANCE AS GRAVEL WEARING COURSE

REMARKS:

GRAVEL, SOIL AND SAND ANALYSIS REPORT

Report No.: JM/OR 21 06-001

Project: **Oranjeville Roads (M21/3897)**
Client: **Johann van der Merwe (Pty) Ltd**

Date Received: **18-05-2021**
Report Date: **03-06-2021**

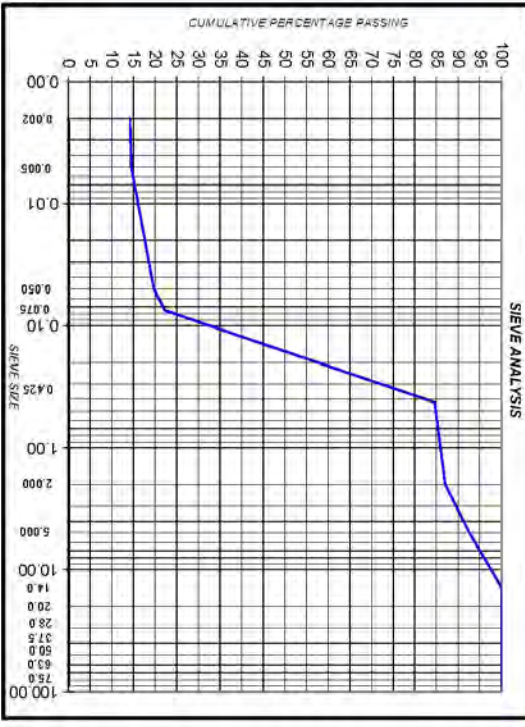
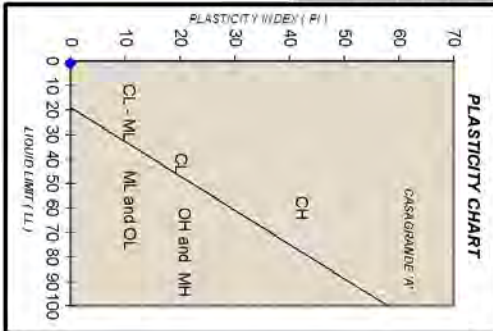
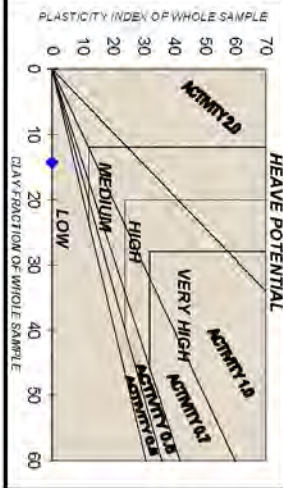
Your Reference: **OR / 1, 0.4 - 0.7m**
Sampled By: **Client**

Environmental Conditions: **Not Specified**

Sample No.: **21/556**
Sampling Method: **Not Specified**

Description	Sieve Analysis SANS 3001-GR 1 Cumulative percentage passing																			Soil Mortar Analysis % of mat. <2,00 mm				Atterberg Limits SANS 3001-GR10		Classification						
(Unified Soil Classification)	pH SANS 5854		Conductivity (S/m) SANS 6240		100.0mm	75.0mm	63.0mm	50.0mm	37.5mm	28.0mm	20.0mm	14.0mm	5.00mm	2.00mm	0.425mm	0.075mm	0.05 mm	0.005 mm	0.002 mm	Grading Modulus SANS 3001-PR5		Coarse - sand <2,0 >0,425mm	Fine - sand <0,425 >0,05mm	Silt <0,05 >0,005mm	Clay <0,005 mm	Liquid Limit %	Plasticity Index	Linear Shrinkage %	Unified Soil	Colto	US. Highway	Group Index
	Light Brown Silty Sand	6.9	0.019	-	-	-	-	-	-	-	-	100	93	87	85	22	19.7	14.5	14.3	1.1	2.8	74.6	6.0	16.7	-	NP	0.0	SM (d)	-	A-2.4	0	

GENERAL:		CBR RESULTS:	
Effective size:	<0.002	SANS 3001-GR40	-
Uniformity co-eff.:	214.2	@ 100% comp.:	-
Curvature co-eff.:	40.3	@ 98% comp.:	-
Over-size index:	0	@ 97% comp.:	-
Shrinkage Product:	0	@ 95% comp.:	-
Grading co-eff.:	12.0	@ 93% comp.:	-
Swell @ 100%:	-	@ 90% comp.:	-



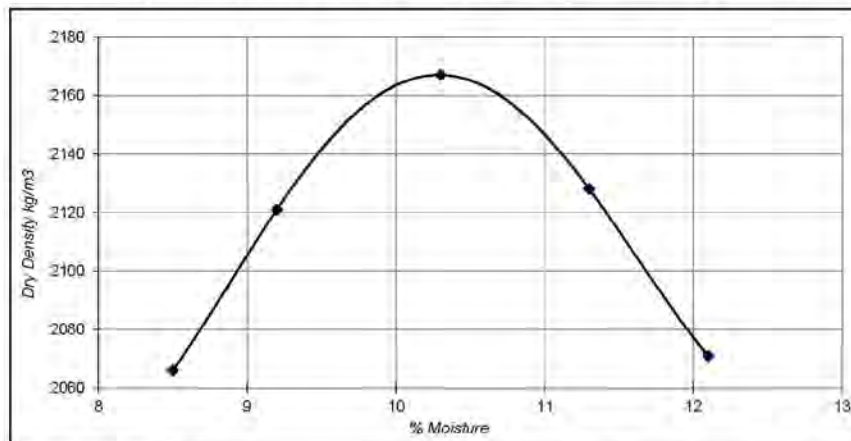
REMARKS:

GRAVEL, SOIL AND SAND ANALYSIS REPORT
Report No. : JM/OR 21 06-001

Project :	Oranjeville Roads (M21/3897)	Date Received :	18-05-2021
Client :	Johann van der Merwe (Pty) Ltd.	Report Date :	03-06-2021
Your Reference :	OR / 2, 0.0 - 0.2m	Sample No. :	21/557
Sampled By :	Client	Environmental Conditions :	Not Specified
Sampling Method :	Not Specified		

Description	Sieve Analysis SANS 3001-GR1 Cumulative Percentage Passing												Grading Modulus SANS 3001-PR5	Atterberg Limits SANS 3001-GR10			Classification			
	100.0mm	75.0mm	63.0mm	50.0mm	37.5mm	28.0mm	20.0mm	14.0mm	5.00mm	2.00mm	0.425mm	0.075mm		Liquid Limit %	Plasticity Index	Linear Shrinkage %	Unified Soil	Colto	US. Highway	Group Index
Unified Soil Classification																				
Dark Olive Brown Poorly Graded Clayey Sand	-	-	100	83	73	64	60	57	50	36	9	5	2.5	36	13	6.9	SP/SC	G7	A-2-6	0

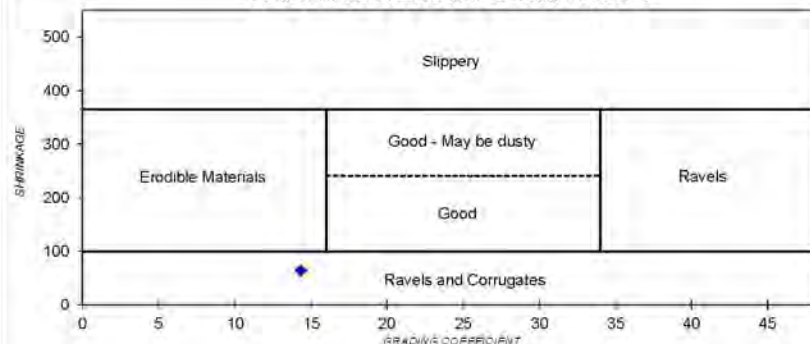
SANS 3001-GR20 & GR30	Maximum Dry Density :	2167	kg/m ³
	Optimum Moisture Content :	10.3	%


GENERAL :

 Effective Size : 2.000
 Uniformity Co-eff. : 10.0
 Curvature Co-eff. : 0.1
 Oversize Index : 1140
 Shrinkage Product : 64
 Grading Co-eff. : 14.3
 Swell @ 100% : 0.11

CBR RESULTS : SANS 3001-GR40

 @ 100% comp. : 52
 @ 98% comp. : 44
 @ 97% comp. : 41
 @ 95% comp. : 34
 @ 93% comp. : 27
 @ 90% comp. : 18

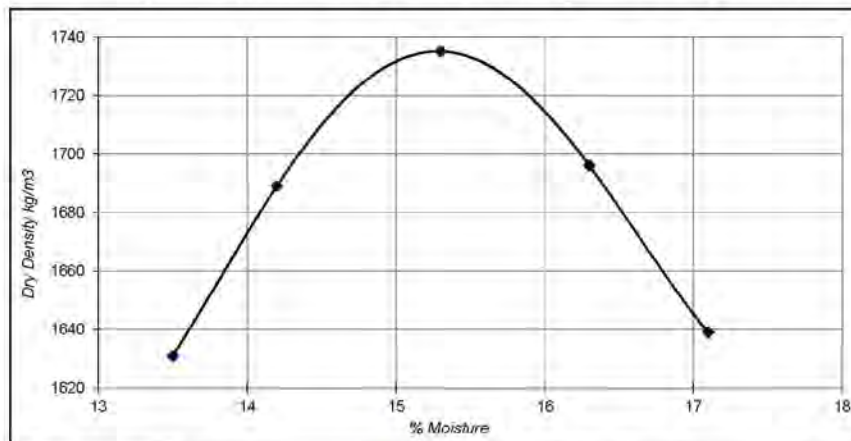
PERFORMANCE AS GRAVEL WEARING COURSE

REMARKS:

GRAVEL, SOIL AND SAND ANALYSIS REPORT
Report No. : JM/OR 21 06-001

Project :	Oranjeville Roads (M21/3897)	Date Received :	18-05-2021
Client :	Johann van der Merwe (Pty) Ltd.	Report Date :	03-06-2021
Your Reference :	OR / 2, 0.2 - 0.6m	Sample No. :	21/558
Sampled By :	Client	Environmental Conditions :	Not Specified
Sampling Method :	Not Specified		

Description	Sieve Analysis SANS 3001-GR1 Cumulative Percentage Passing											Grading Modulus SANS 3001-PR5	Atterberg Limits SANS 3001-GR10			Classification				
Unified Soil Classification	100.0mm	75.0mm	63.0mm	50.0mm	37.5mm	28.0mm	20.0mm	14.0mm	5.00mm	2.00mm	0.425mm		0.075mm	Liquid Limit %	Plasticity Index	Linear Shrinkage %	Unified Soil	Colto	US Highway	Group Index
Dark Reddish Brown Clayey Sand	-	-	-	-	-	100	95	94	93	92	87	42	0.8	43	21	10.1	SC	<G9	A-7-6	5

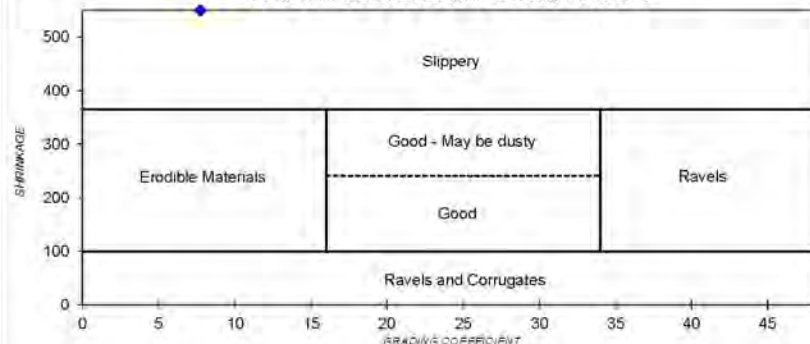
SANS 3001-GR20 & GR30	Maximum Dry Density :	1735	kg/m ³
	Optimum Moisture Content :	15.3	%


GENERAL :

 Effective Size : <0.075
 Uniformity Co-eff. : 149.7
 Curvature Co-eff. : 0.7
 Oversize Index : 0
 Shrinkage Product : 875
 Grading Co-eff. : 7.7
 Swell @ 100% : 1.62

CBR RESULTS : SANS 3001-GR40

 @ 100% comp. : 8
 @ 98% comp. : 6
 @ 97% comp. : 5
 @ 95% comp. : 4
 @ 93% comp. : 3
 @ 90% comp. : 3

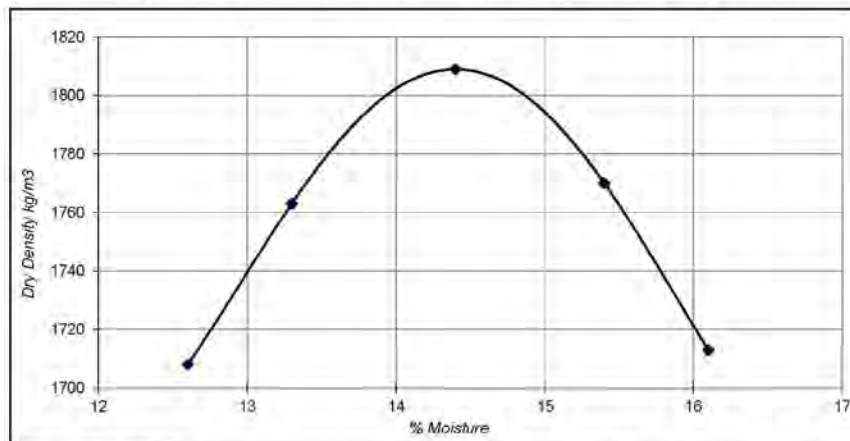
PERFORMANCE AS GRAVEL WEARING COURSE

REMARKS:

GRAVEL, SOIL AND SAND ANALYSIS REPORT
Report No. : JM/OR 21 06-001

Project :	Oranjeville Roads (M21/3897)	Date Received :	18-05-2021
Client :	Johann van der Merwe (Pty) Ltd.	Report Date :	03-06-2021
Your Reference :	OR / 2, 0.6 – 1.2m	Sample No. :	21/560
Sampled By :	Client	Environmental Conditions :	Not Specified
Sampling Method :	Not Specified		

Description	Sieve Analysis SANS 3001-GR1 Cumulative Percentage Passing											Grading Modulus SANS 3001-PR5	Atterberg Limits SANS 3001-GR10			Classification				
Unified Soil Classification	100.0mm	75.0mm	63.0mm	50.0mm	37.5mm	28.0mm	20.0mm	14.0mm	5.00mm	2.00mm	0.425mm		0.075mm	Liquid Limit %	Plasticity Index	Linear Shrinkage %	Unified Soil	Colto	US. Highway	Group Index
Dark Reddish Brown Clayey Sand	-	-	-	-	-	-	100	99	98	96	94	42	0.7	38	19	8.4	SC	<G9	A-6	4

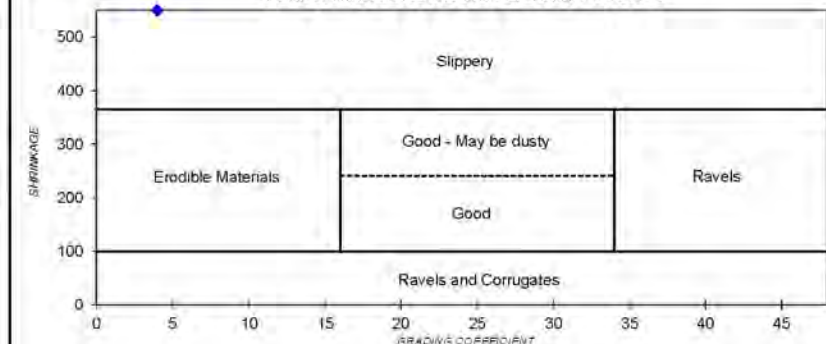
SANS 3001-GR20 & GR30	Maximum Dry Density :	1809	kg/m ³
	Optimum Moisture Content :	14.4	%


GENERAL :

 Effective Size : <0.075
 Uniformity Co-eff. : 137.2
 Curvature Co-eff. : 0.7
 Oversize Index : 0
 Shrinkage Product : 788
 Grading Co-eff. : 4.0
 Swell @ 100% : 1.83

CBR RESULTS : SANS 3001-GR40

 @ 100% comp. : 9
 @ 98% comp. : 7
 @ 97% comp. : 7
 @ 95% comp. : 6
 @ 93% comp. : 4
 @ 90% comp. : 3

PERFORMANCE AS GRAVEL WEARING COURSE

REMARKS:

283

DCP GRAPHICAL REPRESENTATION

PROJECT: ORANJEVILLE ROADS

DATE TESTED: 17/05/2021

CLIENT: ENGINEERING ADVICE

OPERATOR: SAKKIE FOURIE

TEST POSITION: D1

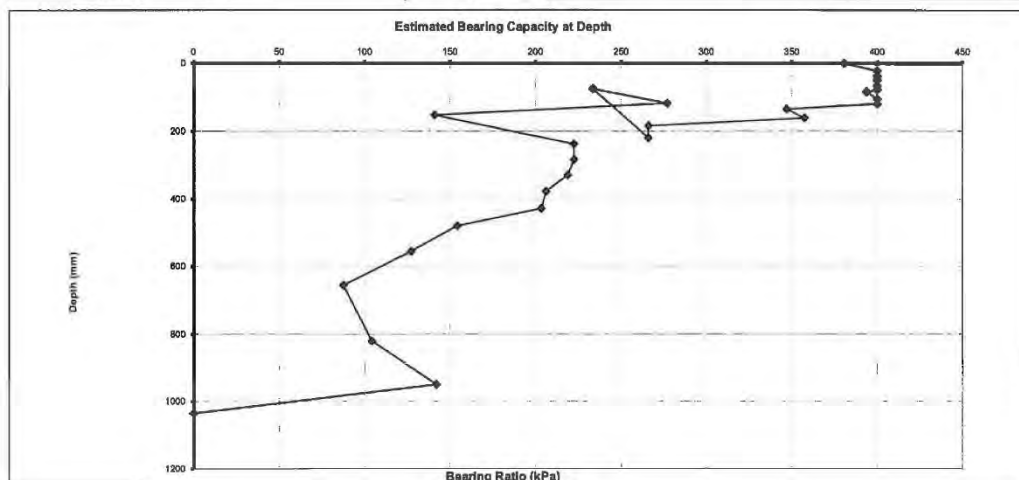
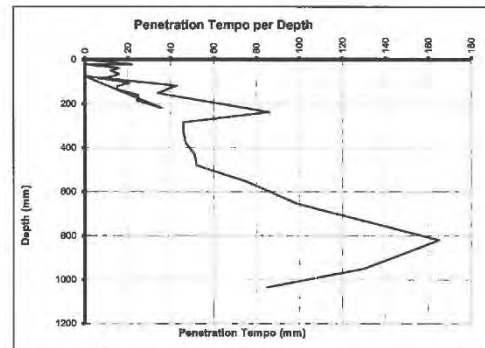
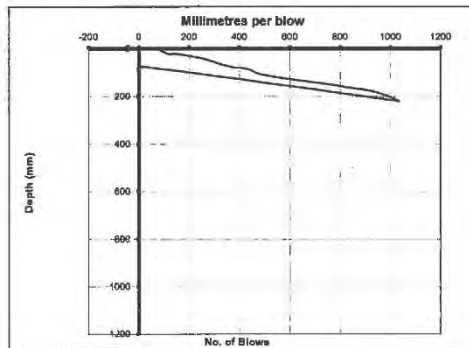
STARTING DEPTH: 0mm

MATERIAL TYPE: COLLUVIUM

INSTRUMENT USED:

CONSTRUCTION TYPE:

NOTE: 0



285

DCP GRAPHICAL REPRESENTATION

PROJECT: ORANJEVILLE ROADS

DATE TESTED: 17/05/2021

CLIENT: ENGINEERING ADVICE

OPERATOR: SAKKIE FOURIE

TEST POSITION: D2

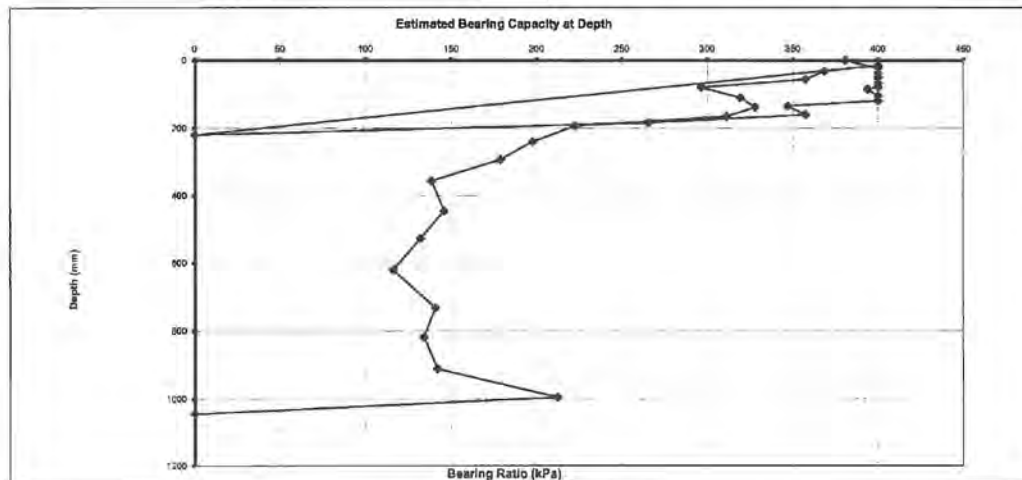
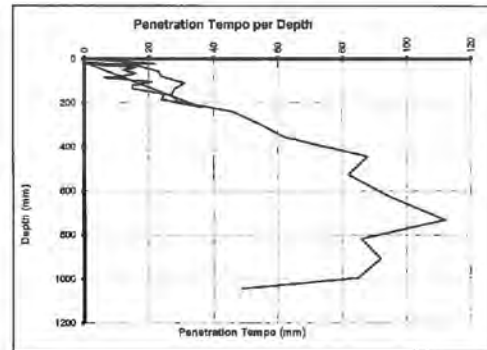
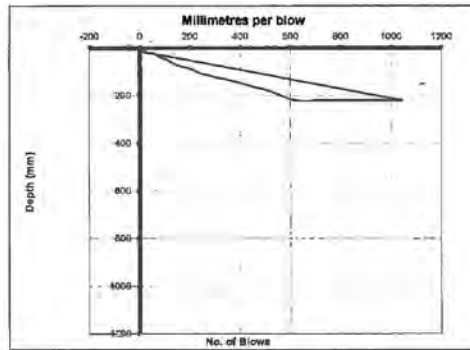
STARTING DEPTH: 0mm

MATERIAL TYPE: COLLUVIUM

INSTRUMENT USED:

CONSTRUCTION TYPE:

NOTE: 0



287

DCP GRAPHICAL REPRESENTATION

PROJECT: ORANJEVILLE ROADS

DATE TESTED: 17/05/2021

CLIENT: ENGINEERING ADVICE

OPERATOR:

TEST POSITION: D3

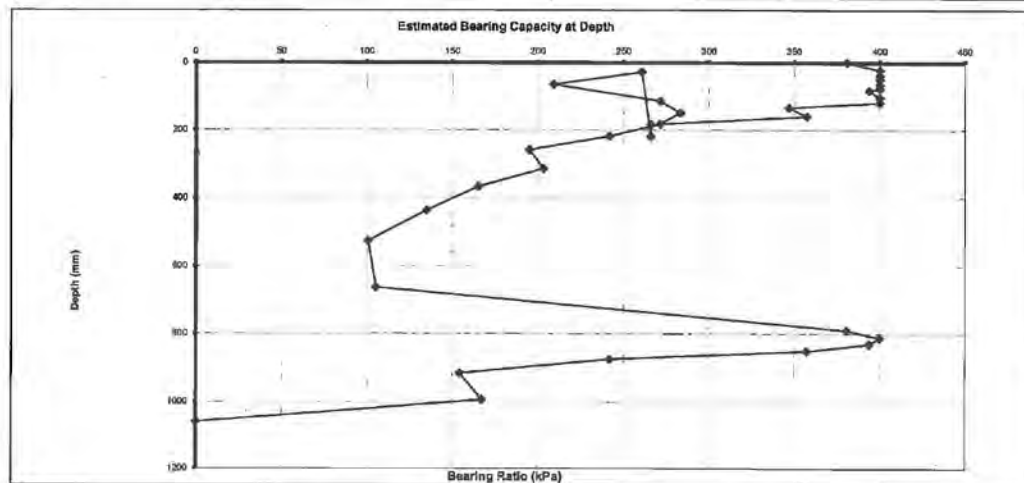
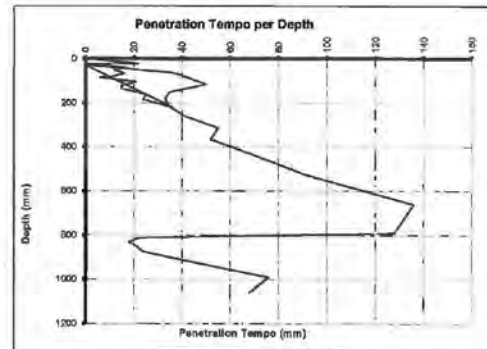
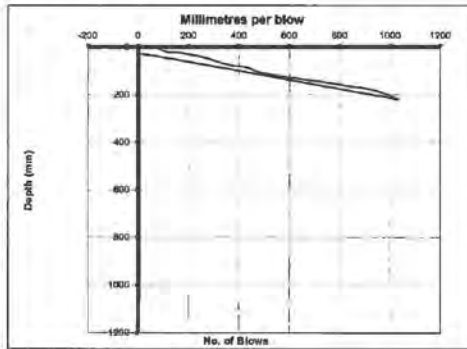
STARTING DEPTH: 0mm

MATERIAL TYPE: RESIDUAL GRANITE

INSTRUMENT USED:

CONSTRUCTION TYPE:

NOTE: 0



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DCP GRAPHICAL REPRESENTATION

PROJECT: ORANJEVILLE ROADS

DATE TESTED: 17/05/2021

CLIENT: ENGINEERING ADVICE

OPERATOR:

TEST POSITION: D3

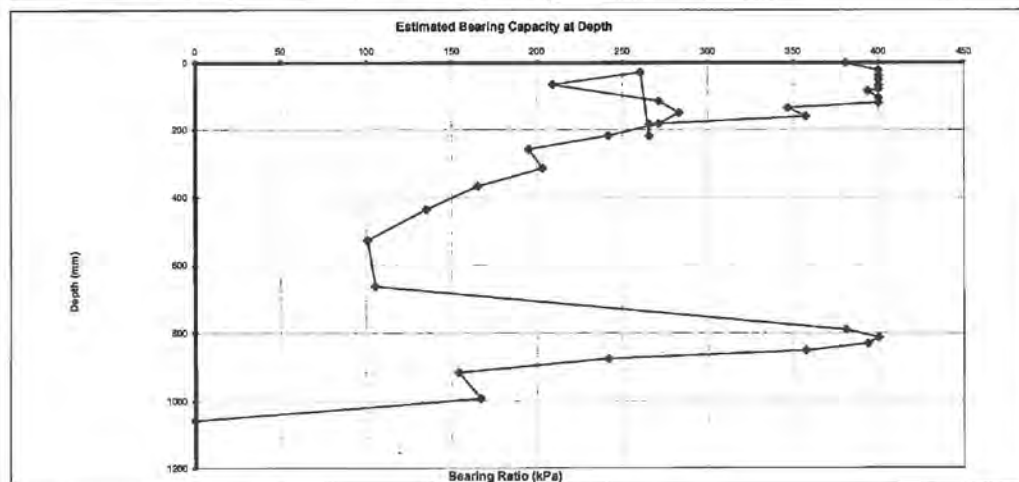
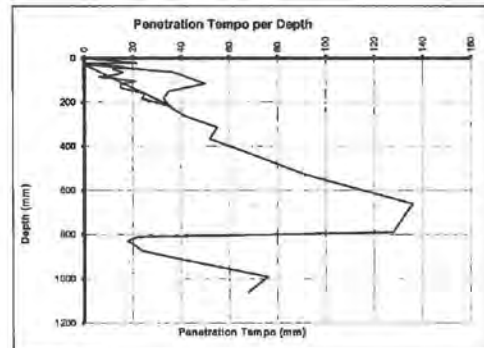
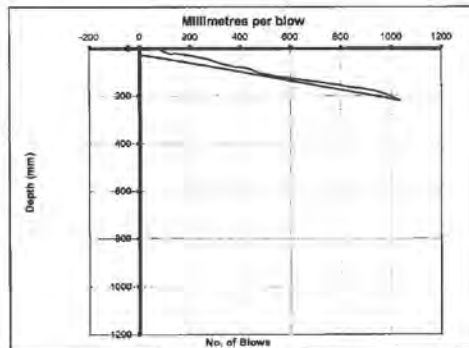
STARTING DEPTH: 0mm

MATERIAL TYPE: Sandy Colluvium

INSTRUMENT USED:

CONSTRUCTION TYPE:

NOTE: 0



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DCP GRAPHICAL REPRESENTATION

PROJECT: ORANJEVILLE ROADS

DATE TESTED: 17/05/2021

CLIENT: ENGINEERING ADVICE

OPERATOR:

TEST POSITION: D4

STARTING DEPTH: 0mm

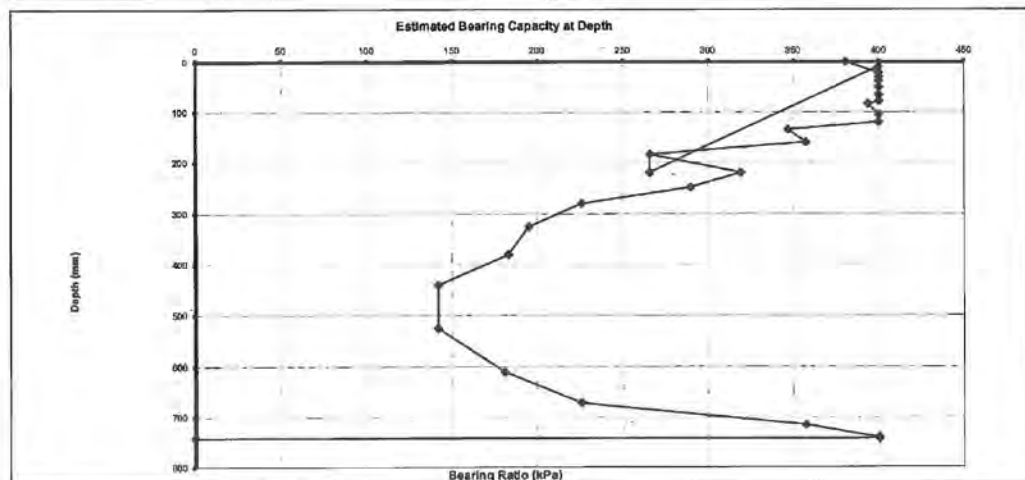
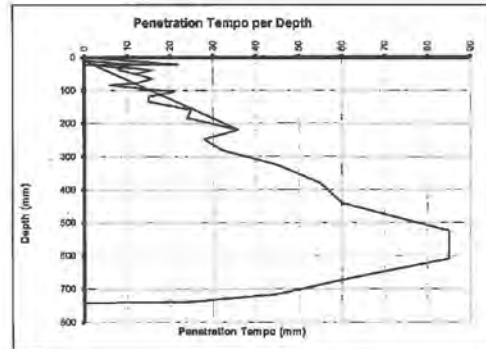
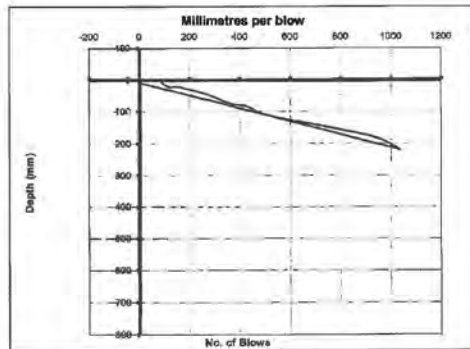
MATERIAL TYPE: Sandy Colluvium

INSTRUMENT USED:

CONSTRUCTION TYPE:

NOTE:

0



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DCP GRAPHICAL REPRESENTATION

PROJECT: ORANJEVILLE ROADS

DATE TESTED: 17/05/2021

CLIENT: ENGINEERING ADVICE

OPERATOR:

TEST POSITION: D5

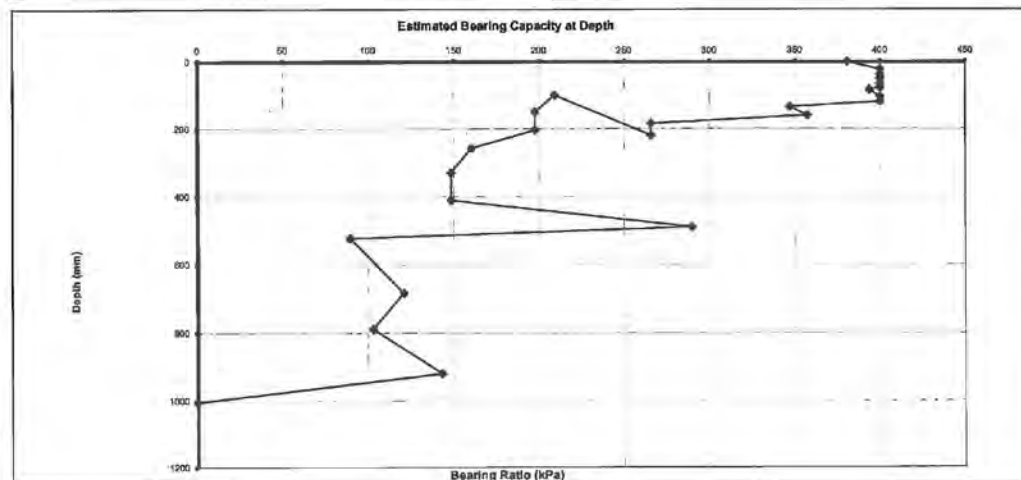
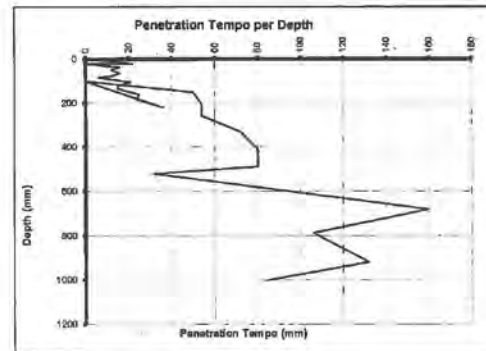
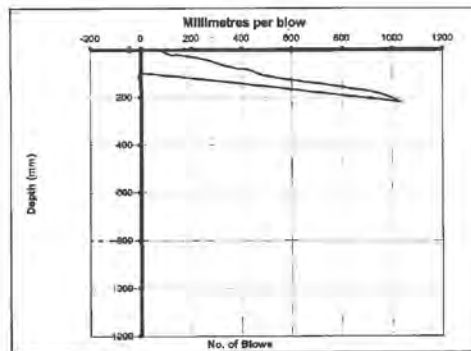
STARTING DEPTH: 0mm

MATERIAL TYPE: Residual Dolerite

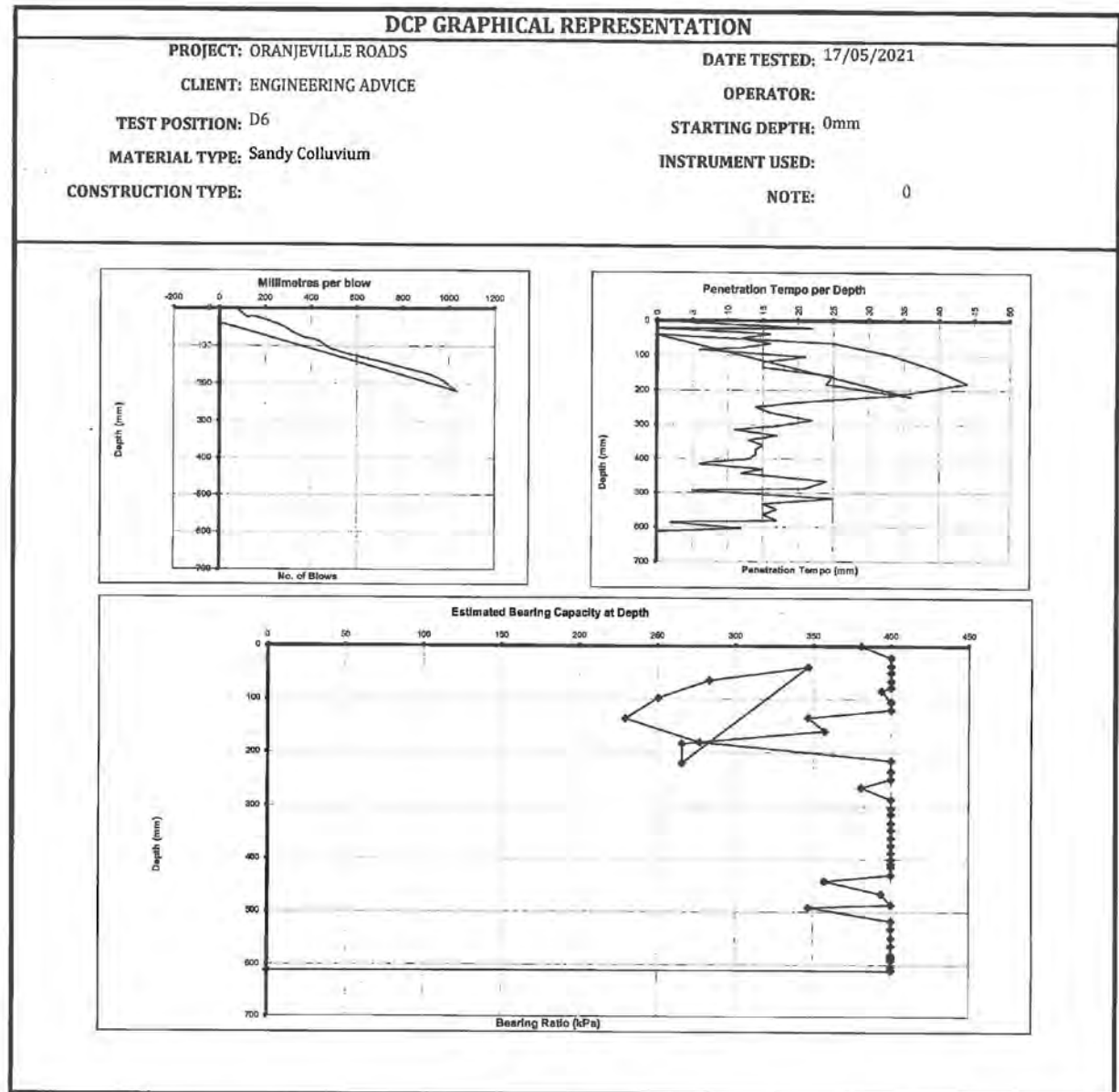
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CONSTRUCTION TYPE:

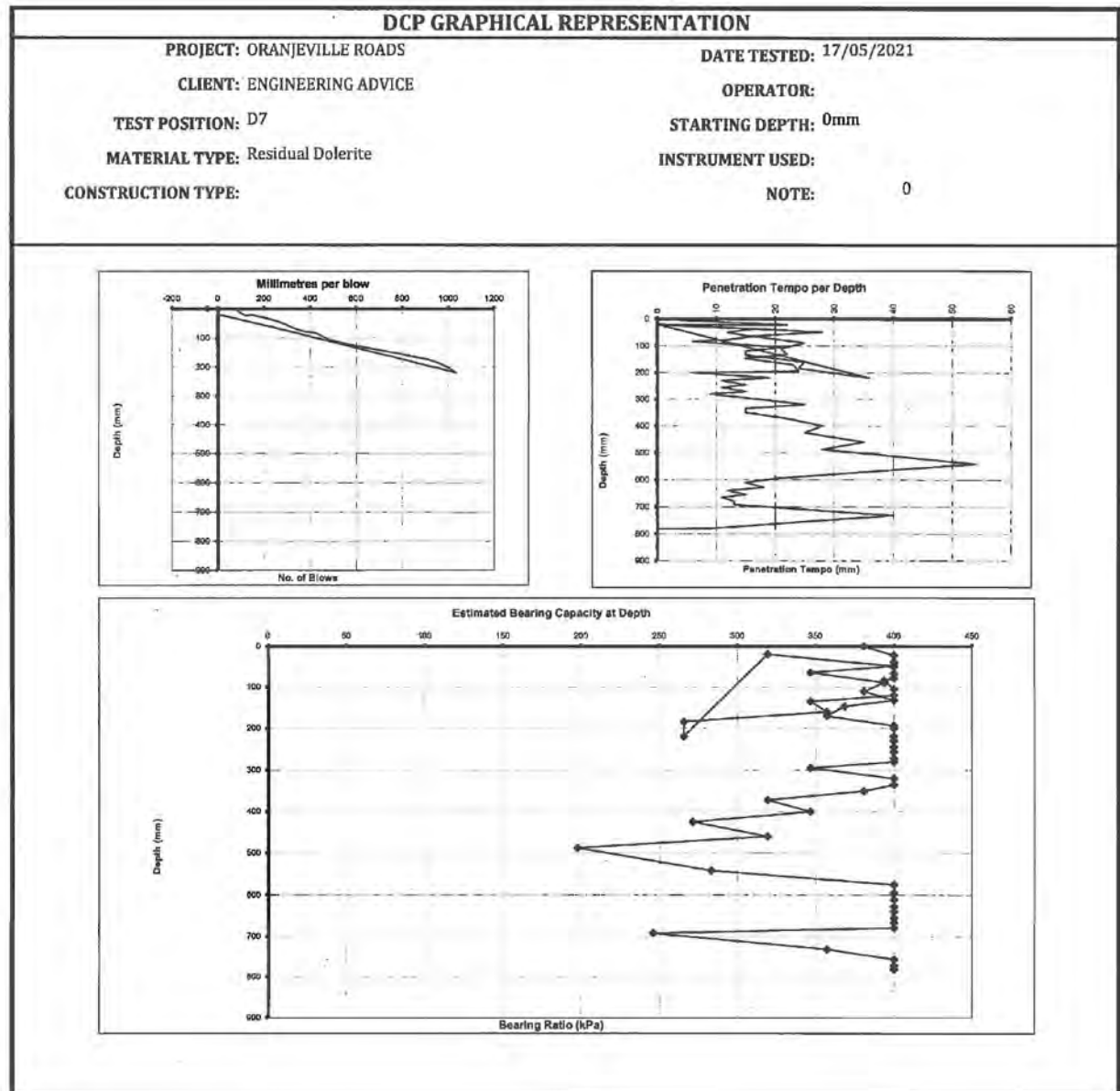
NOTE: 0



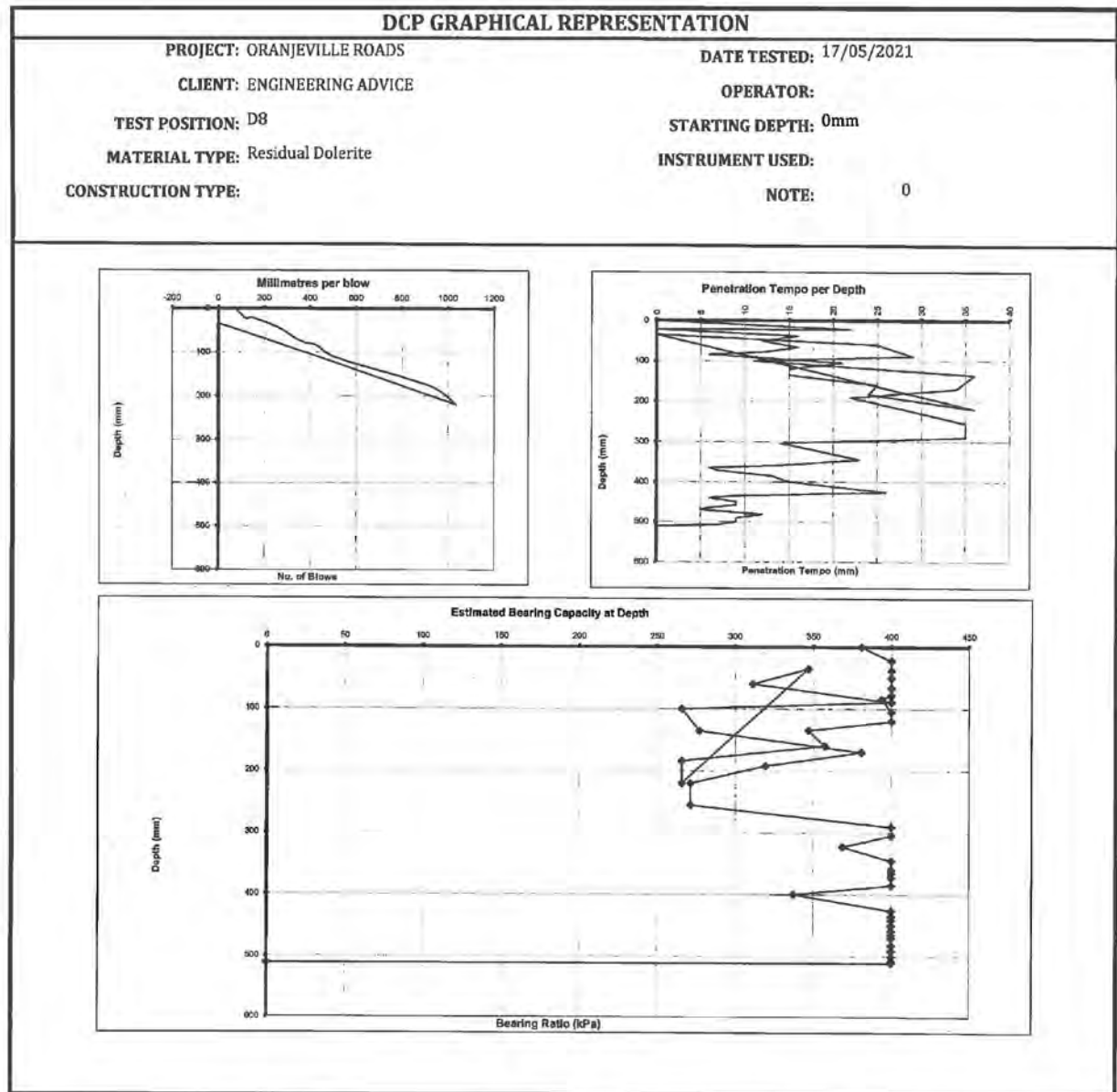
DCP DATA CONTINUED									
PROJECT: ORANJEVILLE ROADS					DATE TESTED: 17/05/2021				
CLIENT: ENGINEERING ADVICE					OPERATOR:				
TEST POSITION: D6					STARTING DEPTH: At surface				
MATERIAL TYPE: Sandy Colluvium					INSTRUMENT USED:				
CONSTRUCTION TYPE:					NOTE:				
Number of Blows	Depth (mm)	Corrective Depth (mm)	Penetration Tempo	Structure Nr (dn) mm/blow	Consistency	Estimate Bearing Ratio (kPa)	In Situ CBR 4:10x (dn) ^{-1.27}	In Situ CBR (TMH 6)	In Situ UCS 2900x (dn) ^{-1.09}
5	40	40mm	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5	65	65mm	25	5,0	Very Dense	347	53	56	502
5	98	98mm	33	6,6	Dense	283	37	39	371
5	137	137mm	39	7,8	Dense	251	30	32	309
5	181	181mm	44	8,8	Dense	230	26	27	271
5	215	215mm	34	6,8	Dense	277	36	38	359
5	235	235mm	20	4,0	Very Dense	400	70	75	640
5	249	249mm	14	2,8	Very Dense	>400	111	>110	944
5	265	265mm	16	3,2	Very Dense	>400	94	100	816
5	287	287mm	22	4,4	Very Dense	381	62	66	577
5	304	304mm	17	3,4	Very Dense	>400	87	92	764
5	315	315mm	11	2,2	Very Dense	>400	151	>110	1228
5	332	332mm	17	3,4	Very Dense	>400	87	92	764
5	345	345mm	13	2,6	Very Dense	>400	122	>110	1023
5	360	360mm	15	3,0	Very Dense	>400	102	108	876
5	374	374mm	14	2,8	Very Dense	>400	111	>110	944
5	388	388mm	14	2,8	Very Dense	>400	111	>110	944
5	401	401mm	13	2,6	Very Dense	>400	122	>110	1023
5	409	409mm	8	1,6	Very Dense	>400	206	>110	1737
5	415	415mm	6	1,2	Very Dense	>400	263	>110	2377
5	430	430mm	15	3,0	Very Dense	>400	102	108	876
5	442	442mm	12	2,4	Very Dense	>400	135	>110	1117
5	466	466mm	24	4,8	Very Dense	357	56	59	525
5	487	487mm	21	4,2	Very Dense	394	66	70	607
5	492	492mm	5	1,0	Very Dense	>400	300	>110	2900
5	517	517mm	25	5,0	Very Dense	347	53	56	502
5	532	532mm	15	3,0	Very Dense	>400	102	108	876
5	549	549mm	17	3,4	Very Dense	>400	87	92	764
5	564	564mm	15	3,0	Very Dense	>400	102	108	876
5	581	581mm	17	3,4	Very Dense	>400	87	92	764
5	585	585mm	4	0,8	Very Dense	>400	342	>110	3699
5	587	587mm	2	0,4	Very Dense	>400	442	>110	7873
5	592	592mm	5	1,0	Very Dense	>400	300	>110	2900
5	604	604	12	2,4	Very Dense	>400	135	>110	1117
5	609	609	5	1,0	Very Dense	>400	300	>110	2900
5	611	611	2	0,4	Very Dense	>400	442	>110	7873
5	612	612	1	0,2	Very Dense	>400	500	>110	16760
5	612	612	0	0,0	Very Dense	>400	563	>110	#DIV/0!
5									
5									
5									

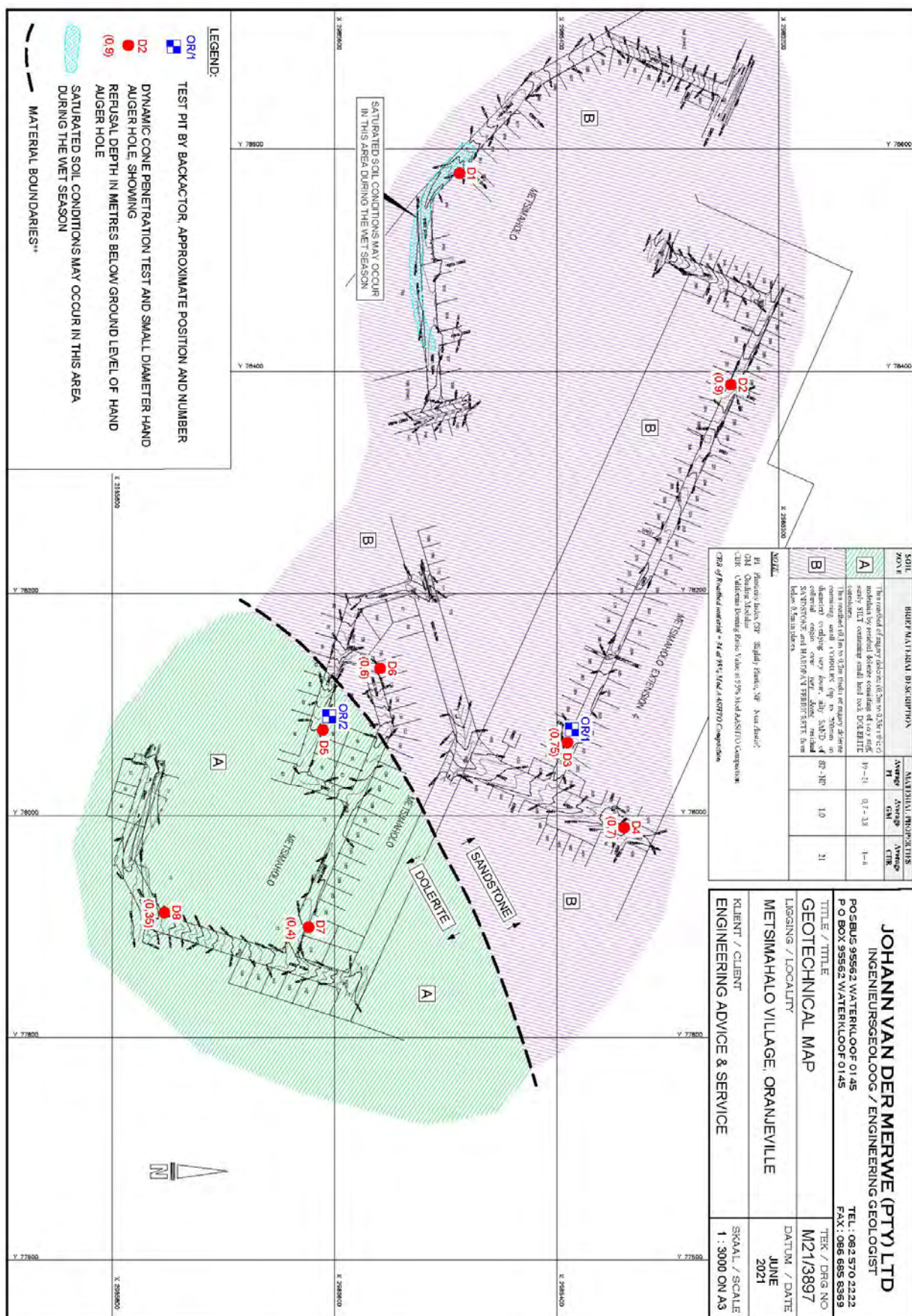


DCP DATA CONTINUED									
PROJECT: ORANJEVILLE ROADS					DATE TESTED: 17/05/2021				
CLIENT: ENGINEERING ADVICE					OPERATOR:				
TEST POSITION: D7					STARTING DEPTH: At surface				
MATERIAL TYPE: Residual Dolerite					INSTRUMENT USED:				
CONSTRUCTION TYPE:					NOTE:				
Number of Blows	Depth (mm)	Corrective Depth (mm)	Penetration Tempo	Structure Nr (dn) mm/blow	Consistency	Estimate Bearing Ratio (kPa)	In Situ CBR 410x (dn) ^{-1.27}	In Situ CBR (TMH 6)	In Situ UCS 2900x (dn) ^{-1.09}
S	20	20mm	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
S	48	48mm	28	5,6	Dense	319	46	48	443
S	64	64mm	16	3,2	Very Dense	>400	94	100	816
S	89	89mm	25	5,0	Very Dense	347	53	56	502
S	110	110mm	21	4,2	Very Dense	394	66	70	607
S	132	132mm	22	4,4	Very Dense	381	62	66	577
S	147	147mm	15	3,0	Very Dense	>400	102	108	876
S	170	170mm	23	4,6	Very Dense	369	59	62	550
S	194	194mm	24	4,8	Very Dense	357	56	59	525
S	200	200mm	6	1,2	Very Dense	>400	263	>110	2377
S	219	219mm	19	3,8	Very Dense	>400	75	80	677
S	230	230mm	11	2,2	Very Dense	>400	151	>110	1228
S	245	245mm	15	3,0	Very Dense	>400	102	108	876
S	256	256mm	11	2,2	Very Dense	>400	151	>110	1228
S	271	271mm	15	3,0	Very Dense	>400	102	108	876
S	280	280mm	9	1,8	Very Dense	>400	185	>110	1528
S	295	295mm	15	3,0	Very Dense	>400	102	108	876
S	320	320mm	25	5,0	Very Dense	347	53	56	502
S	335	335mm	15	3,0	Very Dense	>400	102	108	876
S	350	350mm	15	3,0	Very Dense	>400	102	108	876
S	372	372mm	22	4,4	Very Dense	381	62	66	577
S	400	400mm	28	5,6	Dense	319	46	48	443
S	425	425mm	25	5,0	Very Dense	347	53	56	502
S	460	460mm	35	7,0	Dense	271	35	36	348
S	488	488mm	28	5,6	Dense	319	46	48	443
S	542	542mm	54	10,8	Dense	198	20	21	217
S	575	575mm	33	6,6	Dense	283	37	39	371
S	595	595mm	20	4,0	Very Dense	400	70	75	640
S	610	610mm	15	3,0	Very Dense	>400	102	108	876
S	628	628mm	18	3,6	Very Dense	>400	81	86	718
S	640	640mm	12	2,4	Very Dense	>400	135	>110	1117
S	655	655mm	15	3,0	Very Dense	>400	102	108	876
S	666	666mm	11	2,2	Very Dense	>400	151	>110	1228
S	679	679	13	2,6	Very Dense	>400	122	>110	1023
S	692	692	13	2,6	Very Dense	>400	122	>110	1023
S	732	732	40	8,0	Dense	246	29	31	301
S	756	756	24	4,8	Very Dense	357	56	59	525
S	771	771	15	3,0	Very Dense	>400	102	108	876
S	780	780	9	1,8	Very Dense	>400	185	>110	1528
S	781	781	1	0,2	Very Dense	>400	500	>110	16760
S	781	781	0	0,0	Very Dense	>400	563	>110	#DIV/0!



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PART C5 ANNEXURES

TENDER DRAWINGS

The work shall be carried out in accordance with the following drawings which form part of these contract documents:

DRAWING NUMBER	DRAWING DESCRIPTION
1917-T-001	LOCALITY PLAN
1917-T-002	EXISTING SERVICES LAYOUT
1917-T-301	PROPOSED PLAN AND LONGSECTION - BOTSABELONG STREET (SHEET 1 OF 2)
1917-T-302	PROPOSED PLAN AND LONGSECTION - BOTSABELONG STREET (SHEET 2 OF 2)
1917-T-303	PROPOSED PLAN AND LONGSECTION - KHOPOLONG STREET (SHEET 1 OF 2)
1917-T-304	PROPOSED PLAN AND LONGSECTION - KHOPOLONG STREET (SHEET 2 OF 2)
1917-T-305	PROPOSED PLAN AND LONGSECTION - BOITSHEPONG STREET (SHEET 1 OF 1)
1917-T-306	PROPOSED PLAN AND LONGSECTION - ROAD 1 (SHEET 1 OF 3)
1917-T-307	PROPOSED PLAN AND LONGSECTION - ROAD 1 (SHEET 2 OF 3)
1917-T-308	PROPOSED PLAN AND LONGSECTION - ROAD 1 (SHEET 3 OF 3)
1917-T-309	PROPOSED PLAN AND LONGSECTION - THALPI STREET (SHEET 1 OF 1)
1917-T-310	PROPOSED PLAN AND LONGSECTION - ROAD 3 (SHEET 1 OF 3)
1917-T-311	PROPOSED PLAN AND LONGSECTION - ROAD 3 (SHEET 2 OF 3)
1917-T-312	PROPOSED PLAN AND LONGSECTION - ROAD 3 (SHEET 3 OF 3)
1917-T-313	PROPOSED PLAN AND LONGSECTION - ROAD 4 (SHEET 1 OF 1)
1917-T-314	INTERSECTION LAYOUT (A, B, C, D) - SHEET 1 OF 5
1917-T-315	INTERSECTION LAYOUT (E) - SHEET 2 OF 5
1917-T-316	INTERSECTION LAYOUT (F, G, H, I) - SHEET 3 OF 5
1917-T-317	INTERSECTION LAYOUT (J, K, L, M) - SHEET 4 OF 5
1917-T-318	INTERSECTION LAYOUT (N, O, P, Q)- SHEET 5 OF 5
1917-T-319	STANDARD DETAILS
1917-T-320	ROAD SIGNS AND ROAD MARKINGS