



METSIMAHOLO LOCAL MUNICIPALITY

**UPGRADING OF ORANJEVILLE WATER TREATMENT
PLANT (WORK PACKAGE 1)**

BID NO.: MLM 02/2023/24

**CIDB GRADING: 7 CE/ ME OR HIGHER
(VOLUME 3)**

ISSUED BY:

Metsimaholo Local Municipality
Municipal Building
10 Fichardt Street
Sasolburg
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Name of Company	:
Contact Name	:
Contact No	:
Email Address	:
CSD Supplier Number	:
CIDB: CRS Number	:
Tender Amount (VAT incl.):		R

TENDER NUMBER: MLM 02/2023/24

UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)

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 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 4: The civil, mechanical, and electrical drawings are part of Volume 3

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 3 is issued at tender stage as per tender advertisement. The pricing data is available on request in Excel format.**
At contract stage Volume 3 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
5. **SUBMISSION OF TENDER – Refer to clause F2 in the Tender Data**
Information provided by a Tenderer over and above the above elements of Volume 3 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.
6. **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 02/2023/24

**UPGRADING OF ORANJEVILLE WATER
TREATMENT PLANT (WORK PACKAGE 1)**

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METSIMAHOLO LOCAL MUNICIPALITY

BID NO: MLM 02/2023/24

**UPGRADING OF ORANJEVILLE WATER TREATMENT
PLANT (WORK PACKAGE 1)**

PART T1: TENDERING PROCEDURES

T.1.1 TENDER NOTICE AND INVITATION TO TENDER



TENDER NOTICE

BID NO: MLM 02/2023/24

METSIMAHOLO LOCAL MUNICIPALITY invites tenders for the **UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)**

Tenderers should have a CIDB Contractor grading designation of **7CE/ME** or higher.

Bid documents will be available during working hours upon payment of R1000.00 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.

Compulsory clarification meeting will be held on 18 October 2023 at 12H00 finance building 2nd floor building municipal foyer

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 **13 November 2023, 11H00**. Bid documents, clearly marked BID MLM 02/2023/24; UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1) 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 N.imba
Tel No. +27 10 023 4260
E-mail: njabuloz@w-ce.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 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 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) arithmetical 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 (<i>excluding all Provisional and Prime Cost Sums and the associated VAT</i>). P is the comparative offer of the tender offer under consideration (<i>excluding all Provisional and Prime Cost Sums and the associated VAT</i>).			

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	<p>The Project Document issued by the Employer consists of the following:</p> <p>THE TENDER</p> <p>Part T1: Tendering procedures:</p> <p style="padding-left: 40px;">T1.1 Tender notice and invitation to tender</p> <p style="padding-left: 40px;">T1.2 Tender Data</p> <p>Part T2: Returnable documents</p> <p style="padding-left: 40px;">T2.1 Returnable Schedules required for Tender Evaluation</p> <p style="padding-left: 40px;">T2.2 Other Documents required for Tender Evaluation</p> <p style="padding-left: 40px;">T2.3 Returnable Schedules that will be incorporated into the Contract</p> <p>THE CONTRACT</p> <p>Part C1: Agreements and contract data</p> <p style="padding-left: 40px;">C1.1 Form of Offer and Acceptance</p> <p style="padding-left: 40px;">C1.2 Agreement in terms of Occupation Health and Safety Act</p> <p style="padding-left: 40px;">C1.3 Form of Guarantee</p> <p style="padding-left: 40px;">C.1.4 Contract Data</p> <p>Part C2: Pricing data</p> <p style="padding-left: 40px;">C2.1 Pricing instructions</p> <p style="padding-left: 40px;">C2.2 Bills of quantities</p> <p>Part C3: Scope of work</p> <p>Part C4: Site information</p> <p style="padding-left: 40px;">Drawings</p>

Tender data contd.

Sub-clause	Data
F.1.3	The Tender Document is available upon payment of R1000.00 or can be downloaded free of charge from the e tender website.
F.1.4	<p>Name: Watson Consulting Engineers (Pty) Ltd</p> <p>Address: 113 River road, Centurion, 0157</p> <p>Contact person: N. Zimba</p> <p>Tel: +27 10 023 4260</p> <p>Cell: +27 73 460 7977</p> <p>E-mail: njabuloz@w-ce.co.za</p>
	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 7CE 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/7ME class of construction work, are eligible to have their tenders evaluated.
	<p>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 7CE/7ME 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/7ME class of construction work, are eligible to have their tenders evaluated.</p> <ol style="list-style-type: none"> 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/7ME 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	<p>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:</p> <ol style="list-style-type: none"> 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 7CE/7ME class of construction work; and <ul style="list-style-type: none"> • 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.
F.2.1	<p>Eligibility</p> <p>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:</p> <ol style="list-style-type: none"> 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 7CE/7ME or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a 7CE/7ME class of construction work, are eligible to have their tenders evaluated. <p>Joint ventures are eligible to submit tenders provided that:</p> <ul style="list-style-type: none"> - 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/7ME 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	<p>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:</p> <ol style="list-style-type: none"> 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 7CE/7ME class of construction work; and <ul style="list-style-type: none"> • 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. <p>c) Compulsory clarification meeting will be held on 18 October 2023 at 12h00 finance building 2nd floor building municipal foyer</p>
F.2.10	<p>a) The Valued Added Tax (VAT) rate shall be 15% or as otherwise provided for by legislation.</p> <p>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.</p> <p>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.</p>
F.2.11	<p>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.</p>
F.2.12	<p>No alternative tender offers will be considered</p>
F.2.13.1	<p>The Tenderer may not make an offer for only part of the services as defined in the Scope of Work.</p>

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 13 November 2023 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 <table><tr><th>NO</th><th>RETURNABLES</th><th>NOTES</th></tr><tr><td>1</td><td>Form of Offer</td><td><ul style="list-style-type: none">Fully completed in handwriting 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><ul style="list-style-type: none">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><ul style="list-style-type: none">The company registration documents must indicate the company and Director's details.In a case where the Director has changed names, proof of name change must be attached.</td></tr><tr><td>4</td><td>Fully completed and signed MBD forms</td><td><ul style="list-style-type: none">Fully Completed and signed in handwriting and in black ink pen.</td></tr><tr><td>5</td><td>Completed BOQ in black ink pen</td><td><ul style="list-style-type: none">Items not priced will be considered rated at R0.00 and cannot be re-priced after appointment</td></tr><tr><td>6</td><td>Fully Completed and signed MBD 5 form for Bidders quoted over R10 Million (Submitted Annual Financial Statements must clearly stating that they are Audited, Reviewed AFS won't be expected)</td><td><ul style="list-style-type: none">Submit Audited Financial Statements if required by law submit audited financial statements for the past 3 years or since the date of establishment if established within the past 3 years. Audited Financial Statements signed by the CA/RA/PR Accountant & Director of the company (MBD 5 form)</td></tr><tr><td>7</td><td>Joint Venture Agreement (Must indicate the lead partner, if the bidders grading is not the same the</td><td><ul style="list-style-type: none">If applicable submit a complete and signed JV agreement.JV agreement stating who the lead partner is with the shared percentages.</td></tr></table>			NO	RETURNABLES	NOTES	1	Form of Offer	<ul style="list-style-type: none">Fully completed in handwriting and signed in black ink pen.	2	A copy of a CSD summary report OR CSD number.	<ul style="list-style-type: none">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.	<ul style="list-style-type: none">The company registration documents must indicate the company and Director's details.In a case where the Director has changed names, proof of name change must be attached.	4	Fully completed and signed MBD forms	<ul style="list-style-type: none">Fully Completed and signed in handwriting and in black ink pen.	5	Completed BOQ in black ink pen	<ul style="list-style-type: none">Items not priced will be considered rated at R0.00 and cannot be re-priced after appointment	6	Fully Completed and signed MBD 5 form for Bidders quoted over R10 Million (Submitted Annual Financial Statements must clearly stating that they are Audited, Reviewed AFS won't be expected)	<ul style="list-style-type: none">Submit Audited Financial Statements if required by law submit audited financial statements for the past 3 years or since the date of establishment if established within the past 3 years. Audited Financial Statements signed by the CA/RA/PR Accountant & Director of the company (MBD 5 form)	7	Joint Venture Agreement (Must indicate the lead partner, if the bidders grading is not the same the	<ul style="list-style-type: none">If applicable submit a complete and signed JV agreement.JV agreement stating who the lead partner is with the shared percentages.
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	lead partner must have the higher grading)	<ul style="list-style-type: none"> Note: JV agreement must be as per CIDB regulation of 2001 regulation 25 (5)(a),(b) and (6)
NB! The following documents will not be accepted: for number 8, 9 and 10		
<ul style="list-style-type: none"> 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. 		
8	Latest Municipal rates and taxes account for the COMPANY AND DIRECTORS/TRUSTEES/ MEMBERS/ SHAREHOLDERS.	<ul style="list-style-type: none"> Submit strictly Sep 2023 or Oct 2023 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.
9	In the event of a tenant renting a lease agreement MUST be attached for the COMPANY AND DIRECTORS/TRUSTEES/ MEMBERS/ SHAREHOLDERS.	The lease agreement must include the following: <ul style="list-style-type: none"> 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. 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. <ul style="list-style-type: none"> In a case of lease agreement being in a family member's name, the lease agreement will be accepted if the address on the lease matches the address on the company registration documents, AND ONLY if the lease agreement is valid.
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.		

	10	Municipal rates and taxes for bidders who are from the rural areas for the COMPANY AND DIRECTORS/TRUSTEES/ MEMBERS/SHAREHOLDERS	<ul style="list-style-type: none"> 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.
	11	CIDB Grading	<ul style="list-style-type: none"> Copy of Company CIDB Grading designation 7 CE/ ME or Higher
<p><u>Failure to comply with the above mentioned terms and conditions will deem your bid to be disqualified.</u></p> <p><u>Bidders must keep a copy of a completed excel spreadsheet BOQ which may be required during the evaluation processes</u></p>			
<p>Functionality Returnable</p> <p>1 Project experience and performance 2 Construction Plant 3 Key company personnel 4 Financial Stability</p>			
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	<p>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.</p> <p>The 80/20 evaluation criteria will be used where Price will be allocated 80 points and Preference will be scored out of 20 points.</p>		
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:		

	<p>$Nfo = W1 \times A$</p> <p>Where: Nfo = number of tender evaluation points awarded for the financial offer;</p> <p>W1 = 80 points for rand value less than R50 000 000;</p>														
F.3.11.3	<p>(a) Functionality will include the following:</p> <table border="1"> <thead> <tr> <th>Functionality</th><th>90 Points</th></tr> </thead> <tbody> <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>15</td></tr> <tr> <td>D. Financial stability</td><td>10</td></tr> <tr> <td>Total</td><td>90</td></tr> <tr> <td>Minimum Threshold</td><td>60</td></tr> </tbody> </table>	Functionality	90 Points	A. Project experience and performance	40	B. Construction plant	25	C. Company key personnel	15	D. Financial stability	10	Total	90	Minimum Threshold	60
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B. Construction plant	25														
C. Company key personnel	15														
D. Financial stability	10														
Total	90														
Minimum Threshold	60														

Criteria	Evaluation Indicators	Points Allocated	Weight
A. PROJECT EXPERIENCE AND PERFORMANCE			MAX. 40 POINTS
Company experience with regards to the construction of water/ sewer package plants and/or water/sewer treatment plants	<p>Required submission to claim points:</p> <p>1. A minimum of one project must be submitted from a State/Government/ SOE. Non-submission of a state project will render any submission for experience as nonresponsive and Zero (00) point will be allocated for Company experience.</p> <p>2. Project signed Appointment letter (letter must be within the past 10 years and the value of the project must be above R15 000 000.00) & corresponding reference letter or Completion certificate/ letter as a main contractor.</p>	40 points per project	40
B. CONSTRUCTION PLANT			MAX. 25 POINTS
Attach list confirming workshop equipped with the following tools and equipment,	Minimum 6.5kVA standby generator power	5 points if owned/ rented	Max 05 Points
Ownership of equipment & tools. For equipment to be hired attach rental confirmation from a CPHA member registered company (Constructions Plant Hire Association).	Lifting Equipment with capacity of 10ton or higher	5 points if owned/ rented	Max 05 Points
Vehicle Registration Certificates in a company or directors name/ Signed letter from Rental Company on rental company letterhead	TLB	5 points if owned/ rented	Max 05 points
	10ton Truck to higher	5 points if owned/ rented	Max 05 points
	Light Delivery Vehicle	5 points if owned/ rented	Max 05 points

C. COMPANY KEY PERSONNEL	BIDDERS MUST SUBMIT COPIES OF CVs & QUALIFICATIONS	MAX. 15 POINTS
Contracts Manager	Personnel 1- Attach a Degree qualification or higher in the Built environment/ Project management and have project construction experience. NB: Submit CV and Qualifications.	10 years or more 5 – 10 years 0 – 5 years Max 5 points 2 points 0 points
Construction Manager	Personnel 2- Attach a National Diploma qualification or higher in the Built environment/ Project management and have project construction experience NB: Submit CV and Copies of Qualifications.	10 years or more 5 – 10 years 0 – 5 years Max 4 points 2 points 0 points
Mechanical Fitter	Personnel 3- Qualifications in Mechanical with minimum 8 years' experience NB: Submit CV and Copies of Qualifications.	8 Years or more 4 – <8 years 0 – <4 years Max 3 points 1 point 0 points
Electrician	Personnel 4- Minimum 8 years' experience in MV and LV, with WIREMAN'S LICENSE NB: Submit CV and Copies of Qualifications.	8 Years or more 4 – <8 years 0 – <4 years Max 3 points 1 point 0 points
D. FINANCIAL STABILITY		MAX 10 POINTS
Bank Rating Letter	Submit bank rating letter not older than 3 months of rating of A, B or C with a dated stamp/ date of issue	10 Points Max 10 POINTS
MINIMUM SCORE		60
TOTAL		90

Bidders must complete the following table; points will be allocated for the below mentioned key personnel.

COMPANY KEY PERSONNEL	NAME AND SURNAME
CONTRACTS MANAGER	
CONSTRUCTION MANAGER	
MECHANICAL FITTER	
ELECTRICIAN	

In order to qualify for the second round of evaluation the tenders must score a minimum of 60 functionality points.

The recommended bidders company personnel and completed projects may be verified before appointments can be finalised. Misrepresentation of information will lead to the disqualification of the bidder.

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

Sub-clause	Data
F.3.13	Acceptance of Tender Offer
F.3.13.1	<p>Tender offers will only be accepted if:</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 02/2023/24

**UPGRADING OF ORANJEVILLE WATER
TREATMENT PLANT (WORK PACKAGE 1)**

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.

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 02/2023/24	CLOSING DATE:	13 November 2023	CLOSING TIME:	11H00
DESCRIPTION:	UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT (MBD7).					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
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	<input type="checkbox"/> Yes		B-BBEE STATUS LEVEL	<input type="checkbox"/> Yes	

[TICK APPLICABLE BOX]	<input type="checkbox"/> No	SWORN AFFIDAVIT	<input type="checkbox"/> 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?	<input type="checkbox"/> Yes No <input type="checkbox"/> [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> 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	sibusiso.bila@metsimaholo.gov.za
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)? <input type="checkbox"/> YES <input type="checkbox"/> NO 3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO 3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO 3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO 3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <input type="checkbox"/> YES <input type="checkbox"/> 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:

MBD 4

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 contract or not they are bidding for this..... 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

MBD 5

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

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

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

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

.....

.....

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

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

2.2 If yes, provide particulars.

.....

.....

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

MBD 6.1**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022**

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

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

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- 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 To be completed by the organ of state

- a) The applicable preference point system for this tender is the **80/20** preference point system.
- b) **80/20 preference point system** will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals (Locality)

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS (Locality)	20
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that

preference points for specific goals are not claimed.

- 1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

- (a) **“tender”** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) **“price”** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) **“tender for income-generating contracts”** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) **“the Act”** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

$$\begin{array}{ccc}
 \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\
 \\
 \mathbf{P_s = 80 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)} & \mathbf{or} & \mathbf{P_s = 90 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)}
 \end{array}$$

Where

- P_s = Points scored for price of tender under consideration
- P_t = Price of tender under consideration
- P_{min} = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

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

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

80/20 or 90/10

Where

P_s = Points scored for price of tender under consideration
 P_t = Price of tender under consideration
 P_{max} = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:
- 4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—
- (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or
 - (b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,
- then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

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

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

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Locality	N/A	80/20	N/A	80/20

Points Allocation

Location	Points Allocation
Bidder that is within the boundaries of the Metsimaholo Local Municipality	20
Bidder that is within the boundaries of the Fezile Dabi District Municipality	15
Bidder that is within the boundaries of the Free State Province	10
Bidder that is Outside the boundaries of the Free State Province	05

Proof of locality

The following must be submitted for proof of locality:

- Municipal account in the name of the bidder not older than 90 days,
- Lease agreement where the bidder is the lessee, or
- An official letter from the bank confirming the registered business address of the bidder

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number:

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I 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 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
- iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

- (a) disqualify the person from the tendering 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 tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted 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, if deemed necessary.

.....
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME:

DATE:

ADDRESS:

.....

.....

.....

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

Item	Question	Yes	No
4.1	<p>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?</p> <p>(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).</p> <p>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.</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.1.1	<p>If so, furnish particulars:</p>		

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 <input type="checkbox"/>	No <input type="checkbox"/>
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 <input type="checkbox"/>	No <input type="checkbox"/>
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 <input type="checkbox"/>	No <input type="checkbox"/>
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 <input type="checkbox"/>	No <input type="checkbox"/>

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:

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> 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) |
| <input type="checkbox"/> a member of any provincial legislature | |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> an official of any municipality or municipal entity | <input type="checkbox"/> 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:

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> 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) |
| <input type="checkbox"/> a member of any provincial legislature | |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> an official of any municipality or municipal entity | <input type="checkbox"/> 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 _____



METSIMAHOLO LOCAL MUNICIPALITY

BID NO MLM 02/2023/24

UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)

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 02/2023/24: UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)

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 –3Ed Edition 2015, Third print", issued by the South African Institution of Civil Engineering. (Short title: "General Conditions of Contract 2015").

It is agreed that the only variations from the General Conditions of Contract 2015 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 2015 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 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

2. 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.

"Materials Provided by Client (MPC)" shall mean the materials provided to the Contractor by the Client as set out later in the technical specifications, preamble to the BoQ and the BoQ.

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

DATA PROVIDED BY THE EMPLOYER

REFERENCE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
1.	GENERAL
Clause 1.1.1.13:	The Defects Liability Period is 12 months.
Clause 1.1.1.14:	The time for achieving Practical Completion is 6 months from the Commencement Date, including non-working days and special non-working days.
Clause 1.1.1.26:	
Clause 1.1.1.15:	Pricing Strategy: The Contract is to be a Re-measurement Contract.
Clause 1.2.1.2:	Name of Employer: Metsimaholo Local Municipality
Clause 1.1.1.16:	Address of Employer:
Clause 1.2.1.2:	Physical: Postal:
	10 Fichardt Street Metsimaholo Local Municipality Sasolburg Sasolburg Freestate Freestate 4800 4800
	E-Mail: sibusiso.bila@metsimaholo.gov.za
	Telephone No: +27 16 973 8487
	Name of Employer's Agent: Watson Consulting Engineers (Pty) Ltd represented by Mr Njabulo Zimba
	Address of Employer's Agent:
	Physical: Postal:
	Watson House Watson House 113 River Road 113 River Road 0167 0157
	E-mail: njabuloz@w-ce.co.za
	Telephone No: 010 023 4260
3.	EMPLOYER'S AGENT
Clause 3.2.3:	The Employer's Agent is required to obtain the specific approval of the Employer for any expenditure in excess of the Contract Price.
4.	CONTRACTOR'S GENERAL OBLIGATIONS
Clauses 4.1.1 and SCC 4.1.1:	The contract participation goal for local labour content is 0%. The penalty for failing to achieve the monetary value of the above target set by the Employer for local labour content in terms of Part F: Expanded Public Works Programme of section C3.3 Particular Specifications in Part C3: Scope of Work,

REFERENCE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
	<p>is 5% of the monetary value by which the achieved monetary value falls short of the target monetary value.</p> <p>The Contractor and his subcontractors shall be registered with the Bargaining Council for the Civil Engineering Industry and comply with the wage rates and conditions of labour agreed by the Bargaining Council for the Civil Engineering Industry, except where a specific industry publishes its own wage rates and conditions of labour.</p> <p>The wage rates and conditions of labour employed under the Expanded Public Works Programme, shall comply with the Ministerial Determination 4, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R347 of 4 May 2012</p> <p>The penalty for failing to achieve the monetary value of the target set by the Employer for contract participation by Targeted Enterprises in terms of Part G: Small Contractor Development of section C3.3 Particular Specifications in Part C3: Scope of Works, is 5% of the monetary value by which the achieved monetary value falls short of the target monetary value.</p>
<p>5.</p> <p>Clauses 5.3.1 and 5.3.2:</p> <p>Clauses SCC 5.3.1 and SCC 5.3.2:</p>	<p>TIME AND RELATED MATTERS</p> <p>Where the Employer is not required to apply for a permit to do construction work in terms of Construction Regulation 3(1), the following documentation is to be submitted within 14 days from the Commencement Date:</p> <p>The documents required before commencing to carry out the Works:</p> <ul style="list-style-type: none"> • Health and Safety Plan (refer to Clause 4.3) • Initial Programme (refer to Clause 5.6) • Security (refer to Clause 6.2) • Insurance (refer to Clause 8.6) • Form C1.4 'Agreement in terms of Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993' to be signed by the Contractor and the Employer (refer to Clause 4.3 of the GCC 2015 and to paragraph E9. CONTRACTOR'S RESPONSIBILITIES in Part E of C3.3 Particular Specifications) <p>Where the Employer is required to apply for a permit to do construction work in terms of Construction Regulation 3(1), the following documentation is to be submitted within <u>14 days</u> from the date that the Agreement, made in terms of the Form of Offer and Acceptance, comes into effect:</p> <p>The documents required before commencing to carry out the Works:</p> <ul style="list-style-type: none"> • Health and Safety Plan (refer to Clause 4.3) • Initial Programme (refer to Clause 5.6) • Security (refer to Clause 6.2) • Insurance (refer to Clause 8.6) • Form C1.4 'Agreement in terms of Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993' to be signed by the Contractor and the Employer (refer to Clause 4.3 of the GCC 2015 and to paragraph E9. CONTRACTOR'S RESPONSIBILITIES in Part E of C3.3 Particular Specifications) <p>And:</p>

REFERENCE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
	The documents required by the Employer to apply for a permit to do construction work in terms of Regulations 3(1) and (2) of the Construction Regulations 2014:
	<ul style="list-style-type: none"> Temporary works designer's appointment duties in terms of Regulation 6(2) as have been agreed upon plus proof of registration with ECSA [CR 3(5)(b)(iii) read with CR 5(1)(e) and CR 6(2)]; Evidence that the contractor has made adequate provision for the cost of Health and Safety, i.e., Bill of quantities [CR 3(5)(b)(iii) read with CR 5(1)(g)]; Evidence that the Principal contractor has the necessary competencies to carry out construction work safely, viz., schedule of activities, relevant appointments and proofs of competency [CR 5(1)(h)]; Valid Letter(s) of Good Standing for the appointed Principal Contractor(s) [CR 3(5)(b)(ii) read with CR 5(1)(j)].
Clause 5.8.1:	<p>The non-working days are Sundays.</p> <p>The special non-working days are the construction industry year end break, all foreseeable statutory election days as declared by National Government, and the following statutory public holidays as declared by National Government: New Year's Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers' Day, Youth Day, National Women's Day, Heritage Day, Day of Reconciliation, Christmas Day and the Day of Goodwill.</p> <p>The construction industry year end break commences on the first working day after 15 December and ends on the first working day after 5 January of the following year.</p>
Clause 5.13.1:	The penalty for failing to complete the Works is 0,05% of the Contract Sum per day, up to a maximum limit of twenty-five thousand rand per day (R5000,00 per day).
Clause 5.14.1:	<p>The requirements for achieving Practical Completion are as follows;</p> <ol style="list-style-type: none"> The works shall be completed to a state where the primary items can be used i.e., the package plant can be operational and connected to the existing network, pumpstation and pipeline can be commissioned Chlorine tank and its accessories are connected to the existing network Client can occupy and make use of all works
SCC 5.14.4	<p>The Contractor shall submit the following:</p> <p>evidence that the local labour has been paid, and that the Targeted Enterprise subcontractors have received all amounts due in terms of their respective subcontract agreements</p>
Clause 5.16.3:	The latent defects period is 10 years.
6.	PAYMENT AND RELATED MATTERS
Clauses 6.2.1 and SCC 6.2.1:	The security to be provided by the Contractor shall be: Fixed Performance Guarantee of 8% of the first One Million Rand plus 3.5% of the balance of the accepted Contract Sum.

REFERENCE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
Clause 6.5.1.2.3:	The percentage allowance to cover overhead charges is 10%.
Clauses 6.8.2 and SCC 6.8.2:	Not applicable
Clause 6.8.3:	Price adjustments for variations in the costs of special materials are allowed.
Clause 6.10.1.5:	The percentage advance on materials not yet built into the Permanent Works is 80%.
Clause 6.10.3:	<p>The percentage retention on the amounts due to the Contractor is 10%.</p> <p>The limit of retention money is 5% of the tender offer excluding Contract Price Adjustment, contingencies and VAT.</p> <p>A retention guarantee in lieu of a cash retention is permitted.</p> <p>Payment to sub-contractor for works done must be made within 30 days of the submission of the invoice from the sub-contractor to the main contractor.</p>
8.	RISKS AND RELATED MATTERS
Clause 8.6.1.1.2:	The value of Plant and materials supplied by the Employer to be included in the insurance sum is NIL.
Clause 8.6.1.1.3:	The amount to cover professional fees for repairing or reinstatement of damage to the Works to be included in the insurance sum is NIL.
Clause 8.6.1.2:	Special Risks Insurance issued by SASRIA is required.
Clause 8.6.1.3:	The limit of indemnity for liability insurance is R10 000 000,00 (ten million Rand only) for any single liability claim. Liability insurance shall include spread of fire risk.
10.	CLAIMS AND DISPUTES
Clause 10.5.3:	The number of Adjudication Board Members to be appointed is one.
Clause 10.7.1:	<p>Unresolved disputes shall be referred to arbitration.</p> <p>Builders lien is not applicable in this contract</p>

.....
SIGNATURE

C1.2.3 DATA PROVIDED BY THE TENDERER

The following contract specific data are applicable to this contract.

REFERENCE	CONTRACT SPECIFIC DATA PROVIDED BY THE CONTRACTOR
1.	GENERAL
Clause 1.1.1.9:	Name of the Contractor:
Clause 1.2.1.2:	Address of the Contractor:
	<div> <div> <u>Physical:</u> </div> <div> <u>Postal:</u> </div> </div>

.....
SIGNATURE

C1.3 FORM OF GUARANTEE

BID NO MLM 02/2023/24

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

.....
(hereinafter called "the Contactor") on the day of20.....,
for **UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)**.

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
2015, 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 15.
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 02/2023/24

UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)

PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS – CIVIL AND STRUCTURAL, MECHANICAL AND ELECTRICAL 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.
14. The General Conditions of Contract, the Contract Data, the Scope of Works (including the Standardized Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.
15. Bill of Quantities should be filled out in black ink and no correctional fluid will be used. Tenders not adhering to these requirements will not be considered.

C2.3

BILL OF QUANTITIES

SECTION 1200 PART A: PRELIMINARY AND GENERAL						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1,1	PSA 8.3	SCHEDULED FIXED-CHARGE & VALUE-RELATED ITEMS				
1.1.1	PSA 8.3.1	Contractual Requirements	Sum	1		
1.1.2	PSA 8.3.2	Establishment of facilities on Site				
1.1.2.1	8.3.2.1	Facilities for Engineer				
		(a) Furnished offices (1 No.)	Sum	1		
		(b) Telephone	Sum	1		
1.1.2.2	8.3.2.2	Facilities for Contractor				
		(a) Offices & storage sheds	Sum	1		
		(e) Ablution & latrine facilities	Sum	1		
		(g) Water supplies, electric power & communications	Sum	1		
		(h) Dealing with water	Sum	1		
1.1.3	8.3.4	Removal of site establishment	Sum	1		
1,2	8,4	SCHEDULED TIME-RELATED ITEMS				
1.2.1	8.4.1	Contractual requirements	Sum	1		
1.2.2	8.4.2	Operate and maintain facilities on the site for duration of construction except where otherwise stated				
1.2.2.1	8.4.2.1	Facilities for Engineer				
		(a) Furnished offices (1 No.)	Sum	1		
		(b) Telephone	Sum	1		
		(d) Survey assistants & materials	Sum	1		
1.2.2.2	8.4.2.2	Facilities for Contractor				
		(a) Offices & storage sheds	Sum	1		
		(e) Ablution & latrine facilities	Sum	1		
		(g) Water supplies, electric power & communications	Sum	1		
		(i) Access	Sum	1		
1.2.3	8.4.3	Supervision for Duration of Contract	Sum	1		
TOTAL CARRIED FORWARD						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART A: PRELIMINARY AND GENERAL						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
TOTAL BROUGHT FORWARD						
1.2.4	8.4.4	Company & head office overhead costs	Sum	1		
1.3	PSA 8.5	SUMS STATED PROVISIONALLY BY THE ENGINEER				
1.3.1		(a) 4ML Package plant				
		1) Nominated sub-contractor for the supply, installation & commissioning of the package plant	Stated Sum	1	R 25 000 000,00	R 25 000 000,00
		2) Overheads, charges & profit on a)1) above max limit 2.5%.	%		R 25 000 000,00	
1.3.2		(b) Water Use License				
		1) Nominated service provider for the screening, investigation, application & obtaining a record of decision for the WUL	Stated Sum	1	R 300 000,00	R 300 000,00
		2) Overheads, charges & profit on b)1) above	%		R 300 000,00	
1.3.3		(c) Community Liaison Officers				
		1) Provision for CLO Salary	PC.Sum	1	R 120 000,00	R 120 000,00
		2) Provision for CLO Cellular Phone	PC.Sum	1	R 10 000,00	R 10 000,00
		3) Cost of Cellular Phone Usage for CLO	PC.Sum	1	R 24 000,00	R 24 000,00
		4) Overheads, charges & profit on c)1),2) and 3) above	%		R 154 000,00	
		(d) Portal frames & sheeting material				
		Portal frames to match existing for the				
		1) extension of the package plant building, including insulation & sheeting	Stated Sum	1	R 120 000,00	R 120 000,00
		2) Overheads, charges & profit on d)1) above	%		R 120 000,00	
		(e) Training				
		1) SETA Accredited skills training and student in-service training	Stated Sum	1	R 200 000,00	R 200 000,00
		2) Overheads, charges & profit on e)1) above	%		R 200 000,00	
1.4	PSA 8.9	Wayleave	Sum	1		
1.5	PSA 8.11	COMPLIANCE WITH OHS ACT, CONSTRUCTION REGULATIONS 2014 AND OHS SPECIFICATION	Sum	1		
1.6	PSA 8.12	Contract Nameboards	Sum	1		
1.7	PSA 8.13	Environmental Management	Sum	1		
1.8	PSA 8.16	Provision of Security Personnel	Sum	1		
1.9	PSA 8.17	Installation of 2 X WKLn 80/3 pumps, 5.5kW Motor, Electrical Works, Control Panel & All Associated Pipework	Sum	1		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART C: SITE CLEARANCE						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2,1	8,2	<u>SCHEDULED ITEMS</u>				
2.1.1	8.2.1	Clear and grub	ha	0,3		
2.1.2	8.2.3	Remove & grub all trees and tree stumps regardless of girth	ha	0,3		
2.1.3	PSC 8.2.11	Remove topsoil to spoil site furnished by Contractor	m ³	50		
2.1.4	PSC 8.2.12	Demolishing and Removal of Existing Concrete Structures a) Reinforced Concrete (0 to 200 mm thick)	m ³	50		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART D: EARTHWORKS (BULK)						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3,1	8,3	<u>SCHEDULED ITEMS</u>				
3.1.1	PSD 8.3.2	Bulk Excavation (a) Excavate in all materials and use for embankment, backfill or dispose as ordered 1) Extension to package plant house	m ³	50		
3.1.2	PSD 8.3.4	Importing of materials (a) Extra-over for importation of materials from commercial sources or from borrow pits 1) G7 Under surface bed	m ³	50		
3.1.3	PSD 8.3.8	Existing Services				
	8.3.8.1	Hand excavation for locating and exposing existing services: (a) In Roadways (b) In all other areas	m ³ m ³	50 50		Rate Only
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART DB: EARTHWORKS (PIPE TRENCHES)						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4.1	PSDB 8,3	<u>SCHEDULED ITEMS</u>				
4.1.1	PSDB 8.3.2	Excavation				
		a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material for:				
		1) 110 to 300 mm diameter				
		i) 0 to 1m depth	m ³	150		
		ii) 1 to 2m depth	m ³	2800		
		iii) 2 to 3m depth	m ³	20		
		b) Extra-over for subitem a) for excavating in:				
		1) Intermediate material	m ³	594		Rate Only
		2) Hard rock material	m ³	297		Rate Only
		3) Backfill stabilized with 5% cement where directed by the Engineer	m ³	100		Rate Only
4.1.2	8.3.3	Excavation Ancillaries				
4.1.2.1	8.3.3.1	Makeup deficiency in backfill material				
		(a) from other necessary excavations on site	m ³	100		Rate Only
		(c) By importation from commercial or off-site sources selected by Contractor	m ³	100		Rate Only
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART DM: EARTHWORKS (ROADS,SUBGRADE)

ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5,1	PSDM 8.3	<u>SCHEDULED ITEMS</u>				
5.1.1	PSDM 8.3.3	Treatment of Road Bed (a) Road-Bed Preparation and Compaction of Material to: 1) minimum of 90% MOD AASHTO density	m ³	70		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART G: CONCRETE (STRUCTURAL)						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
6,1	8,2	NEW PACKAGE PLANT BUILDING WORKS SCHEDULED FORMWORK ITEMS				
6.1.1	8.2.1	Rough (a) Extension to package plant room 1) Pad footing (including stub column) 2) Edge beam 3) Surfacebed 4) Ramp	m ² m ² m ² m ²	5 5 10 5		
6,2	8,3	SCHEDULED REINFORCEMENT ITEMS				
6.2.1	8.3.1	High Tensile Steel Bars (a) Extension to package plant building 1) Pad footings 2) Stub columns 3) Edge beams	t t t	1 0,5 1		
6.2.2	PSG 8.3.2	High tensile welded mesh (a) Ref 245	m ²	150		
6,3	8,4	SCHEDULED CONCRETE ITEMS				
6.3.1	8.4.2	Blinding layer in 15MPa concrete	m ³	9		
6.3.2	8.4.3	25/19 Mpa Concrete (a) Extension to package plant building 1) Pad footings 2) Stub columns 3) Edge beams 4) Surfacebed	m ³ m ³ m ³ m ³	1,5 1,5 5 40		
6.3.3	8.4.4	Unformed Surface Finishes (a) Power-Floated Finish 1) Extension to package plant building	m ²	150		
TOTAL CARRIED FORWARD						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART G: CONCRETE (STRUCTURAL)						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
TOTAL BROUGHT FORWARD						
6,4	8,5	JOINTS				
		(a) Extension to package plant building				
		1) Saw-cut joint (surface bed)	m	50		
		2) Isolation joint (surface bed)	m	50		
		3) Construction joint (between pad & stub column)	m ²	2,5		
6,5	8,7	GROUTING				
		(a) Under bases (non shrink)	m ³	0,1		
		(b) HD bolts (Commercial quality M20 bolts embedded 600mm)	No	8		
		PUMP HOUSE				
6,6	8,2	SCHEDULED FORMWORK ITEMS				
6.6.1	8.2.1	Rough				
		(a) Surface bed	m ²	5		
		(b) Pad footing	m ²	5		
6.6.2	8.2.2	Smooth				
		(a) Plinths	m ²	3		
		(b) Roof Slab	m ²	5		
6,7	8,3	SCHEDULED REINFORCEMENT ITEMS				
6.7.1	8.3.1	High Tensile Steel Bars				
		(a) Plinths	t	0,2		
		(b) Pad Footings	t	0,1		
6.7.2	PSG 8.3.2	High tensile welded mesh				
		(a) Ref 245	m ²	20		
6,8	8,4	SCHEDULED CONCRETE ITEMS				
6.8.1	8.4.2	Blinding layer in 15MPa concrete	m ³	1,2		
6.8.2	8.4.3	25/19 Mpa Concrete				
		(a) Pad footings	m ³	1		
		(b) Surface Bed	m ³	5		
		(c) Plinths	m ³	0,6		
		(d) Roof Slab	m ³	5		
6.8.3	8.4.4	Unformed Surface Finishes				
		(a) Power-Floated Finish	m ²	20		
TOTAL CARRIED FORWARD						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART G: CONCRETE (STRUCTURAL)						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
TOTAL BROUGHT FORWARD						
6,11	PSG 8.9	WATERPROOFING (a) 4mm Torch on Derbigum	m ²	20		
6,12	8,2	GUARD HOUSE SCHEDULED FORMWORK ITEMS				
6.12.1	8.2.1	Rough				
		(a) Strip Footing	m ²	15		
		(b) Surfacebed	m ²	5		
6,13	8,3	SCHEDULED REINFORCEMENT ITEMS				
6.13.1	8.3.1	High Tensile Steel Bars				
		(a) Strip footings	t	0,5		
6.13.2	PSG 8.3.2	High tensile welded mesh				
		(a) Ref 245	m ²	15		
6,14	8,4	SCHEDULED CONCRETE ITEMS				
6.14.1	8.4.2	Blinding layer in 15MPa concrete	m ³	0,9		
6.14.2	8.4.3	25/19 Mpa Concrete				
		(a) Strip footings	m ³	2		
		(b) Surfacebed	m ³	5		
6.14.3	8.4.4	Unformed Surface Finishes				
		(a) Power-Floated Finish	m ²	20		
TOTAL CARRIED FORWARD						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART L: MEDIUM PRESSURE PIPELINES						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
7,1	8,2	<u>SCHEDULED ITEMS</u>				
7.1.1	PSL 8.2.1	Supply, Lay and Bed Pipes Complete with Couplings				
		a) 160 mm diameter uPVC PN 16	m	650		
		b) 200 mm diameter uPVC PN 16	m	2400		
7.1.2	8.2.2	Extra-over 8.2.1 for the supplying, laying, and bedding of specials complete with couplings				
		a) 160x160 mm diameter Tee PN 16 uPVC	No	2		
		b) 160 mm diameter 22.5° Bend PN 16	No	1		
		c) 160 mm diameter 45° Bend PN 16	No	4		
		d) 160 mm diameter 90° Bend PN 16	No	4		
		e) 160 mm diameter End Cap PN 16	No	2		
		f) 160 x 80 mm Fire Hydrant Tee	No	1		
		g) 200 mm diameter 11.25° Bend PN 16	No	6		
		h) 200 mm diameter 22.5° Bend PN 16	No	4		
		i) 200 mm diameter 45° Bend PN 16	No	5		
		j) 200 mm diameter 90° Bend PN 16	No	4		
		k) Clamp Saddle 110 x 20 mm PN 16	No	1		
		l) Provisional Sum for Miscellaneous Fittings	Prov. Sum	1		
7.1.3	8.2.3	Extra-over 8.2.1 for the supplying, fixing, and Bedding Valves				
		a) 160 mm Diameter Gate Valve PN 16	No	2		
7.1.3	PSL 8.2.11	Anchor/Thrust Blocks and Pedestals				
		b) 1) Concrete	m ³	5		
		2) Formwork	m ²	5		
7.1.4	PSL 8.2.13	Valve and hydrant chambers etc.				
		a) Valve chamber	No.	2		
7.1.5	PSL 8.2.16	Connection to existing main supply pipe	No.	1		
7.1.6	PSL 8.2.17	Supply of a chlorination tank with all associated dosing fittings & pipework	No.	1		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART LB: BEDDING (PIPES)						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8,1	8,2	<u>SCHEDULED ITEMS</u>				
8.1.1	8.2.1	Provision of Bedding from Trench Excavation				
		a) Selected Granular material	m ³	1250		
		b) Selected Fill Material	m ³	1250		
8.1.2	8.2.2	Supply only of bedding by Importation				
8.1.2.1	8.2.2.1	From other necessary excavations (Provisional)				
		a) Selected Granular material	m ³	1250		
		b) Selected Fill Material	m ³	1250		
8.1.3	8.2.4	Encasing of Pipes in Concrete				
		a) 160 mm Diameter @ 20 Mpa	m ³	3		
		b) 200 mm Diameter @ 20 Mpa	m ³	50		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION 1200 PART LE: STORMWATER DRAINAGE						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9,1	8,2	<u>SCHEDULED ITEMS</u>				
9.1.4	8.2.9	Supply and Install Manhole, Catchpits, and the like				
		a) 230mm thick Brickwork				
		1) Grid Inlets	m ²	40,0		
		b) 15mm Plaster				
		1) Grid Inlet	m ²	40,0		
		c) Benching				
		1) Grid Inlet	m ²	15,0		
		e) 15/19 Mpa Concrete	m ³	2		
9.1.5	8.2.10	Accessories				
		a) Grid Inlets including frames (3.2m x 0.456m)	No	20		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION PARTICULAR SPECIFICATION PD: BUILDING WORK						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10,1	PD 10	MEASUREMENT AND PAYMENT				
		<u>A. NEW PACKAGE PLANT BUILDING</u>				
10.1.1	PD 01	Brickwork Corobrik Montana Travertine Facebrick (a) Standard or similar approved with flush pointed mortar joints	m ²	300		
10.1.2	PD 03	Floor Screeds a) 30 mm Power Floated Screed	m ²	150		
10.1.3	PD 04	Doors and Windows (a) D2 Doors	No.	2		
		<u>B. OLD PLANT BUILDING</u>				
10.1.4	PD 04	Doors and Windows (a) D2 Doors	No.	2		
10.1.5	PD 05	Awnings (a) Awnings on existing package plant building doors	No.	6		
10.1.6	PD 06	Electrical control panel (a) Repairing the electrical control panel for the package plant in the existing building	No.	1		
10.1.7	PD 07	Telemetry System (a) Supply and Installation of new telematics/scada system	No.	1		
		<u>C. GUARDHOUSE</u>				
10.1.8	PD 01	Brickwork (a) Corobrik Montana Travertine Facebrick Standard or similar approved with flush pointed	m ²	60		
10.1.9	PD 02	Plasterwork a) One coat cement plaster steel trowelled on brickwork (Min 15mm thick)	m ²	70		
10.1.10	PD 03	Floor Screeds a) 30 mm Power Floated Screed	m ²	15		
10.1.11	PD 04	Doors and Windows (a) D1 Doors (b) i) W1 Windows ii) W2 Windows	No. No. No.	2 1 1		
TOTAL CARRIED FORWARD						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SECTION PARTICULAR SPECIFICATION PD: BUILDING WORK						
ITEM NO	PAY ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
TOTAL BROUGHT FORWARD						
10.1.12	PD 08	Painting (a) One coat professional plaster primer and two coats acrylic paint	m ²	70		
10.1.13	PD 09	Ceilings (a) Plaster-Board Ceiling 9mm Thick (i) Suspended Ceiling	m ²	20		
10.1.14	PD 10	Roofing (a) Roofing (b) Overheads, charges & profit on a)1) above max limit 10%.	Prov Sum %	1	R 18 000,00 R 18 000,00	R 18 000,00
10.1.15	PD 11	Plumbing and Drainage (a) Sink Supply and Install standard ceramic white stand alone basin and pedestal 570 x 480 x 860 mm (b) Water Closet Supply and Install 400mm high, of white glazed fireclay or vitreous china close coupled suite and chromium plated brass thief proof toilet roll holder fitted to wall (c) Plumbing Works	No. No Sum	1 1 1		
10.1.16	PD 12	Electrical Installation	Sum	1		
10.1.17	PD 13	Furniture (a) Furniture (b) Overheads, charges & profit on a)1) above max limit 10%.	Prov. Sum %	1	R 9 000,00 R 9 000,00	R 9 000,00
D. PUMP STATION HOUSE						
10.1.14	PD 01	Brickwork Corobrik Montana Travertine Facebrick (a) Standard or similar approved with flush pointed mortar joints	m ²	60		
10.1.15	PD 03	Floor Screeds a) 30 mm Power Floated Screed	m ²	20		
10.1.16	PD 04	Doors and Windows (a) D2 Doors	No.	1		
10.1.17	PD 14	Crawl Beam (a) 203 x 133 x 25 I- Section	Sum	1		
TOTAL CARRIED TO SUMMARY						

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SUMMARY OF SCHEDULE OF QUANTITIES

SANS 1200 A : PRELIMINARY AND GENERAL

SANS 1200 C : SITE CLEARANCE

SANS 1200 D : EARTHWORKS

SANS 1200 DB : EARTHWORKS (PIPE TRENCHES)

SANS 1200 DM : EARTHWORKS (ROADS, SUBGRADE)

SANS 1200 G : CONCRETE (STRUCTURAL)

SANS 1200 L : MEDIUM-PRESSURE PIPELINES.

SANS 1200 LB : BEDDING (PIPES)

SANS 1200 LE : STORMWATER DRAINAGE

PARTICULAR SPECIFICATION PD : BUILDING WORK

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

SUMMARY OF SCHEDULE OF QUANTITIES

TOTAL FOR SCHEDULE OF QUANTITIES EXCL. VAT

ALLOWANCE FOR CONTINGENCIES @ 10%

TOTAL CONTRACT VALUE EXCL. VAT

VAT @ 15%

TOTAL CONTRACT VALUE TO FORM OF OFFER INCL. VAT

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



METSIMAHOLO LOCAL MUNICIPALITY

BID NO MLM 02/2023/24

**UPGRADING OF ORANJEVILLE WATER
TREATMENT PLANT (WORK PACKAGE 1)**

C3: SCOPE OF WORK

PART C3: SCOPE OF WORKS

	<u>Pages</u>
C3.1 Description of the Works	107
C3.2 Engineering	109
C3.3 Procurement	110
C3.4 Construction (Civil and Structures).....	113
C3.5 Management	187

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

The Municipality also intends for the communities directly or indirectly affected by the project to benefit by being involved in the project. All the representatives on the Community forums should be democratically elected and recognized by the community as their legal representatives.

The objective is also to deliver public infrastructure using labour intensive methods where feasible. Labour-intensive works comprise the activities described in SANS 1921-5 include some minor earthworks for exposing of services and laying of pave blocks which are to be performed by hand. Such works shall be constructed using local workers who are temporarily employed in terms of this Scope of Work.

2. OVERVIEW OF THE WORKS

The Oranjeville Water Treatment Works (WTW) supplies potable bulk water to Metsimaholo and Oranjeville settlements. Raw water is abstracted from the Vaal Dam via a floating jockey pump and pumped up to the Oranjeville WTW where it is treated at the plant. The WTW comprise two modules with a combined treatment capacity of 1.30Mℓ/d, based on a 12-hour operational period. A high lift pump station pumps treated water from the Oranjeville WTW via an Asbestos Cement (AC) main to the ground level reservoir located approximately 2.1km northwest of the WTW. The capacity of the bulk rising main is unknown. An existing pump station located at the reservoir site pumps water from the ground level reservoir to the 0.5Mℓ water tower located at the reservoir site. A 350mm ND AC bulk distribution outlet links the water tower to the distribution network. During engagement with the Metsimaholo Local Municipality (MLM), the officials reported that there are several connections to the bulk rising main from the WTW to the ground level reservoir, made to boost the pressure in the distribution network. This has a negative impact on the pump station as the pumps are pumping at varying rates and speeds depending on the demand within the network. The varying pumping rates and pumping speeds leads to regular pump breakdowns. The households located to the north-western corner of Metsimaholo settlement are located on the same height above the mean sea level as the ground level reservoir and the water tower.

Due to the high-level location of the households, the households do not receive water, as there is insufficient pressure in the network. To overcome the low-pressure in the system, operations, and maintenance officials of MLM connected the distribution network to the rising main from the WTW to the ground level reservoir. The raw water pump station is operated manually, requiring the operations official to manually switch the pumps on and off. The electrical Motor Control Centre (MCC) is located near the raw water abstraction pump, approximately 450m southeast of the WTW.

2.1 Location of the Site

The proposed site for the Upgrading of Oranjeville Water Treatment Plant is located at Oranjeville, in the Metsimaholo Local Municipality, in the Free State Province. The geographic coordinates of the site are -26.993689S / 28.208644"E.



2.2 Scope of Works

1. Installation of new 4ML/day package plant,
2. Installation of awning over doors,
3. Repairing control unit for old plant (switchgear),
4. Installation of liquid chlorinator & chlorine dosing point,
5. Installation of pump, motor, and control panel,
6. Construction of Pump house and pump pipework
7. Installation of new Telematics/Scada system,
8. Replace the current wooden door with heavy steel door for theft protection,
9. Construction of Guardhouse,
10. Completion of 200mm ND uPVC supply pipeline,
11. Completion of 160mm ND uPVC distribution pipeline.

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.

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.

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.

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, i.e. 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)

The Contractor is to indicate to the Municipality via a report certified by their auditors indicating that at least a portion 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

CONTENTS

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 Metsimaholo Local Municipality.
- 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 thereof. 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

C3.4.1 LIST OF APPLICABLE SPECIFICATIONS

C3.4.1.1 Applicable SANS 1200 Standardized Specifications

1. Management

- 1.1 Although not bound in or issued with this document, the following Standardised Specifications for Civil Engineering Construction, as amended in the Project Specifications, form part of this document. (Notwithstanding Sub clause 2.2 of SANS 1200A*, the edition specified below shall apply).

SANS 1200 A	-	1986: General
SANS 1200 AB	-	1986: Engineer's Office

- 1.2 The following Standard and Particular Specifications, as bound in this document, and as amended in the Project Specifications, shall apply:

Project Specific Health and Safety Specification including Baseline Risk Assessment
Environmental Management Plan

2. Construction

- 2.1 Although not bound in nor issued with this document, the following Standardised Specifications for civil Engineering Construction, as amended in the Project Specifications, form part of this document and, notwithstanding Sub-clause 2.2 of SANS 1200 A*, the editions specified below shall apply:

SANS 1200 A	:	GENERAL (1986)
SANS 1200 AB	:	ENGINEER'S OFFICE (1986)
SANS 1200 C	:	SITE CLEARANCE (1982)
SANS 1200 D	:	EARTHWORKS (1990)
SANS 1200 DB	:	EARTHWORKS (PIPE TRENCHES) (1989)
SANS 1200 DM	:	EARTHWORKS (ROADS, SUBGRADE) (1981)
SANS 1200 G	:	CONCRETE (STRUCTURAL) (1982)
SANS 1200 L	:	MEDIUM-PRESSURE PIPELINES (1983)
SANS 1200 LB	:	BEDDING (PIPES) (1983)
SANS 1200 LD	:	SEWERS (1982)
SANS 1200 LE	:	STORMWATER DRAINAGE (1982)
SANS 1200 LF	:	ERF CONNECTIONS (WATER) (1983)
SANS 1200 ME	:	SUBBASE (1981)
SANS 1200 MF	:	BASE (1981)
SANS 1200 MFL	:	BASE (LIGHT PAVEMENT STRUCTURES) (1996)
SANS 1200 MH	:	ASPHALT BASE AND SURFACING (1996)
SANS 1200 MJ	:	SEGMENTED PAVING (1984)
SANS 1200 MK	:	KERBING AND CHANNELLING (1983)
SANS 1200 MM	:	ANCILLARY ROADWORKS (1984)

Note 1 The Standard Specifications are not bound into the tender and contract documents, but are available at the Tenderer's/Contractor's expense from the South African Bureau of Standards in Pretoria, Private Bag X191, PRETORIA, 0001.

Note 2 Each of the Standard Specifications contains an appendix, which in turn lists further specifications, which are not bound into the tender and contract documents.

- Note 3 Both of the Standard Specifications, as well as those specifications that are listed in the appendix to the Standard Specifications, shall apply to the Contract to the same extent as if each of these specifications had been bound into the tender/contract documents.
- Note 4 The term "project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications.

C3.4.1.2 Particular Specifications

The following Particular Specifications for works not covered by the SANS 1200 Standardized Specifications are also included hereunder:

PD: Building Works

C3.4.2 VARIATIONS AND ADDITIONS TO SANS 1200 STANDARDIZED SPECIFICATIONS

SANS 1200 A	:	GENERAL (1986)
SANS 1200 AB	:	ENGINEER'S OFFICE (1986)
SANS 1200 C	:	SITE CLEARANCE (1982)
SANS 1200 D	:	EARTHWORKS (1990)
SANS 1200 DB	:	EARTHWORKS (PIPE TRENCHES) (1989)
SANS 1200 DM	:	EARTHWORKS (ROADS, SUBGRADE) (1981)
SANS 1200 G	:	CONCRETE (STRUCTURAL) (1982)
SANS 1200 L	:	MEDIUM-PRESSURE PIPELINES (1983)
SANS 1200 LB	:	BEDDING (PIPES) (1983)
SANS 1200 LD	:	SEWERS (1982)
SANS 1200 LE	:	STORMWATER DRAINAGE (1982)
SANS 1200 LF	:	ERF CONNECTIONS (WATER) (1983)
SANS 1200 ME	:	SUBBASE (1981)
SANS 1200 MF	:	BASE (1981)
SANS 1200 MFL	:	BASE (LIGHT PAVEMENT STRUCTURES) (1996)
SANS 1200 MH	:	ASPHALT BASE AND SURFACING (1996)
SANS 1200 MJ	:	SEGMENTED PAVING (1984)
SANS 1200 MK	:	KERBING AND CHANNELLING (1983)
SANS 1200 MM	:	ANCILLARY ROADWORKS (1984)

The following variations and additions to the SANS 1200 standardized specifications referred to above apply to this contract. The prefix PS indicates an amendment to SANS 1200. The letters and numbers following these prefixes respectively indicate the relevant standardized specification and clause numbers in SANS 1200 to which the variation or addition thereto applies.

C3.4.3 PROJECT SPECIFIC SPECIFICATIONS

PD: Building Works
PCL: Community Liaison and Community Relations
PLIS: Labour Intensive Construction Specification

PSA GENERAL

PSA 1 SCOPE

Replace the contents of subclause 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 between the words "specification" and "the following", insert the words "the definitions given in the Conditions of Contract and".

(a) General

Add the following definitions:

" 'General Conditions' and 'Conditions of Contract': The General Conditions of Contract specified for use with this Contract, together with the Contract Data /Particular Conditions as applicable.

'Specified': As specified in the Standardized Specifications, the Drawings or the Project Specifications. '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

Add the following at the end of subclause 3.1:

"All manufactured materials supplied shall be new materials unless the contrary is specified. All materials specified to be in accordance with SABS Specifications shall bear the SABS mark, where such a mark is available for the type of product."

Add the following subclause to clause 3:

"PSA 3.3 MATERIALS SUPPLIED BY THE EMPLOYER

Materials designated in the Contract documents to be supplied by the Employer shall not be obtained by the Contractor from any other source than from the Employer. Requisitions for materials to be supplied by the Employer shall be submitted timeously by the Contractor in writing and shall be signed by the Contractor or his authorised representative and countersigned by the Engineer.

The Contractor or his authorised representative shall, upon delivery of all such materials, sign a receipt therefore and having been accepted by the Contractor, such materials will, except only for such defects and deficiencies as may have been recorded by the Contractor in writing on the said receipt, be deemed to be in a sound and satisfactory condition and will then be deemed to be his sole responsibility, as if such

materials had been supplied by the Contractor himself.

The onus shall be entirely on the Contractor to ensure that he accepts only sound materials from the Employer, and notwithstanding the supply of materials by the Employer, the Engineer is authorised to reject as unsuitable any such material on the Site of the Works which, in his opinion, is unsound, defective or in any way not in compliance with the specifications. The Contractor shall immediately remove such rejected materials from the Site of the Works and shall replace them at his own expense, with new and sound materials which are in accordance with the Specifications to the satisfaction of the Engineer.

In the event of any circumstances arising which necessitate the replacement of any materials which were supplied by the Employer, the Contractor shall, unless otherwise instructed in writing by the Engineer, obtain such replacement materials only from the Employer. In such circumstances, the Contractor shall be liable to and pay to the Employer, all costs incurred by the Employer in supplying such replacement materials, irrespective of whether the Contractor could have obtained the said replacement materials from another source at a lesser cost than the Employer.

The aforesaid shall always apply, provided that the Contractor will not be held liable for the costs of the replacement by the Employer of unsound materials which were not accepted by the Contractor as aforesaid."

PSA 4 PLANT

PSA 4.1 SILENCING OF PLANT

Replace the contents of subclause 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, 1993 (Act No 85 of 1993) as amended.

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

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

PSA 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

Add the following paragraph before the existing first paragraph in subclause 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.

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

Delete "and first-aid services" in the second paragraph of subclause 4.2 and add the following:

"The Contractor shall provide on the Site and in close proximity to the actual locations where the work is being executed, one toilet per 10 workmen, which toilets shall be effectively screened from public view and their use enforced. Such toilets shall be relocated from time to time as the location of the work being executed changes, so as to ensure that easy access to the toilets is maintained.

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

Delete the words "in the vicinity of boundaries" in the second sentence of subclause 5.1.2 and replace the words "under the direction of" in the same sentence with "in consultation and liaison with".

Add the following after the second sentence of subclause 5.1.2:

"The Contractor and the Engineer shall record on the said list, their concurrence or disagreement (as the case may be) regarding the completeness and accuracy of the details recorded therein."

Replace the third sentence of subclause 5.1.2 with the following:

"At the completion of the Contract, the Contractor shall expose all pegs that were listed at the commencement of the construction as being in order and the Contractor shall arrange with a registered Land Surveyor for the checking of the positions of all such pegs and the replacement of those that the Land Surveyor's check reveals 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 all checking, replacement and certification as aforesaid shall be entirely for the Contractor's account. This, with the provision always that the Contractor shall not be held liable for the cost of replacement of pegs which:

- (a) cannot reasonably be re-established in their original positions by reason of the finished dimensions of the permanent works, and
- (b) the Contractor can prove beyond reasonable doubt to the satisfaction of the Engineer, were disturbed, damaged or destroyed by others beyond his control."

Add the following new subclause:

PSA 5.1.3 AS-BUILT SURVEY

The Contractor shall supply the Engineer with as-built survey data for the entire Works (including invert and cover levels, coordinates of manholes and structures, points of intersection, etc). The Completion Certificate will not be issued until the as-built survey information had been received and approved by the Engineer.

PSA 5.2.5.2 OVERHAUL

Replace the contents of this subclause with the following:

Notwithstanding any clauses in any Standardized Specification or Standard Specification Section dealing with the definition, measurement and/or payment for transport, freehaul and/or overhaul, no measurement nor payment for overhaul will be made. All haulage will be considered to be freehaul and the cost thereof will be deemed to be covered by the rates for the provision or disposal of the applicable material."

PSA 5.3 PROTECTION OF EXISTING 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 subclause 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 his 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 he intends to work. Neither the Employer nor the Engineer offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of subclauses 4.4 and 5.1.2.2 of SANS 1200 D (as amended) shall 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 the 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 when any such service is encountered or discovered on the Site.

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

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

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor's operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of his costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Engineer the Drawings as aforesaid. These costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

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

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 therefrom to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Engineer, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of subclause 5.9 of SANS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

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.

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 thereunder, the Contractor shall at his own expense (except only where specific provision (if any) is made in the Contract for the reimbursement to the Contractor in respect of particular items), provide the following:

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

Contract.

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the 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 and/or Engineer's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Engineer'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 Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of Clause 5.13.1 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 9.2.1.3.5 of the Conditions of Contract and for the Employer to cancel the Contract in accordance with the further provisions of the said Clause 9.2

PSA 5.8 ACCESS TO GROUND AND WORKS

Add the following:

"The Contractor shall:

- (a) During construction of the Works:
 - (i) improve and maintain to a standard that will ensure the safe execution of the Works, any existing access roads or roads built under this Contract and tracks required by him for the Works,
 - (ii) construct and maintain additional roads as necessary for his purposes to and along the working width of the pipeline route, to a standard required for the efficient construction of the Works.
 - (iii) keep all roads and access tracks used by him watered to minimise dust. The frequency of the watering shall be at least daily when roads and tracks are used by the Contractor, unless it is sufficiently damp after rain.

The Contractor shall not operate outside the "working width" or construction area as defined on the drawings, and he will be held wholly responsible for any damage or nuisance caused by himself, his plant, vehicles or staff throughout the period of the Contract.

- (b) Immediately on completion of each section of the Works:
 - (i) reinstate all private roads used by him, other than those under (ii) below, to at least their original condition,
 - (ii) scarify all roads constructed by him for construction purposes and which are not required by the property owner or the Employer.

On completion of operations the Contractor shall restore the ground surface, wherever it may have been disturbed, to its original condition by filling in all ruts with material similar to the material within the rut and levelling the ground and, where necessary, planting grass and shrubs as may be required. Any boundary

fences which have been removed or damaged by his operations and activities shall be repaired and/or reinstated at the Contractor's expense. Ground restoration must include proper placement of topsoil profile."

Add the following subclauses to clause 5:

"PSA 5.9 SITE MEETINGS

The Contractor or his authorised agent will be required to attend regular site meetings, which shall normally be held once a month on dates and at times determined by the Engineer, but in any case whenever reasonably required by the Engineer. Unless otherwise indicated in the Contract or instructed by the Engineer, such meetings shall be held at the 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 shall be discussed, but not matters concerning the day-to-day running of the Contract.

PSA 6 TOLERANCES

Add the following subclause to clause 6:

"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 'authorised' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the specified tolerances. Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorised' 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 7.2 APPROVED LABORATORIES

Replace the contents of subclause 7.2 with the following:

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

- (a) Any testing laboratory certified by the South African National Accreditation 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.

(d) Any other laboratory that the Engineer approves in his absolute discretion."

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 last sentence of subclause 8.1.2.1(b) with the following:

"Separate items will be scheduled to cover the fixed, value-related and time-related components of the Contractor's preliminary and general costs."

PSA 8.1.2.2 Tendered sums

Replace the contents of this subclause with the following:

"Except only where specific provision is made in the Specifications and/or the Schedule of Quantities for separate compensation for any of these items, the Contractor's tendered sums under items PSA 8.3 and PSA 8.4 shall collectively cover all charges for:

- Risks, costs and obligations in terms of the Conditions of Contract and of this standardized specification;
- Head-office and site overheads and supervision;
- Profit and financing costs;
- Expenses of a general nature not specifically related to any item or items of the permanent or temporary work;
- 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 entry and exit medical tests for all personnel including the provision of Personal Protective Equipment (PPE).

PSA 8.2 PAYMENT

PSA 8.2.1 Fixed-charge and value-related items

Replace the contents of subclause 8.2.1 with the following:

PSA 8.2.1.1 Fixed-charge items

"Payment of fixed charges in respect of item 8.3.1 will be made as follows:

- (a) EIGHTY PER CENT (80%) of the sum tendered will be paid when the facilities have been provided and approved;
- (b) The remaining TWENTY PER CENT (20%) will be paid when the works have been

completed, the facilities have been removed and the site of the Contractor's establishment has been cleared and cleaned to the satisfaction of the Engineer.

No adjustment will be made to the sum tendered in respect of item 8.3.1 should the value of the works finally executed or the time for completion vary in any way from that specified in the tender.

PSA 8.2.1.2 Value-related items

Payment for the sum tendered under item 8.3.2 will be made in three separate instalments as follows:

- (a) The first instalment, which is 40% of the sum, will be paid when the Contractor has fulfilled all his obligations to date under this specification, the General Conditions of Contract and the Contract Data, and when the value of work certified for payment, excluding materials on site and payments for preliminary and general items, is equal to not less than 5% of the total value of the work listed in the Schedule of Quantities.
- (b) The second instalment, which is 40% of the sum, will be made when the amount certified for payment, including retention moneys but excluding this second instalment, exceeds 50% of the tender sum.
- (c) The final payment, which is 20% of the sum, will be made when the works have been certified as practically completed and the Contractor has fulfilled all his obligations to date under this Specification, the General Conditions of Contract and the Contract Data.

Should the value of the measured work finally completed be more or less than the tender sum, the sum tendered under item 8.3.2 will be adjusted up or down in accordance with the provisions of Clause 6.11 of the Conditions of Contract, and this adjustment will be applied to the third instalment."

PSA 8.2.2 Time-related items

Replace the contents of subclause 8.2.2 with the following:

"Subject to the provisions of subclauses 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."

PSA 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS

Replace the contents of subclause 8.3.1 with the following:

"PSA 8.3.1 Fixed preliminary and general charges Unit: sum

The sums tendered shall include full compensation for all fixed-charge preliminary and general charges as described in subclause PSA 8.1.2.2. Payment will be made as described in subclause PSA 8.2.1.1.

PSA 8.3.2 Value-related preliminary and general chargesUnit: sum

The sums tendered shall include full compensation for all value-related preliminary and general charges as described in subclause PSA 8.1.2.2. Payment will be made as described in subclause PSA 8.2.1.2."

PSA 8.4 SCHEDULED TIME-RELATED ITEMS

Replace the contents of subclause 8.4 with the following:

"PSA 8.4.1 Time-related preliminary and general chargesUnit: sum

The sum tendered shall include full compensation for all time-related preliminary and general charges as described in subclause PSA 8.1.2.2. Payment will be made as described in subclause PSA 8.2.2."

PSA 8.5 SUMS STATED PROVISIONALLY BY THE ENGINEER

Replace the contents of subclause 8.5 with the following:

- (a) Nominated sub-contractor for the supply, installation and commissioning of the package plant.....Unit: Stated Sum

The Contractor shall not be paid directly for these works. Payment for the works shall be made by the Employer directly to the Nominated Sub-Contractor. The Contractor shall only be paid for the overheads and charges on profit for the total sums as determined in accordance with the provisions of Clause 6.6 of the conditions of contract. Mark up on overhead charge limited to 2.5%.

- (b) Water Use License.....Unit: Stated Sum

The Contractor shall be paid directly for this item. Payment for the works shall be made by the Employer Contractor and the Contractor shall in turn make payment to the Nominated Service Provider for the provision of the services under this item. The Contractor shall be paid for the overheads and charges on profit for the total sums as determined in accordance with the provisions of Clause 6.6 of the conditions of contract.

- (c) Community Liaison Officer.....Unit: Stated Sum

The Contractor shall be reimbursed directly for this item. Payment for the works shall be made by the Employer Contractor and the Contractor shall in turn make payment to the Community Liaison Officer for the provision of the services under this item. The Contractor shall not wait for this payment before making payment to the Community Liaison Officer. These items are reimbursable. The Contractor shall be paid for the overheads and charges on profit for the total sums as determined in accordance with the provisions of Clause 6.6 of the conditions of contract.

- (d) Portal frames & sheeting material.....Unit: Stated Sum

The Contractor shall be reimbursed directly for this item. Payment for the works shall be made by the Employer Contractor and the Contractor shall in turn make payment to the fabricator of the services under this item. The Contractor shall not wait for this payment before making payment to the fabricator. These items are reimbursable. The Contractor shall be paid for the overheads and charges on profit for the total sums as determined in accordance with the provisions of Clause 6.6 of the conditions of contract.

- (e) SETA Accredited skills training and student in-service training.....Unit: Stated Sum

The Contractor shall be reimbursed directly for this item. Payment for the item shall be made by the Employer Contractor and the Contractor shall in turn make payment to the appointees for the SETA Accredited training as well as the student for in service training. The Contractor shall not wait for this payment before making payment to the recipients. These items are reimbursable. The Contractor shall be paid for the overheads and charges on profit for the total sums as determined in accordance with the provisions of Clause 6.6 of the conditions of contract.

PSA 8.6 PRIME COST ITEMS

Replace subclause 8.6 with the following:

"PSA 8.6 PRIME COST SUMS

- (a) Description of item to which Prime Cost Sum applies Unit: PC sum
- (b) Charge required by Contractor on subitem (a) above Unit: %

Subitems (a) and (b) will be provided in the Schedule of Quantities for each different item to which a Prime Cost Sum applies.

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

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

If the Contractor shall have omitted within his tender to insert a tendered percentage under subitem (b), or tendered a zero percentage, the Contractor's tendered rate for subitem (b) shall be deemed to be zero and the Contractor shall not be entitled to any payment under subitem (b).

Note in connection with additional tests required by the Engineer:

PSA 8.7 DAYWORK

Replace the contents of subclause 8.7 with the following:

"Measurement and payment shall be in accordance with the provisions of Clause 6.5 of the Conditions of Contract.*"

"PSA 8.9 WAYLEAVE.....Unit: sum

The tendered sum shall include full compensation to the Contractor for all the costs involved in obtaining the wayleave.

PSA 8.11 COMPLIANCE WITH OHS ACT, CONSTRUCTION REGULATIONS, 2014 AND OHS SPECIFICATION..... Unit: sum/Prov Sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations 2014 including any applicable amendments thereof) at all times for the full duration of the Contract, and the costs of whatever nature including personnel, for complying with the obligations of OHS Specification will be deemed to be covered by the sums tendered.

The client reserves the right to exclude the remuneration of the Health and Safety officer from the contract.

PSA 8.12 CONTRACT NAMEBOARDS.....Unit: sum

The tendered sum shall include full compensation to the Contractor for all the costs involved in the supply, installation and maintaining the number and size of contract nameboards as shown on the drawings, including the removal of the boards at the end of the contract period.

PSA 8.13 ENVIRONMENTAL MANAGEMENTUnit: sum

The costs of whatever nature, including personnel, for complying with the obligations of Environmental Management Plan will be deemed to be covered by the sums tendered.

The client reserves the right to exclude the remuneration of the Environmental Control officer as well as the Safety Officer from the contract

PSA 8.16 PROVISION OF SECURITY PERSONNELUnit: sum

The costs of whatever nature for providing security personnel the Contractor deems appropriate, taking cognisance of the location of the site, will be deemed to be covered by the sum tendered.

Payment will be made in equal monthly amounts over the Contract Period.

PSA 8.17 INSTALLATION OF 2 X WKLn 80/3 PUMP, 5.5kW MOTOR, ELECTRICAL WORKS, CONTROL PANEL & ASSOCIATED PIPEWORK (Max. 250mm diameter)Unit: sum

The pump, motor and baseplate have been procured by the Employer.

The tendered sum shall include full compensation to the Contractor for all costs involved in transportation from municipal storage within a 50km radius of construction site, placing, installing, testing, and installing all associated electrical and mechanical infrastructure with maximum cable and pipework length 20m including the control panel.

The tendered sum shall also include pump connection pipework.

PSA 8.18 FREEHAUL AND OVERHAUL

Notwithstanding any clauses in any Standardized Specification or Standard Specification Section dealing with the definition, measurement and/or payment for transport, freehaul and/or overhaul, no measurement nor payment for overhaul will be made. All haulage will be considered to be freehaul and the cost thereof will be deemed to be covered by the rates for the provision or disposal of the applicable material."

PSC SITE CLEARANCE

PSC 3 MATERIALS

PSC 3.1 DISPOSAL OF MATERIAL

Add the following:

"The Contractor shall obtain his own dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance."

PSC 5 CONSTRUCTION

PSC 5.1 AREAS TO BE CLEARED AND GRUBBED

Add the following:

"Pipeline routes shall be cleared to a width as specified in the schedule of quantities. Route pegs or markers shall not be destroyed or damaged during clearing operations."

Add the following:

"The following applies to clearing widths:

- (a) The width to be cleared for the road shall not exceed the road reserve width plus 1m.
- (b) The area to be cleared for parking zones shall not exceed the specified dimensions by a margin of 0,5 m measured from the perimeter.

PSC 5.2 CUTTING OF TREES

PSC 5.2.3 Preservation of trees

PSC 5.2.3.2 Individual trees

Replace the last sentence with the following:

"An amount of R500.00 will be deducted from moneys due to the Contractor as a penalty for every tree that is damaged or removed unnecessarily."

PSC 5.5 RECLEARING OF VEGETATION

Add the following:

"When areas have to be recleared on the written instructions of the Engineer, such reclearing shall be carried out at the Contractor's own cost and the Contractor is therefore advised not to clear the areas too soon."

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.1 BASIC PRINCIPLES

Add the following:

"The thickness of the layer that will unavoidably be stripped during clearing of vegetation will be specified. This implies that levels used in earthworks quantity calculations will be lower by specified depth than the original levels."

PSC 8.2 SCHEDULED ITEMS

PSC 8.2.10 Remove topsoil to nominal depth of 150 mm and stockpile

Replace the heading with "Remove topsoil to nominal depth of".

Add the following items in subclause 8.2:

PSC 8.2.11 Remove topsoil to spoil site furnished by ContractorUnit: m³

The tendered rate shall include full compensation for removing topsoil to the depth of specified and for loading and transporting the material to spoil sites furnished by the Contractor."

PSC 8.2.12 Demolishing and Removal of Existing Concrete Structures.....Unit: m³

The tendered rate shall include full compensation for the demolishing and removal of rubble to the nearest dump site as identified by the Engineer and Contractor.

Separate items will be scheduled for each type of concrete as well as the thickness of the concrete.

PSD EARTHWORKS

PSD 2 INTERPRETATIONS

PSD 2.1 SUPPORTING SPECIFICATIONS

Replace subclause 2.1.2 with the following:

"PSD 2.1.2 Any of the other SANS 1200 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. In roads it includes the earthworks up to the underside of the selected subgrade level.

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 3.2.3 Material suitable for backfill or fill against structures

Replace the contents of this subclause 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;
- (b) The material shall not contain large clay lumps that do not break up under the action of the compaction equipment; and
- (c) The liquid limit of the material shall not exceed 40, neither shall the PI exceed 18."

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 No 85 of 1993)".

PSD 5.1.1.2 Safeguarding of excavations

Replace "Machinery and Occupational Safety Act" with "Occupational Health and Safety Act, 1993 (Act No 85 of 1993)".

PSD 5.1.1.3 Explosives

Replace the contents of this subclause with the following:

"The use of explosives is prohibited on this project."

PSD 5.1.2 Existing services

PSD 5.1.2.2 Detection, location and exposure

Replace the contents of subclause 5.1.2.2 with the following:

"The exposure by the Contractor of underground services, as required in terms of subclause 5.4 of SANS 1200 A (as amended) 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: 93% modified AASHTO density; and
- (b) In all other areas: 90% modified 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 subclause 5.9 of SANS 1200 DB.

Payment in respect of exposing the services by means of hand excavation as described above, will be made in accordance with subclause PSD 8.3.8.1.

Payment in respect of reinstating layerworks in roadways will be made in accordance with subclause 8.3.6.1 of SANS 1200 DB (as amended)."

PSD 5.1.2.3 Protection of cables

Replace subclause 5.1.2.3 with the following:

"5.1.2.3 Protection during construction

Further to the requirements of subclause 5.4.2 of SANS 1200 A (as amended), 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 subclause 5.4.2 of SANS 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

Delete subclause 5.1.2.4.

PSD 5.1.3 Stormwater and groundwater

Add the following:

"The Contractor shall, where applicable and at the earliest practicable opportunity, install the permanent drainage specified or shown on the Drawings and shall at his own cost provide the temporary drainage required to protect the works."

PSD 5.1.5 Reinstatement and maintenance of roads

Add the following:

"Where crossings have been made, the road shall be reinstated in accordance with the details specified in subclause 5.9 of SABS 1200 DB."

PSD 5.1.6 Road traffic control

Delete the second sentence of subclause 5.1.6.

PSD 5.2 METHODS AND PROCEDURES

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. The tendered rate for item 8.3.5 will be deemed to include the cost of 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 compacted to 90% 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 retrim 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 all 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.

Payment to the Contractor in respect of locating and making arrangements for suitable spoil sites and spoiling material at the such sites will be made in accordance with the provisions of subclause PSD 8.3.15."

Add the following subclause in subclause 5.2.2:

"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 to which the said approval or designation relates, nor that all material in the borrow pit or source should be used for the particular purpose. The Contractor shall select suitable material from that borrow pit or source, discard unsuitable material and reserve material for other purposes as necessary.

The Contractor shall organise and carry out his operations in such a manner as will prevent the contamination of suitable embankment and backfill material with unsuitable materials. Any excavated material which becomes, in the Engineer's opinion, unsuitable for use in embankments 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 stockpiled for later use. The additional costs for stockpiling material shall be paid to the Contractor in accordance with the provisions of subclause PSD 8.3.14."

PSD 5.2.5 Transport for earthworks

Replace the contents of subclause 5.2.5 with the following:

"The transport of all excavated materials, irrespective of the distance and source, shall be deemed to be free-haul, the cost of which is included in the Contractor's tendered rates and prices for the excavation of the materials. No separate compensation shall apply for the transportation of excavated materials."

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 SANAS Approved independent laboratory engaged by the Contractor to carry out sufficient tests on a regular basis as agreed between him 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 subclauses 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 is required, the provisions and scheduled items of SANS 1200 C shall apply."

PSD 8.3.1.1 Clear and Strip Site

Replace subclauses 8.3.1.1. and 8.3.1.2 with the following:

"Clear and strip site for berm at terrace boundary and remove and spoil all debris and rubble."

Replace subclauses 8.3.1.2 with the following:

"Remove topsoil to nominal depth 200 mm stockpile and maintain (only areas indicated by the engineer on site)."

PSD 8.3.2 Bulk excavation

Replace the contents of item with the following:

"(a) Excavate in all materials and use for berm or stockpile as ordered from:

- | | | |
|-----|-----------------------------|----------------------|
| (1) | Necessary excavations..... | Unit: m ³ |
| (2) | Designated borrow pits..... | Unit: m ³ |
| (3) | Commercial Sources..... | Unit: m ³ |

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 embankments and backfills for different parts of the works.

The tendered rates shall cover the cost of complying with all the precautions required in terms of subclause 5.1 of SABS 1200 D (as amended), in addition to the cost of excavating in all materials, basic selecting, loading, transporting, off-loading, spreading or backfilling, watering, compacting, final grading, complying with the requirements for tolerances, providing for testing, finishing and tidying, all in accordance with the specification.

PSD 8.3.3 Restricted excavation

Replace the words "(a) Excavate for restricted foundations, footings and pipe trenches" with "(a) Excavate for chambers, restricted foundations, footings and pipe trenches".

Replace the words "in 1 m increments" at the end of the first sentence of subitem (a) with "in the increments indicated in the Bill of Quantities".

Replace "in 5.2.2.1 – 5.2.2.3 (inclusive)" at the end of subclause (a) with "in subclauses 5.2.2.1 to 5.2.2.5 (inclusive)".

Add the following subitem:

" (c) Extra over subitem 8.3.3 (a) for hand excavation..... Unit: m³

This item shall apply to hand excavation ordered by the Engineer or when the Engineer considers that, owing to circumstances, excavation by mechanical excavators is not practical. It shall not apply to hand excavation used for trimming or finishing an excavation made by mechanical means.

The tender rate shall include full compensation of additional cost of excavating by means of hand tools"

PSD 8.3.4 Importing of materials

Delete subitem (a) of 8.3.4.

PSD 8.3.6 Overhaul

Delete subitem (a) of 8.3.6.

Add the following:

"No overhaul shall apply to material from commercial sources or to material disposed of on sites provided by the Contractor or disposed of by other means employed by the Contractor."

PSD 8.3.8 Existing services

PSD 8.3.8.1 Location

Replace item 8.3.8.1 with the following:

"8.3.8.1 Hand excavation for locating and exposing existing services:

(a) In roadways Unit: m³

(b) In all other areas Unit: m³

The unit of measurement shall be the cubic metre of material excavated, measured in place according to the authorised or actual dimensions of the excavation, whichever is the lesser.

The tendered rates shall cover the cost of excavating in all materials by means of hand tools within authorised dimensions and at locations approved by the Engineer in accordance with the requirements of subclause PSA 5.4.1 for all precautionary measures necessary to protect the services from damage during excavation and backfilling, and for subsequent backfilling and compacting. Compaction of material in all areas except in roadways shall be to 90% of the modified AASHTO density.

The tendered rate for hand excavation in roadways shall include compensation for compacting excavated or selected backfill material to 93% of modified AASHTO density. Reinstating layerworks and surfacing shall be measured and paid for in terms of SANS 1200 DB.

The tendered rates shall also include for keeping excavations safe, for dealing with surface and subsurface water, for removing surplus excavated material from the site, for transporting all material within the free-haul distance, and for supplying adequate supervision during both excavation and backfilling operations. Overhaul, if applicable, will be measured and paid for in terms of SANS 1200 DB."

PSD 8.3.11 Grassing or other Vegetation Cover

Add the following after the second sentence:

"The tendered rate shall be irrespective of the number of applications required to obtain the required spread rate."

PSDB EARTHWORKS (PIPE TRENCHES)

PSDB 3 MATERIALS

PSDB 3.5 BACKFILL MATERIALS

Add the following paragraphs to subclause 3.5:

"(c) Cement-stabilized backfilling

Backfilling shall, where directed by the Engineer, be stabilized with 5% cement. The aggregate shall consist of approved soil or gravel containing stones not bigger than 38 mm and with a plasticity index not exceeding 10.

The soil or gravel shall be mixed with 5% cement and shall be compacted in layers of 100 mm thick to 90% of modified AASHTO density.

(d) Soilcrete backfilling

The aggregate for soilcrete shall be mixed with 5% cement and shall consist of approved soil or gravel containing stones not bigger than 38 mm and with a plasticity index not exceeding 10.

The soil or gravel shall be mixed in a concrete mixer with the cement and enough water to acquire a consistency that allows the mixture to be placed with vibrators to fill all voids between the pipe and the sides of the trench. Shuttering shall be used where necessary."

PSDB 3.7 SELECTION

Replace the words "if he so wishes" in the first line of the second paragraph with the words "at his own cost".

PSDB 5 CONSTRUCTION

PSDB 5.1 PRECAUTIONS

Add the following new subclauses to subclause 5.1:

"PSDB 5.1.5 Removal of existing pipelines

Where existing pipes have to be removed, they shall be carefully opened up by machine excavation to 300 mm above the pipes after which the whole pipe shall be fully exposed by means of hand excavation. The excavation width shall comply with subclause 8.2.3.

The pipes shall be removed from the trench in a manner approved by the Engineer, and brought to the surface for inspection by the Engineer.

Pipes that are declared suitable for reuse and pipes declared unfit for reuse shall be dealt with in an applicable manner described in the specifications, or on the Drawings or on the Engineer's instructions, as relevant."

PSDB 5.1.6 Stability of trench excavations

The precautions for excavations as specified in Clause 5.1.1 of SANS 1200 D, and the relevant amendments to the Standard Specification's clauses, shall also apply to all trench excavations.

The Contractor shall take all the steps necessary to ensure that no person is required or allowed to work in a trench or any other unsupported overhanging excavation which is more than 1,5m deep, or any excavation which has not been adequately supported, shored or braced if there is any danger whatsoever of the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question. '

PSDB 5.2 MINIMUM BASE WIDTHS

Replace paragraph (a) with the following:

"Where two pipes are placed in the same trench, they shall be 300 mm apart or as indicated on the Drawings and the specified side allowance shall still be applicable."

Add the following after paragraph (b):

"The above is not applicable to trenches for subsurface drains.

Trenches for subsurface drains shall be excavated to the dimensions and gradients shown on the Drawings or directed by the Engineer.

The specified width of trenches and the width of the excavation measured for payment shall not be less than 0,5 m, but the Contractor may reduce the actual width with the Engineer's permission."

PSDB 5.4 EXCAVATION

Add the following:

"Except where otherwise specified, trenches shall be of such a depth that the minimum cover over the pipes shall be 800 mm except at road-crossings where the minimum cover shall be 1 200 mm."

PSDB 5.6 BACKFILLING

PSDB 5.6.3 Disposal of soft excavation material

Replace the words "unless otherwise required in the project specification." at the end of subclause 5.6.3 with:

"... or to spoil in accordance with the requirements of subclause PSD 5.2.2.3, as instructed by the Engineer."

PSDB 5.6.4 Disposal of intermediate and hard rock material

Replace the last section of subclause 5.6.4 ".... disposed of as specified in 5.6.3 or removed to designated sites," with ".... disposed of outside the site boundaries."

Add the following subitem to subclause 5.6:

"PSDB 5.6.9 Backfilling around structures

Backfilling around a structure shall not be commenced before it has been approved by the Engineer.

Granular material shall be used as backfill material around structures as shown on the drawings and shall be placed in layers not exceeding 150 mm compacted thickness, each layer being thoroughly compacted to 100% of modified AASHTO density as instructed by the Engineer before the succeeding layer is placed. Unsuitable or surplus excavated material shall be spoiled off site."

PSDB 5.7 COMPACTION

PSDB 5.7.1 Areas not subject to Traffic Loads

Add the following sentence:

"All non-cohesive material shall be compacted to 100% modified AASHTO density."

PSDB 5.7.2 Areas Subject to Traffic Loads:

Delete "93% and 98%" and substitute with "95% and 100% respectively".

Add the following:

"All pipe trenches that fall within the road reserves shall be regarded as areas subject to traffic loads."

Add the following items to subclause PSDB 5:

"PSDB 5.11 UNSTABLE TRENCH BOTTOM

The Engineer may, upon consideration of the condition of the trench bottom, particularly with regard to the properties of the soil materials, order the use of a crushed stone layer in order to provide a stable foundation for placing the pipe bedding. The stone layer shall consist single-sized crushed stone as shown on the Drawings and shall have a minimum specified thickness of 300 mm or as shown on the drawings, with whichever is the greater applying over the specified minimum base width.

PSDB 5.12 TRENCH WALL STABILITY

The Contractor shall take responsibility for the length of open trench at any time and if collapse of the side walls occurs for any reason, the responsibility will be with the Contractor and he will reinstate and make good at his own cost."

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1 BASIC PRINCIPLES

Add the following:

"PSDB 8.1.2 In the road prism or building platform the ground surface from which depth will be measured will always (irrespective of operation sequenced) be the road bed level at centre-line.

PSDB 8.2 COMPUTATION OF QUANTITIES

Replace the contents of subclause 8.2.3 with the following:

"Wherever volumetric measurement is required, the volume will be computed according to the depths indicated on the drawings, or to the bottom of the specified bedding cradle, whichever is the greater, and the width determined from the applicable side allowance set out below (see drawing DB-4) plus the nominal width of the pipe. Side allowance shall be measured from the outside of the pipe. No allowance shall be made for the extra thickness of the collars or couplings.

All Pipes Excluding Ducts		
Nominal Diameter, mm		Side clearance on each side, mm
From	To	
0	125	200
125	700	300
700	1000	400
1000	2000	500
2000	-	600

The side allowance for ducts shall be 150 mm and there shall be 300 mm between a Telkom duct and any other duct/service placed in the same trench.

Where two or more pipes/ducts are to be placed in one trench, the specified base width shall be calculated as follows:

The trench width for the deeper service shall be calculated according to above specifications. The effective trench width for the shallower service shall then be the difference between its specified base width and the overlap with the trench of the deeper service.

The trench width for subsurface drains shall be as shown on the drawings."

PSDB 8.3 SCHEDULED ITEMS

PSDB 8.3.2 Excavation

(a) Excavate in all materials, for trenches, backfill compact and dispose of surplus material

Replace "of 1,0 m" in the first sentence of 8.3.2(a) with "as specified in the Schedule of Quantities."

(b) Extra over item (a) above for:

Add the following at the end of the existing subitem 2:

"No payments will be made under subitems (1) and (2) in respect of any materials measured and paid for under subitem 3 below."

And add the following new subitems in 8.3.2(b):

"(3) Hand excavation where ordered by the Engineer.....Unit: m³

The unit of measurement shall be the cubic metre of material, measured in place according to the authorised dimensions, which was excavated by hand on the specific prior written instructions of the Engineer; provided always that the Engineer's said instruction shall have stated that measurement and payment for such hand excavation will be in accordance with this item.

The tendered rate shall include full compensation for the additional cost, effort and time resulting from excavating in the respective materials using hand methods only.

The Engineer shall not be obliged to authorise payment under this item in respect of any hand excavation carried out (whether ordered in writing or otherwise), which hand excavation was in any case necessary to achieve compliance by the Contractor with his obligations under the Contract to

- (i) utilise construction appropriate to the nature of the specific parts of the works; and/or
- (ii) protect existing structures and/or services; and/or
- (iii) comply with all prevailing legislation and regulations.

(4) Backfill stabilized with 5% cement where directed by the Engineer Unit: m³

The unit of measurement shall be the cubic metre of backfill material, measured in place after compaction according to the authorised dimensions, which was stabilized on the Engineer's instructions in accordance with subclause PSDB 3.5(c).

The tendered rate shall include full compensation for supplying the cement and for selecting, mixing, backfilling and compacting the stabilized material to 90% of modified AASHTO density.

(5) Soilcrete backfill where directed by the Engineer Unit: m³

The unit of measurement shall be the cubic metre of soilcrete placed on the Engineer's instructions in accordance with subclause PSDB 3.5(d), measured in place according to the authorised dimensions.

The tendered rate shall include full compensation for supplying the cement and for selecting, mixing and placing the soilcrete as well as for the cost of shuttering if required."

"(d) Excavate in all materials for stormwater inlet and outlet structures

and for manholes, catchpits, valve chambers and the like,
irrespective of depth, and backfill around structures: Unit: m³

The unit of measurement shall be the cubic metre of material excavated, measured in place according to the authorised dimensions, and excluding the volume of material excavated and paid for under subitem (a).

The tendered rate shall include for the costs of excavating in all materials, backfilling, compacting, trimming and tidying the final surface around the structure, disposing of surplus and unsuitable materials within the free-haul distance and, where applicable, selecting and keeping separate, excavated material suitable for use as backfill.

(e) Excavate open drains in all materials Unit: m³

The tendered rates shall include full compensation for excavating in all materials within the dimensions specified or authorised by the Engineer and to the specified lines and profiles, for the disposal of surplus and unsuitable excavated material where applicable, and in the case of item (d), for backfilling with suitable approved material compacted to 90% of modified AASHTO density around the structures.

(f) Extra over subitems (d) and (e) for excavating in:

(1) Intermediate material Unit: m³

(2) Hard rock material Unit: m³

Measurement and payment shall be in accordance with the provisions of 8.3.2(b) of SANS 1200 D (as amended)."

PSDB 8.3.3 Excavation ancillaries

PSDB 8.3.3.3 Compaction in road reserves

Replace the heading of this subitem with the following:

"PSDB 8.3.3.3 Compaction in road crossings"

Replace the sentence, "The volume will be measured as specified in 8.2.2, 8.2.3 and 8.3.3.1", with the following:

"To determine the volume in the case of gravel roads, the depth will be measured from the underside of the gravel wearing course to the top of the fill blanket, and in the case of bitumen roads, from the underside of the subbase to the top of the fill blanket.

The rest of the trench shall be backfilled as specified in clauses 5.9.3, 5.9.4 and 5.9.5, as applicable, and payment will be made under item 8.3.6.1."

PSDB 8.3.3.4 Overhaul

Replace the contents of this item with the following:

"Measurement and payment shall be in accordance with subclause PSD 5.2.5."

PSDB 8.3.5 Existing services that intersect or adjoin a pipe trench

(a) Services that intersect a trench

Replace "angle between centreline in plan of 45-90°" in the first sentence of 8.3.5 (a) with "as specified in the Schedule of Quantities."

(b) Services that adjoin a trench

Replace “parallel to or at an angle between centrelines in plan of less than 45° “ in the first sentence of 8.3.5 (a) with “as specified in the Schedule of Quantities.”

Add the following item to subclause 8.3:

“PSDB 8.3.8 Temporary stockpiling of wet material from trench excavations

The excavation and stockpiling of material which is too wet, will be measured by the volume, based on the specified trench width, depth and length, which the Engineer orders to be removed.

The rate shall cover the cost of all operations required to handle, transport to a suitable site and spread to allow the material to dry sufficiently, as well as any costs for disruptions, delays and associated overhead costs resulting from drying out the material.

Should the material which is replaced in the trench become too wet again, due to the fact that the Contractor made insufficient provision for the handling and removal of groundwater in accordance with Subclause 5.5 of SABS 1200 A, the Contractor shall replace the material at his own cost with material which is, in the opinion of the Engineer, suitable.

PSDM EARTHWORKS (ROADS, SUBGRADE)

PSDM 3 MATERIALS

PSDM 3.2 CLASSIFICATION FOR PLACING PURPOSES

PSDM 3.2.3 Selected layer

Replace the contents of this subclause 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)

- (ii) Lower selected layer

Minimum CBR at 90% of modified AASHTO density: 7

Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

- (c) Stabilized selected layer

Minimum grading modulus of natural material: 0, 75

UCS of stabilized material 300 kPa - 500 kPa at 93% of modified AASHTO density

Maximum PI for stabilized material: 10"

PSDM 5 CONSTRUCTION

PSDM 5.2 METHODS AND PROCEDURES

PSDM 5.2.2 Cut and borrow

PSDM 5.2.2.3 Use of material

Add the following paragraph:

"(e) Commercial sources

The provisions of subclause PSD 5.2.2.5 of SANS 1200 D as amended shall apply."

PSDM 5.2.2.6 Catchwater mounds and channels and mitre banks and channels

Add the following sentence:

"Catchwater mounds and mitre banks shall be compacted to a minimum density of 90% of modified AASHTO density

PSDM 5.2.3 Treatment of the road-bed

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 road-bed

Add the following paragraph:

"(c) Three-pass roller compaction

Any portion of the roadbed that is shown on the Drawings or is specified or is directed by the Engineer to be given three-pass roller compaction because of its inadequate natural density, shall be prepared by shaping where necessary and compacting with a roller, complying with the requirements specified below.

Compaction shall comprise three complete coverages by the wheels of the specified roller over every portion of the area that is being compacted. While it is not the intention that the Contractor should apply water to the roadbed for this type of compaction, and while no rigid moisture control will be exercised during compaction, the Contractor shall nevertheless satisfy the Engineer that everything is being done to take full advantage of favourable soil moisture conditions during the rainy season, and that such compaction is as far as possible carried out when the roadbed is neither excessively dry nor excessively wet.

The Engineer has the authority to decide when conditions are favourable for compaction and where such compaction is to be carried out at any particular time, and he has the right to instruct the Contractor to water the roadbed at the Contractor's expense when, in the opinion of the Engineer, the Contractor failed, neglected or refused to comply with these requirements.

The rollers to be used for roller-pass compaction shall conform to the following requirements:

Grid roller: The grid roller shall have a mass of not less than 13, 5 t when ballasted, shall be loaded to this mass if required, and shall be moved at a speed of not less than 12 km/h.

Vibratory roller: The vibratory roller shall be capable of exerting a combined static and dynamic force of not less than 120 kN/m width for every metre of loose-layer thickness at an operating frequency not exceeding 25 Hz and shall move at a speed not exceeding 4 km/h."

PSDM 5.2.4 Fill

PSDM 5.2.4.3 Finishing

(e) Topsoiling

Replace the second sentence with the following:

"The thickness of the topsoil shall be as directed by the Engineer."

PSDM 5.2.5 Selected layer

Replace the contents of this subclause with the following:

"Except with regard to density, the requirements of subclause 5.2.4 shall apply. The degree of compaction shall be:

Upper selected*

Selected* : 93% of modified AASHTO density

PSDM 5.2.6 Gravel surfacing

Replace the third sentence of this subclause with the following:

"The relevant requirements in subclause 5.2.4.2 shall apply, except that the material shall be compacted to 93% of modified AASHTO density."

PSDM 5.2.8 Transport

Replace the contents of this subclause with the following:

"The provisions of subclause PSD 5.2.5 of SANS 1200 D, as amended, shall apply."

PSDM 5.2.8.1* Freehaul

Replace the content of this subclause with the following:

"All transport within the site boundaries will be regarded as freehaul."

PSDM 5.2.8.2* Overhaul

Delete the contents of this clause and replace with the following:

"No overhaul outside the site boundaries will be paid. All transport costs for spoiling or importation of material will be deemed to be included in the relevant rates."

PSDM 6 TOLERANCES

PSDM 6.2 DIMENSIONS, LEVELS ETC.

PSDM 6.2.2 Cut

Add the following tolerance:

"(d) Final level of all cuttings +0 mm to -50 mm."

PSDM 7 TESTING

PSDM 7.3 ROUTINE INSPECTION AND TESTING

Replace table 2 and the contents of subclause 7.3.2 with the following:

"PSDM 7.3.2 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 subclause 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* or selected layer* and gravel wearing course	93	3 and 4	93,1	89,4
		5	93,4	89,2
		6	93,6	89,0
Lower selected*	93	3 and 4	93,1	89,4
		5	93,4	89,2
		6	93,6	89,0
Fill (other than sand)	90	3 and 4	90.1	86.4
		5	90.4	86.2
		6	90.6	86.0

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.2 COMPUTATION OF QUANTITIES

Replace subclauses 8.2.1 to 8.2.3 (inclusive) with the following:

"PSDM 8.2.1 The provisions of subclause 8.2.1 of SANS 1200 D shall apply.

PSDM 8.2.2 The provisions of subclause 8.2.2 of SANS 1200 D shall apply.

PSDM 8.2.3 The provisions of subclause 8.2.2 of SANS 1200 D shall apply."

PSDM 8.2.5 Verifying quantities

Replace the first sentence with the following:

"Before any earthworks are commenced but after completion of any site preparation, the Engineer will, upon a written request from the Contractor, provide cross-sections for the purpose of measurement of earthworks quantities."

PSDM 8.3 SCHEDULED ITEMS

PSDM 8.3.3 Treatment of roadbed

(a) Roadbed preparation and compaction of material to

Add the following:

"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."

Add the following:

"(c) Three-pass roller compaction:

(i) Grid roller..... Unit: m²

(ii) Vibratory roller..... Unit: m²

The units of measurement shall be the square metre of roadbed compacted as specified in subclause PSDM 5.2.3.3(c) for the areas designated by the Engineer.

The tendered rates shall include full compensation for shaping the areas, providing the rollers and compacting the roadbed by means of three roller passes over the entire area."

PSDM 8.3.4 Cut to fill, borrow to fill

Add to 8.3.4

"(c) Compact to 93% Mod. AASHTO maximum density.....Unit: m³"

Replace the last sentence of this item with the following:

"The unit of measurement shall be the cubic metre of fill and the volume will be calculated in accordance with the authorised dimensions of the embankment and levelled cross-sections.

The tendered rates shall include full compensation for excavating the material as if in soft material, for selecting, loading, transporting for the free-haul distance, off-loading, watering, mixing and compacting the material as specified. Borrow to fill in this item relates to material from designated borrow areas (provided by the Employer).

Where it is required that material be obtained from commercial sources, payment for procuring the material will be made under item PSDM 8.3.17."

PSDM 8.3.5 Selected layer compacted to 93% of modified AASHTO maximum density

Replace the heading and the contents of this item with the following:

"PSDM 8.3.5 Selected layer using material from designated borrow pits, stockpiles or excavation:"

(a) Compacted to 90% of modified AASHTO density..... Unit: m³

(b) Compacted to 93% of modified AASHTO density..... Unit: m³

(c) Compacted to 100% of modified AASHTO density (sand)..... Unit: m³

The unit of measurement shall be the cubic metre and the quantity will be calculated from the authorised dimensions of the compacted layer.

The tendered rates shall include full compensation for excavating the material as if in soft material for loading, transporting for the free-haul distance, off-loading, spreading, watering, mixing, breaking down and compacting the layer."

PSDM 8.3.6 Extra over items 8.3.4 and 8.3.5 for excavating and breaking down material in

Replace the heading of this item with the following:

"PSDM 8.3.6 Extra over items 8.3.4, 8.3.5 and 8.3.16 for excavating and breaking down material in"

Replace the words "items 8.3.4 and 8.3.5" with the words "items 8.3.4, 8.3.5 and 8.3.16".

PSDM 8.3.12 Overhaul

Replace this item with the following:

"PSDM 8.3.12 Overhaul

- (a) Limited overhaul Unit: m³
- (b) Long overhaul Unit: m³-km

Overhaul will be paid in accordance with item 8.3.6 of SANS 1200 D."

PSDM 8.3.16 Gravel surface layer

Replace the contents of this item with the following:

"The unit of measurement shall be the cubic metre of gravel surface layer and the quantity will be determined from the authorised dimensions of the compacted layer.

The tendered rate shall include full compensation for excavating the material as if in soft material, for loading and transporting the material for the free-haul distance, off-loading, spreading, breaking down, watering, mixing and compacting the material."

Add the following items:

"PSDM 8.3.17 Extra over items 8.3.4, 8.3.5 and 8.3.16 for obtaining material from commercial sources Unit: m³

The tendered rate shall include full compensation for the additional cost of finding a suitable source of material, for procuring the material and paying all royalties or other charges to the owner of the source, for transporting the material to the point of use regardless of the distance hauled and for excavating in intermediate, hard or boulder material as required.

Items PSDM 8.3.6, PSDM 8.3.12 and PSDM 8.3.14 do not apply to material obtained from commercial sources.

PSDM 8.3.18 Temporary Protection of Services Unit : m,No

The rate for each service will cover the cost of location etc. as specified in PSDM 5.1.3.2 liaison with the relevant local authority, delays and disruptions of the progress of the work due to the existence of the service and dealing with the service during the construction period to maintain an uninterrupted continuation of the specified service. The rate must also cover the total cost of all repairs required should any of the services be damaged.

Distinction will be made between services that will be exposed during excavation for roadworks and unexposed services that will be at risk of damage during the execution of roadworks. Drawing DM3 indicates the limits in which the service must fall to qualify for payment.

Cables so grouped that the cross section containing them has a horizontal dimension not exceeding 250 mm will be regarded as one service.

PSG CONCRETE (STRUCTURAL)

PSG 3 MATERIALS

PSG 3.2 CEMENT

PSG 3.2.2 Alternative types of cement

Replace the contents of this subclause with the following:

"Only CEM I 42,5 (Portland cement) or CEM II/A-V 42,5 (Portland fly ash cement) according to (SANS 50197-1), may be used. The cement may not consist of more than 20% siliceous fly ash blended with the OPC (Ordinary Portland Cement). Should the Contractor wish to use any other type of cement, he shall obtain the Engineer's prior written approval (see 8.1.3.2 and 8.1.3.3)."

PSG 3.2.3 Storage of cement

Add the following:

"Cement shall not be stored for longer than 12 weeks without the Engineer's permission."

PSG 3.4 AGGREGATES

PSG 3.4.3 Storage of aggregates

Add the following:

"When aggregates of different chloride content are stored on the site, their use in the various classes of concrete shall be strictly controlled."

Add the following subclause:

"PSG 3.4.4 Aggregate of dolomitic origin

Aggregates for structural concrete of dolomitic origin. The quantity of insoluble matter in respect of concrete made with aggregates of dolomitic origin, determined according to the method described in SANS 677, Appendix C, shall not be more than 15%."

Add the following subclauses:

"PSG 3.9 WATERSTOPS

PVC waterstops shall comply with the requirements of CKS 389.

PSG 4 PLANT

PSG 4.1 GENERAL

PSG 4.5 FORMWORK

PSG 4.5.1 Design

Add the following:

"All formwork or scaffolding required for any part of the works shall be designed by the Contractor, and before commencing with the erection of any formwork or scaffolding, the Contractor shall submit the methods he proposes to use to the Engineer for approval. The Engineer has the authority to order alterations to the design or the sizes of any part of the formwork or scaffolding. The Contractor shall check the safety and suitability of all such alterations. The fact that the Engineer has approved or altered any part of the formwork or scaffolding shall not be construed as relieving the Contractor of his responsibility

with regard to the strength and stability of the formwork or scaffolding."

PSG 4.5.3 Ties

Add the following:

"No plugs, bolts, ties or clamps of any description used to hold the formwork will be allowed to project into or through the concrete unless expressly approved by the Engineer.

Only approved ferrules consisting of solid rods (that remain embedded in the concrete) and with removable ends shall be used to hold the formwork of the walls. The removable tie-rod ends shall facilitate removal without damage to the concrete, and no permanently embedded parts of such tie-rods shall have less than 50 mm of cover to the finished concrete surface.

The cavities left in the concrete when the tie-rod end cones are removed shall be soundly caulked with a cement mortar to which an approved shrinkage-reducing agent has been added, and shall be neatly finished to a smooth surface uniform with that of the surrounding concrete.

The cost of supplying special tie-rods as well as the filling of cavities left by the tie-rod cones shall be included in the rates tendered for formwork under the appropriate payment items.

On no account shall formwork be secured to reinforcing bars.

The Contractor may submit an alternative method statement for plugging of ferrule system for approval prior to commencement of construction."

PSG 5 CONSTRUCTION

PSG 5.1 REINFORCEMENT

PSG 5.1.2 Fixing

Add the following:

"The Engineer will inspect the reinforcing after it has been fixed in place, the formwork has been cleaned, cover blocks have been positioned, and before concreting commences.

Welding of reinforcing steel will not be permitted."

PSG 5.1.3 Cover

Add the following:

"The distance between pipes in the concrete and the reinforcing steel shall nowhere be less than 40 mm or 5 mm plus the maximum size of the coarse aggregate, whichever is the largest, unless otherwise specified on the drawings."

PSG 5.2 FORMWORK

PSG 5.2.1 Classification of finishes

(c) Special

Add the following:

"This finish is obtained by first giving the surface a smooth finish with the joints between formwork panels forming an approved regular pattern suitable for the appearance of the structure. All projections shall then be removed, irregularities repaired, and the surface rubbed or otherwise treated until it is smooth with an even texture, appearance and colour.

If the finish of exposed surfaces does not comply with the requirements for uniformity of the texture and

appearance, the Contractor shall, when instructed to do so by the Engineer, rub down the exposed surfaces of the entire structure or any part thereof as specified below, entirely at his own cost. All repairs must be completed before the rubbing commences.

The surface shall be saturated with water for at least one hour. The initial rubbing of the face shall be carried out with a medium coarse carborundum stone together with a small amount of mortar of the same cement/sand ratio as the concrete being repaired. Rubbing shall continue until all form marks, projections and irregularities have been removed and a uniform surface has been obtained. The paste produced by the rubbing shall be kept in place. The final rubbing shall be carried out with a fine carborundum stone and water. This rubbing shall continue until the entire surface has a smooth, even texture and is uniform in colour. The surface shall subsequently be washed with a brush to remove surplus paste and powder."

PSG 5.2.2 Preparation for formwork

Add the following:

"Construction joints shall be positioned as shown on the drawings."

PSG 5.2.5 Removal of formwork

Add the following subclause:

"PSG 5.2.5.7 The Contractor shall make provision for the continued support of beams and slabs while the formwork is being removed and/or for back propping of beams and slabs."

PSG 5.3 HOLES, CHASES AND FIXING BLOCKS

Add the following:

"Cover blocks for reinforcing and fixtures may be placed into the concrete provided that neither the strength nor any other desirable characteristic (such as the appearance) of the concrete section is affected or impaired in the opinion of the Engineer.

The holes or cavities left by ferrule heads in the concrete of water-retaining structures shall be filled with an approved non-shrink grout applied strictly in accordance with the manufacturer's specifications."

PSG 5.4 PIPES AND CONDUITS

Add the following:

"All pipes passing through concrete floors, walls or slabs shall be cast into a concrete member simultaneously with the casting of the member. Openings for pipes shall only be left in concrete members when so directed by the Engineer or when shown on the drawings. Pipes shall be installed in such openings according to the details shown on the drawings.

If watertightness is a requirement where pipes are cast into walls, floors and slabs, the Contractor shall ensure watertightness where smooth-surfaced pipes are used by using an approved method such as tape wrapping the pipes prior to casting in. The cost of such method will be deemed to be included in the rates tendered for item PSG 8.14."

PSG 5.5 CONCRETE

PSG 5.5.1 Quality

PSG 5.5.1.5 Durability

The exposure conditions of the concrete are classified as "severe".

PSG 5.5.1.7 Strength concrete

Add the following:

"The concrete mixes shall be designed by a Registered Engineer with the designation PrEng (Professionally Registered Engineer) with the Engineering Council of South Africa (ECSA) or a SANAS accredited laboratory. Proof of the mix designs must be submitted with the supporting letter from the registered personnel with their ECSA registration number, and/or registration certificate."

PSG 5.5.1.7 Strength concrete

Add the following:

"The concrete mixes shall be designed by a Registered Engineer with the designation PrEng (Professionally Registered Engineer) with the Engineering Council of South Africa (ECSA) or a SANAS accredited laboratory. Proof of the mix designs must be submitted with the supporting letter from the registered personnel with their ECSA registration number, and/or registration certificate."

The minimum cement content shall be 325 kg/m³. The maximum water:cement ratio shall be 0,55 for ordinary Portland cement (OPC), CEM I 42,5 according to SANS 50197-1, or 0,50 for ordinary Portland cement blended with pulverized fuel ash (PFA).

The cement content shall not exceed 400 kg/m³ OPC in reinforced concrete or 450 kg/m³ OPC blended with PFA in reinforced concrete."

PSG 5.5.3 Mixing

PSG 5.5.3.2 Ready-mixed concrete

Add the following:

"Ready-mixed concrete may be used on the Site. The Contractor shall take samples for testing from every load delivered to the Site."

PSG 5.5.5 Placing

Add the following:

"Concreting of the wall between horizontal construction joints shall be carried out in both directions from a point on the wall in order to close the gap with fresh concrete."

PSG 5.5.7 Construction joints

Add the following:

"Horizontal construction joints are permitted in structure walls in positions indicated on the drawings or approved by the Engineer. Vertical construction joints in the walls are subject to the written approval of the Engineer and the cost of all such vertical or horizontal construction joints will be deemed to be included in the rates for cast-in-situ concrete. This also applies to the preparation of concrete to form construction joints in flume walls as specified on the drawings."

The construction joints in water-retaining structures shall be made strictly in accordance with the details shown on the drawings. The joints between screeds and concrete floors shall be regarded as construction joints and the surface of the floor shall be prepared as described for construction joints.

Should the Contractor's method of construction necessitate the placing of a construction or other joint in a position not shown on the drawings, such method of construction and position of the joint shall be approved by the Engineer in writing. The cost of such joint shall be included in the tendered rates and shall include scabbling of the concrete where steel reinforcement is continuous.

The walls shall be cast in lifts of a height that permits each lift to be poured without interruption in one continuous operation during normal working hours.

It is the Contractor's responsibility to ensure that construction joints are watertight. The Contractor's proposed method for ensuring the watertightness of such joints shall be submitted to the Engineer for his approval.

For construction joints at kickers (CJ) all additional costs for concrete, preparation, etc will be deemed to be included in the rates tendered for concrete in walls or sides and kicker joints or construction joints will not be measured separately."

PSG 5.5.8 Curing and protection

Add the following:

"The curing methods of retaining the formwork in place or covering with a waterproof membrane are strongly recommended. Concrete will not be paid for unless properly cured and proof of curing is continuously visible on site."

PSG 5.5.10 Concrete surfaces

Add the following subclauses:

"5.5.10.4 Where the surfaces of the concrete are to be additionally hardened or protected, the positions of such surfaces and the method to be used will be shown on the drawings and will be scheduled. Materials or products with a ferrous content will not be allowed."

"5.5.10.5 Floor slabs and screeds for settling tanks

(a) Surface of floor slab below screed

The top surface of the floor slab is to have a finish which is rough enough for bonding of the screed. This finish and the preparation thereof is to be discussed with the Engineer before the floor slab is cast.

All laitance on the surface of the slab must be removed completely to expose the coarse aggregate by means of scrabblers, abrasive blasters, hard brooms or a high pressure water jet, immediately after concrete has set.

All joints shall be sealed in the manner shown on the drawings. All dust, debris, etc. must be removed immediately prior to the application of the bonding agent and screed.

(b) Materials

Cements as described in PSG 3.2.2 shall be used.

Coarse aggregate maximum size: 19 mm for slabs and 10mm for screeds
28-day characteristic strength: 30 MPa.

A plasticizer approved by the Engineer shall be used to reduce the water content of the mix to an absolute workable minimum.

The mix design shall be submitted to the Engineer for approval.

(c) Placing of screed

All surface water shall be removed after which Sikafloor®-161 slowset bonding agent or similar approved shall be applied strictly according to the manufacturer's specifications. The screed shall be placed according to the recommendations and/or specifications of the manufacturer of the bonding agent.

The screed shall be placed, spread and compacted in one layer and care shall be taken to obtain

maximum compaction. After the screed has been compacted and before the surface is power floated, angle irons fixed to the mechanical equipment shall be used to finish off the screed to the correct levels.

Power floating shall not commence until such time as the screed surface has lost its sheen and barely shows footprints. All laitance on the surface of the screed resulting from compaction shall be struck off prior to power floating. Too much floating causing excessive cement-water paste to surface, shall be avoided.

Curing shall commence as soon as finishing operations have been completed and shall be continued for at least seven (7) days. The method of curing shall be by means of a peripheral pipe directly next to the inside face of the wall with water running down the slope of the floor to the centre cone. This shall be discussed with the Engineer. Any alternative curing method must be submitted to the Engineer for approval.

(d) Joints

The joints in screeds shall be constructed according to the details shown on the drawings and must in all cases be aligned with the joints in the floor slab below.

(e) Surface finish of screeds

The finishing-off of the screed shall be done in conjunction with the mechanical contractor to ensure that the surface fits the mechanical equipment. The maximum allowable deviation of the floor from the design level is ± 3 mm."

PSG 5.5.11 Watertight concrete

Add the following:

"The minimum cement content shall be 325 kg/m^3 . The maximum water:cement ration shall be 0,55 for ordinary Portland cement (OPC), CEM I 42,5 according to SANS 50197-1, or 0,50 for ordinary Portland cement blended with pulverized fuel ash (PFA).

The cement content shall not exceed 400 kg/m^3 OPC in reinforced concrete or 450 kg/m^3 OPC blended with PFA in reinforced concrete."

Add the following subclauses:

"PSG 5.5.16 Applied loads

No crushed-stone covering or any other loads shall be placed on the roof of the structure before the concrete has attained its design strength, unless approved supports are provided.

PSG 5.5.17 Coatings

(a) Algae-resistant coating on surfaces of settling tank launder channels

(i) General

Concrete launder channels are attacked over a period of time by the acids generated in the purification processes. This leads to loss of cement with consequent increase in roughness by exposure of the aggregate. Phosphates in the water and the action of sunlight encourage the growth of algae. Removal of algae is a costly and continuous process, hence it is preferable to provide a smooth surface to minimise build-up of algae growth.

(ii) Surface preparation

For immersion or other heavy duty applications, laitance shall be totally removed by water blast cleaning, with abrasive injection, or by mechanical scabbling of the surface, or by acid pickling, followed by very

thorough washing with potable water.

For coatings of low water permeability, such as solvent borne epoxies, vinyls and chlorinated rubber, the moisture content of the concrete or plaster shall be not more than an indicated 5% when tested with an approved electrical conductivity meter, designed for use on concrete or plaster (such as the Delmhorst meter). The pins of the meter shall penetrate the concrete or plaster to a depth not less than 5 mm.

The first coat of the coating system may require thinning with the manufacturer's recommended solvent to assist penetration of the substrate.

The surface shall be dry before coatings are applied.

(iii) Application

Apply epoxy tar primer such as Ivory 310P, thinned when necessary in accordance with the manufacturer's instructions to obtain adequate penetration.

Apply a suitable scraper coat such as Ivory 319TAQ to obtain a smooth finish followed by a suitable solvent-free epoxy tar coating such as Ivory 310 to give a coating thickness of 250 micrometres and finally a vinyl anti-fouling paint at the coverage recommended by the manufacturer.

NOTE: Since an anti-fouling paint functions by leaking toxic materials into the water, it has a limited effective life, dependent on flow rate. The top coat must therefore be renewed when its efficacy starts to diminish.

(b) Abrasion-resistant coating on concrete surfaces

(i) General

Concrete structures subject to heavy abrasion and scouring action shall be coated with an abrasion-resistant coating based on solvent-free, two-component polyurethane hybrid.

For immersion or other heavy-duty applications, laitance shall be totally removed by water blast cleaning, with abrasive injection, by mechanical scabbling of the surface or by acid pickling followed by very thorough washing with potable water.

For coatings of low water permeability, such as solvent-borne epoxies, vinyls and chlorinated rubber, the moisture content of the concrete or plaster shall be not more than an indicated 5% when tested with an approved electrical conductivity meter, designed for use on concrete or plaster (such as the Delmhorst meter). The pins of the meter shall penetrate the concrete or plaster to a depth not less than 5 mm.

The first coat of the coating system may require thinning with the manufacturer's recommended solvent to assist penetration of the substrate.

The surface shall be dry to a depth of not less than 5 mm.

Alternatively, when agreed by the supplier of the material, the surface may be treated with a chemical water scavenger, supplied by the manufacturer of the coating material.

The clean, dry surface shall be primed with the manufacturer's recommended primer for concrete, applied in accordance with the manufacturer's recommendations.

Blowholes in the concrete shall be filled by application of the manufacturer's scraper coat.

(ii) Materials

(1) Primer

The primer shall be a suitable primer for concrete plus scraper coat supplied by the manufacturer of the coating material and shall be applied at the manufacturer's specified thickness and shall be overcoated

within the specified overcoating time.

(2) Coating material

The coating material shall be a solvent-free, two-component polyurethane hybrid based on polyether type polyol and aromatic isocyanate. The cured coating shall comply with the following requirements:

The coating or lining thickness shall not be less than 3 mm.

Tensile strength at 3 mm thickness (ASTM D 638) - not less than 15 MPa

Adhesion to correctly primed steel at 1 mm thickness (SABS Method 776) - not less than 10 MPa

Impact resistance direct at 1 mm thickness - (ASTM G 14) - not less than 8 joules

Dielectric strength - not less than 10 kV/mm

Elongation at break at 3 mm thickness - not less than 25%

Compressibility - not less than 25 MPa

Surface hardness of 5 mm thick sample - not less than 60 nor greater than 80 Shore 'D'.

Water vapour permeability at 1 mm thickness - not greater than 0,5g/24h/m²/mm

Cathodic disbonding - when tested in accordance with ASTM G8 Method A, for 60 days, the disbonded area shall not exceed 500 mm².

Where it is not practical to apply the coating using a two-component spray gun, the manufacturer's brushing grade may be used, provided that the completed coating meets all the requirements of the specification.

(iii) Requirements for the finished coating

The coating shall be smooth, glossy, free from bubbling, excessive orange peel or brushmarking and from excessive runs and sags.

The dry film thickness shall be not less than 3 mm.

The edge of the coated area shall be neatly finished. No overspraying or splashes shall be permitted on surfaces adjacent to the coated surface.

The coated surface shall be free from electrical insulation defects when tested with a high voltage holiday detector, earthed to the concrete substrate by wet sponge contact and operated at 15 kV potential.

(iv) Application

(1) Prepare surface as specified above.

(2) Prime the surface with the coating manufacturer's primer for concrete.

(3) Within the minimum and maximum overcoating time interval specified for the primer by the manufacturer apply one coat or two coats by means of an airless spray machine fitted with metering pumps that dispenses the correct mix ratio at the spray head. The machine shall be maintained in a clean condition and in good working order. The Contractor may be required to demonstrate to the Engineer that the machine is delivering components in the correct mixing ratio."

PSG 5.5.18 Pipes and conduits

All pipes passing through concrete floors, walls or slabs shall be cast into the concrete member simultaneously with the casting of the member. Openings for pipes shall only be left in the concrete members when so directed by the Engineer or when shown on the drawings. Pipes shall be installed in such openings according to the details shown on the drawings.

If watertightness is a requirement where pipes are cast into walls, floors and slabs, the Contractor shall ensure watertightness where smooth-surfaced pipes are used by using an approved method such as tape wrapping the pipes prior to casting in. The cost of such method will be deemed to be included in the rates tendered for in item PSG 8.13.

PSG 5.5.19 Soilcrete

Where soilcrete is specified for the soilcrete shall comply with the requirements of subclause PSDB 3.5(d) of section 1200 DB as amended and shall be placed as specified in the subclause.

PSG 5.5.20 Brickwork

Brickwork shall be carried out as specified for manholes in subclause 5.6.4 of 1200 LD using bricks conforming to the requirements for bricks in subclause 3.5.1 of 1200 LD.

PSG 5.5.21 Plasterwork

Plasterwork shall consist of a single coat, comprising one application of a 1:6 cement:sand mixture with a woodfloat finish. The thickness of the plaster shall be between 13 and 20 mm. All plaster shall be finished smooth, shall be plumb and corners shall be rounded and square.

PSG 6 TOLERANCES

PSG 6.2 PERMISSIBLE DEVIATIONS

PSG 6.2.3 Specified permissible deviations

Add the following:

"Degree-of-accuracy II is applicable.

Every specified permissible deviation is binding in itself. The cumulative effect of permissible deviations will not be considered. The maximum permissible vertical deviation is subject to the other permissible deviations."

Replace subclause 6.2.3(d)(5) with the following:

"Vertically, per metre of height.....
subject to a maximum of"

Permissible deviation		
Degree of accuracy		
III	II	I
mm	mm	mm
5 50	3 30	2 10

PSG 7 TESTS

PSG 7.1 FACILITIES AND FREQUENCY OF SAMPLING

PSG 7.1.1 Facilities

Add the following:

"The Contractor shall provide sufficient storage capacity for the concrete cubes and shall arrange to have them tested by an approved laboratory.

The cubes will be cast in standard 150mm x 150mm x 150mm cube mould and placed in a shade for 24hr prior to placing them in an onsite water bath for a maximum of 72hr before delivering them to a SANS accredited laboratory or the laboratory in use by Client and the Engineer.

The cost of all testing, including the cost of sampling, storage and transport of samples shall be included in the rates tendered for concrete work."

PSG 7.3 ACCEPTANCE CRITERIA FOR STRENGTH CONCRETE

Add the following:

"Test results obtained from the supplier of ready-mixed concrete will not be accepted for evaluation in terms of subclause 7.3, but samples for testing shall be taken of such concrete at the point of placing."

Add the following subclause:

"PSG 7.3.6 Testing for watertightness

Water for testing shall be provided by the Contractor and he shall be responsible for providing all necessary equipment that may be required for filling the structures.

The structure shall be filled with water at a uniform rate not exceeding 2,0 m in 24 hours until the top water level has been reached. The water level will then be carefully noted and recorded by the Engineer in relation to a fixed benchmark, and shall be maintained by the addition of further water for a stabilizing period to permit complete absorption of water by the concrete.

The stabilizing period may be 7 days for a maximum design-crack width of 0,1 mm or 21 days for 0,2 mm or greater. After the stabilizing period, the level of the liquid surface shall be recorded at 24-hour intervals for a test period of 7 days. During this 7-day test period the total permissible drop in level, after allowing for evaporation, shall not exceed 1/500th of the average water depth of the full tank, or 10 mm.

The evaporation shall be measured by the mean drop in level caused by the evaporation of the water in three flat containers floating in the water being recorded.

In the event of appreciable leakage being evident at any stage of the filling or testing or in the event of the Engineer considering the final degree of watertightness to be unsatisfactory, the Contractor when ordered by the Engineer shall discontinue such filling or testing and shall, at his own expense, take approved steps immediately to rectify the leakage, until a satisfactory test is obtained, which shall prove to the Engineer that a sufficient degree of watertightness has been obtained.

The costs of emptying a water-retaining structure which cannot be drained shall be borne by the Contractor. The water shall be discharged in a manner approved by the Engineer and shall be such that the Employer can utilise the water if he so desires.

The water shall not be used as a medium for additives to effect remedial work or to stop leaks.

The costs of retesting the structure for watertightness shall be borne by the Contractor."

PSG 8 MEASUREMENT AND PAYMENT

PSG 8.1 MEASUREMENT AND RATES

PSG 8.1.1 Formwork

Delete "or splays over 20 mm x 20 mm" from the first line of paragraph 8.1.1.2.

Add the following to paragraph 8.1.1.2:

"Splays up to and including 25 mm x 25 mm will not be measured separately and will be deemed to be included in the formwork costs."

Add the following paragraphs:

- "8.1.1.7 For construction joints at kickers , all additional costs for formwork to edges up to 300 mm high will be deemed to be included in the rates tendered for vertical formwork to sides of walls and will not be measured separately in narrow widths.
- 8.1.1.8 No formwork will be measured to edges of blinding layers under structures, and the cost thereof (if needed) will be deemed to be included in the rates tendered for concrete in blinding layers.
- 8.1.1.9 Back-shuttering or formwork to top revealed surfaces of sloping or conical formwork will only be measured to surfaces of over 40° and up to 85° to the horizontal.
- 8.1.1.10 Formwork to horizontal surfaces in pump stations, valve chambers, manholes or sumps can either be removed through the manhole cover opening or the Contractor may use permanent formwork at his own cost as no claims in this regard will be considered."

PSG 8.1.2 Reinforcement

Replace the contents of this subclause 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 kilogram of fabric reinforcement in place, and the quantity shall be calculated from the net area covered by the mesh, excluding overlaps.

Clips, ties, separators, stools and other steel used for positioning reinforcement will not be measured, unless these are shown on the bending schedules.

The tendered rate shall include full compensation for the supply, delivery, cutting, bending, welding, placing and fixing of the steel reinforcement, including all tying wire, stools, supports and waste."

PSG 8.1.3 Concrete

Delete ", or the plan size of the excavation where additional excavation is provided to facilitate erection of forms" from the second line of paragraph 8.1.3.1(c).

PSG 8.3.2 High-Tensile Welded Mesh

Replace "Unit : m²" with "Unit : kg".

PSL MEDIUM-PRESSURE PIPELINES

PSL 3 MATERIAL

PSL 3.1 GENERAL

Add the following paragraphs:

"Each type of pipe delivered to the Site shall be of a standard length corresponding to the standard lengths offered by the pipe manufacturer in his catalogue, with a maximum permissible variation in length of $\pm 2\%$.

A pipe that is shorter or longer than the defined standard will be rejected by the Engineer, except when such non-standard lengths are required in terms of the Contract and have been specifically manufactured or cut as such by the pipe manufacturer or supplier."

PSL 3.7 OTHER TYPES OF PIPES

PSL 3.7.1 uPVC pipes

Add the following:

"Pipes used in villages shall be class 6 pipes and transmission pipes shall be class 12."

PSL 3.7.2 Polyethylene pipes

Replace the contents of this subclause with the following:

"Polyethylene pipes shall be HDPE type IV pipes, butt welded as per SABS 0268/SANS 10268 – Part 1, and shall comply with SABS ISO 4427 PE 100, PN 12,5 or as scheduled."

PSL 3.8.3 Flanges and Accessories

Replace "..., appropriate to the class of pipe specified, ..." with "..., and shall unless scheduled otherwise be class 16 (SANS 1123 table 1600) drilling, ...":

PSL 3.9.6 Corrosive soil

Add the following:

"Where shown on the Drawings, steel pipes in contact with corrosive soil shall be wrapped with Densopol 80 HT or an equivalent approved product, strictly in accordance with the manufacturer's instructions."

PSL 3.10 VALVES

Replace the contents of this subclause with the following:

"Valves shall comply with the following requirements:

- (a) They shall open/close clockwise and shall have a non-rising spindle and handwheel.
- (b) They shall be class 16 valves complying with SANS 664.
- (c) The flanges shall comply with the requirements of SANS 1123 table 1600."

Add the following subclause

PSL 5.11 PRESSURE REDUCING VALVES, CHAMBER AND FITTING

"All fittings included in the pressure reducing valves shall comply with the specifications as per mentioned in drawing P0030-CIV-WAT-0203."

PSL 5 CONSTRUCTION

PSL 5.6 VALVE AND HYDRANT CHAMBERS

PSL 5.6.1 General

Replace the words "drawing L-1" in the second line with "the Drawings".

PSL 5.6.2 Construction of chambers

Replace the words "drawing L-1, L-2 and L-3" in the fourth line with "the Drawings".

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.2 SCHEDULED ITEMS

PSL 8.2.1 Supply, lay and bed pipes complete with coupling

Add the following:

"This will include skids, steel straps, malthoid packings, cement, bentonite, grout, complete with joints and testing where specified in the Schedule of quantities."

PSL 8.2.5 Inspection chambers etc.....unit: No

Replace the phrase "increments of 0.5m" with "increments of 1m" on the first paragraph.

PSL 8.2.11 Anchor blocks/Thrust blocks and pedestals

Insert "concrete" before "and" in the last line of the last paragraph.

Add the following:

"The tendered rates shall also include the wrapping of uPVC pipes and fittings with Densopol 80 or a similar approved material where the pipes and fittings come into contact with concrete."

PSL 8.2.13 Valve and Hydrant Chambers etc.

Add the following:

"This will include, but is not limited to, the supplying, laying, jointing and bedding of pipes, fittings, specials and valves within the chambers as per the drawings."

Add the following:

PSL 8.2.16 Connection to existing main supply pipe Unit: number

The tendered rate(s) shall include full compensation for all material, labour, plant, equipment, managing, programming and liaising costs for the various fittings, specials, etc, to tie-in to the existing main supply line.

PSL 8.2.17 Supply of chlorination tank with all associated dosing fittings & pipework.....Unit: No.

The tendered rate shall include full compensation for all materials, labour plant, equipment, supply and transportation for the chlorination tank and all its associated pipework's and dosing fittings.

PSLB BEDDING (PIPES)

PSLB 2 INTERPRETATIONS

PSLB 2.3 DEFINITIONS

Amend the following:

"Main Fill

Delete "150 mm" in second line and substitute "300 mm"

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

Replace the contents of this subclause with the following:

"Selected granular material shall have a PI not exceeding 6 and shall be free from sharp-edged particles exceeding 19 mm."

PSLB 3.2 SELECTED FILL MATERIAL

Add the following:

"Selected fill material used for bedding shall, where indicated on the Drawings be stabilized with 5% cement as specified under subclause PSDB 3.5(c)."

PSLB 3.3 BEDDING

Add the following:

"uPVC and HDPE pipes are deemed to be flexible pipes for the purposes of this subclause.

The Contractor will be required to carry out his/her own quality control testing of the material to ensure that it meets the bedding sand requirements and complies with this specification at all times. At least one grading analysis shall be carried out for every 100 lineal metres of bedding placed. The results of these tests shall be forwarded to the Engineer within 24 hours of completion of the test. Should the material not comply with the specification, the Contractor shall remove and replace it with approved material at his/her own cost.

Depending on the actual material supplied by the Contractor, the moisture content may be critical to enable satisfactory placing and compaction and the Contractor will be deemed to have allowed in his tendered rate for any and all adjustments required to the moisture content of the bedding material at all times.

Items have been provided in the Bill of Quantities for the provision of approved bedding sand from approved Commercial or other approved off-site sources for bedding sand.

No extra payment will be made for forming or filling joint holes (pockets)."

PSLB 3.4 SELECTION

PSLB 3.4.1 Suitable material available from trench excavation

Replace the words "(but is not required)" in the fifth line with the words "(at his own cost)".

PSLB 5 CONSTRUCTION

PSLB 5.1 GENERAL

"Add the following item:

PLSB 5.1.4 Compacting

Replace "90%" with "90% (100% for sand)".

PSLB 5.3 PLACING AND COMPACTING OF FLEXIBLE PIPES

PSLB 5.3.a Bedding Cradle

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

"The pipes shall be bedded on a minimum 200 mm thick layer of compacted granular bedding material on which a 100 mm thick layer of uncompacted granular bedding material has been placed and spread. Loose granular bedding material lying next to the pipe shall be placed into the haunch area and compacted with suitable hand tools, and additional selected granular material shall be added and compacted in layers up to the midpoint of the pipe diameter in the vertical plane. The remainder of the bedding cradle shall be placed in layers up the sides of the pipe, each layer being compacted until a level of 300 mm above the crown of the pipe is reached.

All joint (fox) holes shall be filled with bedding material."

PSLB 5.3.b 200 mm Selected fill blanket

Amend the following:

Delete "200 mm" from the title.

PSLB 6 Tolerances

PSLB 6.1 Moisture content and density

Add the following:

"The permissible deviations applicable are to be those for Degree of Accuracy II class of work."

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.1 PRINCIPLES

PSLB 8.1.3 Volume of bedding materials

Add the following:

- a) The volume of bedding material will be measured net, excluding the volume occupied by the pipe.
- b) The rate for bedding and backfill material from insitu material shall include the selection and sieving of the material.
- c) No additional payment will be made for bedding material placed in joint (fox) holes."

PSLB 8.1.5 Disposal of displaced material

Replace the contents of this subclause with the following:

"Material displaced by the pipeline and by imported material from sources other than trench excavation, shall be used as fill or when of poor quality disposed of at an approved site furnished by the Contractor. No haulage is payable for such material."

PSLB 8.1.6 Free-haul

Delete the words "of 0,5 km" in the first line of this subclause.

PSLE STORMWATER DRAINAGE

PSLE 3 MATERIALS

PSLE 3.1 CULVERT UNITS AND PIPES

- (d) Skewed ends

Add the following:

"Skewed ends for pipe culverts may be cut on Site."

PSLE 3.4 MANHOLES, CATCHPITS, AND ACCESSORIES

PSLE 3.4.1 Bricks

Add the following:

"Bricks shall be quality FBSE30 TO SABS 227-1996 with water absorption < 14% and efflorescence <10.
All brick work shall be English bond

PSLE 5 CONSTRUCTION

PSLE 5.2 BEDDING AND LAYING

PSLE 5.2.2 Pipe culverts

Add the following:

"The class of bedding required for the various pipe culverts is shown on the Drawings."

PARTICULAR SPECIFICATION

PD BUILDING WORK

CONTENTS

PD 01	SCOPE
PD 02	BRICKWORK, PLASTER WORK AND FLOOR SCREEDS
PD 03	DOORS AND WINDOWS
PD 04	GLAZING
PD 05	CARPENTRY AND JOINERY
PD 06	ROOF SHEETING AND ACCESSORIES
PD 07	ELECTRICAL WORK
PD 08	PLUMBING
PD 09	PAINTING
PD 10	MEASUREMENT AND PAYMENT

PD 01 SCOPE

This is a Particular Specification and covers the various construction activities associated with the erection of buildings which form part of this Contract.

Building work shall be carried out in accordance with the National Building Regulations, SABS 0400, the applicable clauses of the SABS Standardised Specifications and the information contained in this Specification.

Work appurtenant to the erection of buildings such as earthworks, concrete work, structural steelwork, etc, shall be carried out as specified in the appropriate Work Specifications and will be measured and paid for under those Specifications.

PD 02 BRICKWORK, PLASTER WORK AND FLOOR SCREEDS

PD 02.1 MATERIALS

(a) Bricks

Bricks shall comply with SABS 227 and shall be of the class scheduled or shown on the Drawings.

Satisfactory proof of the load-bearing capacity of the bricks offered shall be submitted before deliveries are made to the Site.

Air bricks shall be well-burnt terracotta and shall be free from cracks and blemishes and lined with copper mosquito gauze.

Three samples of each type of brick shall be submitted to the Engineer for approval. All subsequent deliveries shall be of a standard equal to or better than that of the approved samples.

(b) Cement

Cement shall comply with the requirements of SABS 471 and shall be stored under cover. The use of Portland Blast-furnace Cement (PBFC) which complies with the requirements of SABS 626 will only be allowed if approved by the Engineer.

(c) Aggregate

Fine aggregate shall be naturally occurring sand or shall consist of crushed rock or gravel, and shall be hard, clean and free from adherent coatings or other deleterious matter. Sand for plaster and mortar shall comply with the requirements of SABS 1090, whereas the aggregates for normal and granolithic floor screeds shall comply with the requirements of BS 1199 and BS 1201 respectively.

(d) Water

Water shall be clean and free from clay, silt, oil, acid, alkali, organic or other matter which would impair the required strength and durability of the mortar, plaster or floor screed.

(e) Wall ties

Wall ties shall be of the galvanised, crimped, single-wire type with a 3,5 mm diameter, and shall comply with the requirements of SABS 28.

(f) Damp-proof sheeting

Damp-proof sheeting shall comply with SABS 248, type FV for fibre felt, or SABS 952, type B for embossed polyethylene sheeting.

PD 02.2

CONSTRUCTION OF BRICKWORK

(a) Cement mortar

Cement mortar shall, unless otherwise specified, consist of 1 part of Portland cement to 4 parts of sand by volume for normal brickwork and 1 part of Portland cement to 3 parts of sand by volume for reinforced brickwork. The ingredients for cement mortar shall be measured in proper gauge boxes on a boarded platform and thoroughly mixed. Alternatively, mixing may be by means of an approved mechanical batch mixer. Only when the dry ingredients have been thoroughly mixed and a mixture of uniform colour has been obtained may the water be added in sufficient quantity to obtain mortar with the required consistency.

Cement mortar shall be used within two hours of adding water to the mix and shall not be used after two hours or if it has begun to set. Mortar shall be turned over frequently until it is used to prevent it from setting.

(b) Brickwork

Dimensions of all the brickwork shall be set out and built as shown on the Drawings. Bricks shall be kept wet before laying and the top of brickwork shall be wetted before any further bricks are laid. Bricks shall be well buttered with mortar before being laid and all joints shall be thoroughly flushed up as the work proceeds. All joints to face brickwork shall be neatly made and key drawn with a 6 mm key.

Brickwork shall be carried up in a uniform manner with no portion being raised more than 1 m above an adjacent portion. All perpends, quoins, etc, shall be kept strictly true and square and the whole properly bonded together.

Brickwork shall be built in stretcher bond or english bond as shown on the Drawings, and bats shall not be used except where required for the bond. All joints shall be 10 mm wide and four courses shall measure 340 mm.

Brickwork for cavity walls and solid walls built in stretcher bond shall be tied with wall ties placed not more than one metre apart in every third course, and shall be

staggered vertically. At openings, the ties shall be positioned not more than 300 mm apart along the periphery of the opening and 150 mm from the opening.

Face brickwork shall be kept perfectly clean and rubbing down of the brickwork shall not be allowed. Scaffold boards shall be turned back during heavy rain to avoid splashing. Soiled brickwork shall be cleaned at the Contractor's expense, and the cleaning method shall be approved by the Engineer.

(c) Reinforced brickwork

Brickwork over door and window openings shall be reinforced with steel rods, welded or expanded mesh, etc. Reinforcement shall be placed in each course of brickwork for a minimum of 4 courses or as shown on the Drawings. Reinforced brickwork shall continue at least 300 mm on each side of the openings.

Brick lintels shall be built upon rigid temporary supports left in position for not less than 7 days after brick-laying. Prestressed concrete lintels may be used where approved by the Engineer.

(d) Key for plaster

Joints of all brickwork receiving plaster shall be raked out, or the brick surfaces shall otherwise be prepared with an acrylic slurry or any other approved bonding agent.

(e) Damp-proofing

A damp-proof course shall be laid over the full width of all the walls at a minimum height of 150 mm above the final ground level or wherever else it may be required, and it shall be lapped for at least 150 mm at angles and joints. A damp-proof course shall also be laid and stepped up under all external sills.

(f) General

Rough and fair cutting shall be performed as required, and the brickwork shall be fitted around any steel work. Face brickwork shall be carefully cut and fitted to suit fittings.

Chases shall be left or formed for edges of concrete floors, staircases, etc. Chases shall also be provided wherever they may be required for pipes, conduits, switch boxes, distribution boards, and the like. Joints shall be raked out for flashings.

PD 02.3

PLASTER WORK

(a) Plaster coats

A plastered finish shall consist of a single coat, comprising one application of a 1:6 cement: sand mixture with a wood or steel-float finish.

(b) Thickness

The total thickness of the plaster finish shall be 13 mm minimum and 20 mm maximum.

(c) Workmanship

All plaster work shall be finished smooth and ready to receive paint. Plaster shall be flush with the faces of all switches and plug boxes, the interiors of which shall be kept free from plaster. Plastered surfaces shall be plumb, and jambs and reveals shall be

formed square.

The plasterer shall cut out and make good all cracks, blisters and other defects and leave the plaster work, on completion, in a state which is acceptable to the Engineer.

PD 02.4 **FLOOR SCREEDS**

Floor screeds shall have a mix proportion by mass consisting of 1 part of Portland cement and 3 parts of fine aggregate. A minimum amount of water is to be used, but it shall be sufficient to allow adequate compaction.

Screeds shall be laid on clean hardened bases in panels not exceeding 14 m² and shall be steel-trowelled to a true and smooth finish. In monolithic construction the panels shall not exceed 30 m². Joints in screeds shall coincide as nearly as possible with joints in the bases. The thickness of screeds shall be as shown on the drawings or as directed by the Engineer.

The entire screed surface shall be free from loose or raised particles of aggregate, trowel marks or from any irregularities, humps or depressions exceeding 5 mm when measured from a 3 m long straight-edge.

Screeds shall be cured for 3 to 7 days as may be directed by the Engineer and shall be protected from damage.

No moisture-sensitive floor finish shall be laid on screeds unless a reliable moisture test shows that the screed is sufficiently dry to receive the covering.

PD 03 **DOORS AND WINDOWS**

PD 03.1 **MATERIALS**

(a) General

All steel and iron work shall be delivered clean and free from rust, pitting or other defects. Shop primings shall be applied before delivery and shall consist of a coat of red oxide paint, or any other approved anti-rust paint on all surfaces.

Unless otherwise specified, all materials shall conform at least to the appropriate SABS or BS standards where such standards apply to ironmongery, steel, cast iron or any other related materials.

(b) Pressed steel door frames

Pressed steel door frames shall comply with SABS 1129 and shall be manufactured from 1,6 mm thick mild-steel sheeting, pressed to the required shapes, properly mitred, welded and reinforced, with all welding neatly cleaned off.

Frames shall be of the widths required to suit the thickness of the walls into which they are built and shall be fitted with suitable tie bars and braces at the bottom. Three lugs to be built into the brickwork shall be provided on each jamb.

Rebates in frames and transoms for doors shall be of the widths required to suit the thicknesses of the doors and shall be fitted with a pair of approved steel butt hinges set flush into recesses in the frames. 4,5 mm thick reinforcing plates shall be welded to the backs of the frames at hinge positions.

Heads of frames over double doors shall be drilled where required to form keeps for

bolts and shall be fitted with one rubber buffer for each leaf of the door.

Frames for single doors shall be fitted with approved chromium striking plates and an adjustable striking-plate keeper boxed in at the back of the frame by a welded-on sheet-metal box. The frames shall be fitted with a minimum of two rubber buffers.

Frames shall be protected against twisting and damage during transit and erection.

(c) Pressed-steel doors

Pressed-steel doors shall be manufactured from 1,6 mm thick steel plate. The doors shall be of standard design, pressed to shape with 40 mm reveals all round. The doors shall be strengthened with full-length vertical V-shaped or other approved sectional strengthening ribs projecting to the outer face. Two horizontal stiffening rails shall also be welded to the inner face of the doors.

A door shall be hung on a pair of 100 mm long steel butt hinges with loose pins. The leaves of the hinges shall be welded to both the door and the door frame, and a 1,6 mm thick steel plate shall be welded to the inner face of the door to protect the lock.

One leaf of double doors shall be fitted at the top and bottom with approved 150 mm cast brass barrel bolts in an approved manner and the other leaf shall be fitted with a lock, the striking plate of which shall be fixed to the first leaf.

Where indicated on the drawings, doors shall be fitted with louvred ventilation grills of approved design, backed with insect and vermin-proof gauze screening.

(d) Steel window frames

All steel window frames shall comply with SABS 727 and shall be of the types and sizes shown on the Drawings.

Standard industrial types of steel window frames shall be constructed from rolled mild-steel industrial sections, 35 mm wide by 3 mm thick, with opening sections constructed from standard residential sections, 25 mm wide by 3 mm thick, welded at angles and properly jointed at intersections.

Window frames shall be formed perfectly flat, truly square and properly jointed at all angles, and the opening portion shall fit properly on all faces and shall open and close freely.

Glazing bars shall be continuous with jointed intersections, the ends being neatly tenoned into the frame and securely welded in position.

Frames shall be fitted with standard fixing lugs.

Opening sections shall open as indicated on the drawings, and shall be fitted with steel hinges with brass pins. Pivots shall be fitted with bronze ring centres.

Side hung or top hung opening sections shall be fitted with brass handles and friction stays. Bottom hung sections shall be fitted with friction pivots and spring catches.

Weather bar drips shall be attached to the fixed frames for the complete width of the window at the head of outward opening sections.

Composite windows shall preferably be delivered to the Site fully assembled, complete with mullions and transoms.

(e) Door locks and handles

All door locks shall comply with the requirements of SABS 4 and shall be of approved manufacture and pattern. All locks shall be supplied with two keys. Keys shall be distinctly numbered with consecutive numbers and each key shall be stamped with the same number as that of the lock which it controls. No two locks in any one building may have the same key.

External doors shall be fitted with four-lever heavy-duty mortice locks, which shall be master-keyed.

All locks shall be properly installed and, after completion, striker plates shall be adjusted and the locks serviced.

Door handles shall be of cast zinc of approved manufacture and pattern.

(f) Miscellaneous fittings

All retaining devices for doors and windows as well as fittings such as coat hooks, retaining hooks, etc, shall be of solid brass. All fittings shall be secured by screws or set screws of the same material and finish as the fitting.

Fittings to be fixed to plastered walls, masonry or floors shall be fixed direct by means of patent plastic or fibre plugs fitted into drilled holes.

Door stops shall be provided at every door and shall be 40 mm diameter rubber stops.

PD 03.2 INSTALLATION OF DOORS AND WINDOWS

All built-in door and window frames shall be set straight, plumb and level, and shall operate to the satisfaction of the Engineer after fixing has been completed.

Fittings shall be either removed, or wrapped and protected from damage, until all rough trades have been completed.

PD 04 GLAZING

PD 04.1 MATERIALS

(a) Glass

Glass shall comply with the requirements of CKS 55. The quality of all window glass shall be such that surface deterioration will not develop after glazing.

All glass shall be free from bubbles, waviness, scratches, stains or other imperfections.

Unless otherwise specified, sheet glass for glazing shall be flat-drawn clear glass of ordinary glazing quality and of the thicknesses indicated below:

For panes not exceeding 0,75 m² in area3 mm

For panes exceeding 0,75 m² but not exceeding 1,5 m² in area.....4 mm

(b) Putty

All putty shall comply with the requirements of SABS 680.

Putty shall not be too hard or soft or caked when used and shall dry evenly without crazing or cracking.

Defective putty shall be cut out and replaced by the Contractor at his own expense, and any broken glass shall also be so replaced and putty so repainted.

PD 04.2 GLAZING

Glass shall be cut in panes to suit all glazed openings with sufficient clearance all round to prevent cracking by expansion, contraction or vibration.

In all cases the glass shall be well bedded and back-puttied and installed as specified in SABS Code of Practice 0137.

All putty shall be carefully trimmed, cleaned off and neatly finished off straight with smooth surfaces and sharp mitres. A paint primer shall be applied as soon as the putty has dried out sufficiently to prevent shrinkage cracks from forming.

The entire glazing operation shall be cleaned before the premises are handed over for occupation.

PD 05 CARPENTRY AND JOINERY

PD 05.1 GENERAL

(a) Materials

All timber used for structural purposes shall be of merchantable grade and shall comply with the requirements of SABS 563 and SABS 1245. Structural timber shall be carefully selected and of the best quality, free from large or dead knots, shakes, waney edges or other defects. Purlins and bracing shall comply with the requirements of SABS 653. Finger-jointed structural timber shall comply with the requirements of SABS 096 and laminated timber with the requirements of SABS 1089.

Hardwoods and softwoods for joinery shall comply with SABS 1099 and SABS 1359 respectively and suitable species shall be used for the various purposes.

Unless otherwise specified, all materials shall conform to the appropriate SABS or BS Specification where such standards exist for nails, screws, bolts, adhesives, etc.

(b) Preservative treatment

All structural timber shall be given a preservative treatment suitable for the duty for which the timber is intended in accordance with SABS 05, and no untreated timber shall be used. The preservative treatment shall not impair the final finish. The timber shall be impregnated throughout. When surface coating is specified, the compounds applied on the surfaces of the timber shall form an unbroken film.

(c) Priming

The jointing surfaces of all joints exposed to the weather and built-in portions of frames shall be thickly primed except where adhesives are specified.

Carpentry and joinery items which are prepared for painting by the manufacturer, shall be knotted and primed before being dispatched to the Site.

Primed surfaces shall be touched up where necessary during the progress of the work or where site adjustments have been made.

PD 05.2 CARPENTRY WORK

(a) Scope of work

Carpentry work shall be carried out in a manner consistent with good workmanship and in compliance with the Drawings.

The carpenter shall perform all cutting away and making good in attendance upon all other trades and he shall provide and maintain temporary coverings required for the protection of any finished work that might be damaged if left unprotected during the progress of the work.

(b) Dimensions

Unwrought timber shall be as sawn and shall be to the dimensions and within the tolerances specified in the relevant SABS Standard Specifications mentioned in Subclause PD 05.1(a).

(c) Jointing

Unless otherwise specified, all joints shall be secured by means of a suitable type and a sufficient number of approved connectors. All joints shall be carefully made in such a way that they will not impair the strength and stiffness of the beams or members.

PD 05.3 JOINERY WORK

(a) Scope of work

Joinery work shall consist of the manufacture, delivery to the Site, and fixing in the buildings, of all joinery shown on the Drawings.

Except where a special finish is specified, the Contractor shall have all stairs, landings, doors, shelves and other joinery work cleaned and scrubbed down and shall leave all his work in a good order to the satisfaction of the Engineer.

(b) Dimensions

All wrought timber shall be sawn, planed, drilled or otherwise machined or worked to the correct sizes and shapes shown on the Drawings.

Reasonable tolerance shall be provided at all connections between joinery works and the building structure to compensate adequately for any irregularities, settlements or any other movements.

(c) Fabrication

The joiner shall perform all the necessary mortising, tenoning, grooving, matching, tonguing, housing, rebating and all the other works necessary for correct jointing. He shall also provide all metal plates, screws, nails and other fixings that may be necessary for doing the specified joinery work properly.

(d) Joints

Where joints are not specifically indicated, they shall be the recognised forms of joints for each position. The joints shall be so made as to comply with part 2 of BS 1186.

(e) Doors and frames

Door frames, linings, panel doors, framed, ledged and braced doors, flush doors, sliding doors, etc, shall be supplied or made by the joiner and shall be installed, fitted or hung as detailed on the Drawings.

All timber shall be wrought and prepared for oiling, staining, varnishing or painting.

(f) Skirtings, cornices, etc

Skirtings, cornices, etc shall not be installed until after the wall coverings have been applied, the flooring laid and ceilings installed, unless otherwise specified.

(g) In situ joinery

In situ joinery work shall not be executed until after all floor, wall and ceiling surfaces have been formed or constructed, unless otherwise instructed.

(h) Ceilings

Ceilings shall consist of plaster board or fibre-cement panels as shown on the Drawings and shall be nailed to the bracing or suspended from the roof structure. The panels shall be separated by exposed tees and insulated with a 50 mm thick fibreglass wool blanket where shown on the Drawings.

PD 06 ROOF SHEETING AND ACCESSORIES

The roof structure, sheeting and accessories shall comply with the provisions of SANS 10400-L and shall be measured as a provisional sum.

PD 07 ELECTRICAL WORK

The electrical wiring of buildings shall be carried out by registered and licensed electricians in accordance with the requirements of SABS 0142 and the regulations of the Employer.

The electrician shall work in close co-operation with the Contractor to ensure that all conduits, switchboards, plug boxes and switch boxes are installed in their correct position.

The work shall be carried out in accordance with the Drawings and to the satisfaction of the Engineer and the local authority.

PD 08 PLUMBING

PD 08.1 MATERIALS

(a) General

All materials shall be of the best quality and shall be approved by the Engineer before installation. Cracked, chipped, dented or faulty items or materials shall be replaced at the Contractor's expense. Glazed ceramic sanitary ware shall comply with the requirements of SABS 497 and all other materials shall comply with the standards as

specified, scheduled or shown on the Drawings.

(b) Water closet (WC) suites

WC suites shall consist of a white glazed vitreous china closet with an S or P trap and seat lugs, a 14 litre low-level matching flat-bottomed flushing cistern placed and fixed on the closet, or a suspended enamelled cast-iron cistern with the flush pipe connected to the flushing rim of the closet with rubber cone joints, and a solid heavy-duty plastic seat with cover, hinges and buffers.

(c) Urinals

Urinals shall be of the type detailed or scheduled, of white glazed vitreous china, wall mounted, with an automatic or a manual flushing system, and chromium-plated fittings.

(d) Wash hand basins

Wash hand basins shall be of white glazed vitreous china or enamelled cast iron, wall mounted on a pair of cast-iron brackets, and fitted with chromium-plated fittings consisting of two taps, outlet and chain, and supplied with a plug and an anti-siphon trap.

(e) Sinks

Sinks shall comply with the requirements of SABS 242 and shall be complete with cabinet, chromium-plated outlet, anti-siphon trap, plug, chain and two bib taps or one mixer tap, all as detailed or as scheduled.

(f) Pipes and tubing

Cast-iron and steel pipes used in plumbing work shall comply with the requirements of SABS 746 and SABS 62 respectively. Copper tubing shall comply with the requirements of SABS 460, and malleable cast-iron fittings with the requirements of SABS 509.

PD 08.2

CONSTRUCTION

Plumbing shall be carried out strictly in accordance with the Drawings and with the National Building Regulations, with specific reference to Government Notice R1875 dated 31 August 1979.

Steel pipes and their malleable cast-iron fittings shall be joined with red lead and hemp, lead pipes shall have wiped soldered joints, and cast-iron pipes shall be joined by caulking with hemp and metallic lead.

Soil pipes from WCs shall have an internal diameter of at least 100 mm and shall be fitted with a pan connector and an access bend (or an access junction where a vent pipe is used), and carried through walls and into the ground for connection to the sewer. Vent pipes shall be fitted with approved balloon gratings.

Waste pipes from basins and sinks shall have an internal diameter of at least 32 mm and shall discharge into gulleys. Bends for waste pipes shall incorporate cleaning eyes.

Cisterns, basins and sinks shall be connected to the pipe system with 12 mm diameter copper service pipes, and chromium-plated stop-cocks shall be installed for isolation and maintenance purposes.

PD 09 PAINTING

PD 09.1 GENERAL

No paint shall be applied to any surface containing traces of dust, grit, grease, oil, loose rust, millscale or corrosion products of any kind or to any surface that is not free from moisture. Where necessary, surfaces shall be thoroughly washed to remove all traces of soluble salts and/or corrosive air-borne contaminants prior to painting, and the surfaces shall be dried and painted immediately thereafter.

Welding shall be completed in so far as it is possible before painting commences, but in cases where welding can be done only at a later stage, no paint shall be applied to within 75 mm of the proposed weld position unless otherwise specified. Welds and adjacent parent metal shall be abrasive blasted and/or ground and all contaminants such as flux shall be removed prior to painting.

Surfaces of members which are to rest on concrete or other floors or which will be otherwise inaccessible after erection shall receive the full paint system prior to erection.

Damaged paint areas on metal surfaces shall be cleaned, rust spots removed where applicable and the surrounding paint which is still intact shall be feathered for a distance of 20 mm beyond the damaged area. Spot priming and repair shall consist of all the coats previously applied and shall overlap the damaged area.

Damaged galvanised areas shall be cleaned and any rust spots and any flakes of the coating surrounding the damaged area removed. The coating shall then be restored by zinc spraying or soldering, or painting with a zinc-rich paint, as may be approved by the Engineer.

Where the shop coat is allowed to age for a few months before the final painting is done, light sanding or rubbing with steel wool or scrubbing with clean water using a bristle brush shall be carried out.

Steel to be embedded in concrete shall not be painted below 50 mm from the final level of the concrete.

Each priming coat and each undercoat of paint shall be inspected and approved by the Engineer before any subsequent undercoat or finishing coat is applied.

All finishing colours shall be as shown on the drawings, or as directed by the Engineer.

PD 09.2 MATERIALS

Paints shall comply with the requirements of the appropriate Specifications below:

(a) Primers

SABS 312 :	Red-lead based for structural steel
SABS 678 :	For wood
SABS 679 :	Zinc chromate for steel
SABS 723 :	Etch-wash primer for metals
SABS 912 :	Calcium plumbate for galvanised iron
SABS 926 :	Zinc-rich epoxy for steel

(b) Undercoats

SABS 681 :	For all undercoats
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(c) Finishing coats

SABS 515 :	For interior use, flat and egg-shell finish
SABS 630 :	For interior and exterior use, high-gloss enamel
SABS 631 :	For interior and exterior use, oil gloss paint
SABS 633 :	For interior use, emulsion paint
SABS 634 :	For exterior use, emulsion paint
SABS 684 :	For exterior use on structural steel
SABS 801 :	For interior and exterior use, epoxy-tar paint
SABS 802 :	For interior and exterior use, bituminous aluminium paint
SABS 887 :	For interior use, glossy and egg-shell varnish.

The Contractor shall furnish the Engineer with the following information and details regarding the paints and decorative materials for the painting system he proposes to use, for written approval:

- (i) The name of the manufacturer and trade name.
- (ii) The brand, type or grade of paint and the appropriate SABS Specification.
- (iii) Manufacturer's data sheets, colour references, instructions for use, including surface preparation, sealers, primers, undercoats, finishing coats, coat thicknesses and curing periods, which shall all be considered as being part of these Specifications if approved by the Engineer.
- (iv) Safeguards to protect the applied paint from damage until the work is accepted by the Engineer.
- (v) The shelf or pot life of materials, if applicable.
- (vi) An undertaking that the proposed paint system is suitable for its intended use and that the various coats of paint are compatible with one another.

Where proprietary brands are used, the manufacturer's priming and all subsequent coats of paint suitable for that particular brand shall be employed in accordance with the manufacturer's instructions.

No other materials of a similar nature and quality or from another manufacturer may be used instead of those approved unless permission to do so has been obtained from the Engineer, in writing.

All materials shall be brought onto the Site in containers sealed by the manufacturer. Paints shall not be mixed with another paint of a different quality, type, brand or colour, or thinned or adulterated in any way, but shall be used as supplied by the manufacturer. Any mixing or tinting required shall be carried out by the manufacturer.

Tinting of paint on the Site by the Contractor will only be allowed with the written permission of the manufacturer and the Engineer.

PD 09.3

INSPECTION AND PRELIMINARY WORK

Before commencing paintwork, the Contractor shall carefully inspect the surfaces to be painted to satisfy himself that the surfaces are in a satisfactory or acceptable condition to receive the paint system specified.

All metal fittings and fastenings shall be removed where applicable before the preparatory processes are commenced. On completion, the metal fittings and fastenings shall be cleaned and refitted in position.

PD 09.4 WORKMANSHIP AND FINISHES

Paint may be applied by spray, brush or roller depending on the materials used, the surface to be painted, and the manufacturer's instructions.

Every coat of paint, irrespective of the method of application, shall be adequately and permanently keyed or bonded to the base material or previously applied coat, and shall be evenly distributed, continuous, free from sags, runs, brush marks, pin holes or other imperfections, and shall dry to a smooth finish.

An approved water trap and air-regulating valve shall be furnished and installed on all equipment used in spray painting.

Before painting the interiors of buildings they shall be cleaned and the floors shall be washed and kept free from dust during the progress of the interior work.

The Contractor shall protect all nearby surfaces against disfigurement by spatters, splashes and smirches of paint or paint materials. The Contractor shall be responsible for any damage by paint or dirt caused by his operations to vehicles or property or injury to persons and he will be required to provide protective measures to prevent any such damage or injury and make good, where required, at his own expense.

If passing traffic creates dust which may harm or spoil the appearance of external painted surfaces, the Contractor shall sprinkle the adjacent areas with water, at his own cost, for a sufficient distance on each side of the location where painting is being done.

Undercoats shall be tinted by the manufacturer to distinguish between successive coats.

The final coats or finishing coats of paint shall be applied after all the other work in the vicinity has been completed.

The painter shall keep some of the final paint in reserve in the event of his having to make good any patching which may be required as a result of damage or unforeseen circumstances.

Upon completion, the Contractor shall, in the case of buildings, clean all glass, remove all paint spots from walls, floors and fittings, and leave the premises clean and fit for occupation.

All inflammable materials, comprising solvents, thinners, wiping cloths, etc, shall be placed in tightly closed containers and properly disposed of.

PD 09.5 PAINTING OF PLASTER, CONCRETE OR BRICK SURFACES**(a) Surface preparation**

Surfaces for painting shall be prepared by sandpapering, scraping or wire-brushing to remove loose material, dust, laitance, scum or other deleterious materials or high spots. Defective areas shall be cut out where necessary and made good with an approved non-shrink filler. Cracks shall be cut out, suitably keyed, and given a coat of an approved bonding agent before the filler is applied. All patches shall be rubbed down to an even surface. Surfaces shall be washed and allowed to dry.

Surfaces shall be treated with neutralising liquid for walls, and if the surface is coarse or textured, either one full coat of pigmented wall sealer or one full filler coat shall be applied in addition to the neutralising liquid.

(b) Paint application

Prior to the emulsion paint being applied, the surface shall be sealed with an approved clear sealer and primed with an undercoat diluted to 50%. Emulsion paint (PVA or acrylic) shall then be applied in two finishing coats.

Egg-shell finish (alkyd oil based), oil gloss paint or enamel gloss paint shall be applied as follows: one coat of universal undercoat shall be applied and it shall be followed by one coat of a mixture comprising 50% of the undercoat and 50% of the paint to be used for the finishing coat. A finishing coat of semi-gloss egg-shell, or oil gloss paint or enamel gloss paint shall then be applied.

PD 09.6 PAINTING OF WOODWORK

(a) Surface preparation

The surfaces shall be cleaned, sandpapered and rubbed down to a smooth, even face before painting. The moisture content of the timber shall not be more than 20% at the time when the first coat is applied. All cracks, shakes or scars shall be filled flush with a filler approved by the Engineer before painting. The surface shall then be washed with cleaner and allowed to dry.

(b) Primer application

One coat of an approved wood primer shall be applied.

After open-grained timber has been prepared and primed, the grain shall be stopped and filled with synthetic filler and rubbed down with water paper.

All new woodwork shall be properly primed on all surfaces and edges before being fixed in position. All woodwork not previously painted shall be given a prime coat, well brushed in.

(c) Paint application

One coat of universal undercoat shall be applied followed by one coat of mixture comprising 50% of the undercoat and 50% of the paint to be used for the finishing coat. A finishing coat of oil gloss paint or enamel gloss paint or semi-gloss egg-shell (alkyd oil based) paint shall then be applied.

(d) Varnish finish

Prepare, stop and apply two coats of gloss varnish or egg-shell varnish.

PD 09.7 PAINTING OF METAL SURFACES

(a) General

Wherever possible, all painting shall be done at the fabricator's works, but where this is not feasible, the Engineer may permit the application of the undercoat and finishing coats to be carried out on the Site, in which case a prime coat shall be applied at the fabricator's works prior to the members being despatched to the Works.

(b) Surface preparation

The preparation of metal surfaces shall comply with SABS Code of Practice 064 and shall receive the greatest care to ensure rust-free conditions prior to the paint system being applied.

All surfaces shall be prepared by loose paint, rust, plaster, scale, dust, dirt, grease, etc, being removed and by the defective paint surfaces being repaired or patched before painting or repainting. Damaged shop-primed surfaces shall be thoroughly cleaned of rust and patched with a prime coat.

(c) Paint application

(i) Iron and steel work

All iron and steel work shall be properly primed with a red-lead-based primer where steel work is likely to be exposed to the elements for longer than 30 days. Zinc-chromate primer may be used where overpainting will be completed within 30 days of priming. Metal-etch wash primers may be used under dry conditions where overpainting will be completed within 24 hours of priming. The dry-film thickness of the prime coat shall not be less than 0,300 mm.

After priming, one coat of universal undercoat shall be applied. If necessary, the undercoat shall be tinted to a shade just lighter than the desired finish with approved liquid stainers. The dry-film thickness shall not be less than 0,250 mm.

The two finishing coats shall either be of alkyd resin-based synthetic enamel, gloss or matt oil paint, or as specified elsewhere. The dry-film thickness shall not be less than 0,250 mm per coat.

When mating surfaces are brought together, both surfaces shall have been given the full treatment specified, but where this cannot be done, each surface shall be given a copious coating of primer and the surfaces drawn together while the paint is still wet.

The portion of structural steel members to be buried in soil, and all bases to a height of 500 mm shall be given two coats of an epoxy-tar primer instead of the zinc-chromate primer specified for other surfaces.

The surfaces of steel and cast-iron articles, such as floor gratings, grids and manhole covers, shall, after a thorough brushing to remove loose rust, be painted with two coats of epoxy-tar paint, each at least 0,230 mm thick.

(ii) Galvanised iron and steel

All traces of protective coating shall be removed with galvanised iron cleaner, and two coats of calcium plumbate primer shall be applied. One coat of tinted universal undercoat and two finishing coats of alkyd resin-based synthetic enamel gloss paint shall be applied.

(iii) Non-ferrous metals

Surfaces of aluminium, copper, etc, shall be prepared and cleaned, and one coat of self-etch zinc-chromate wash primer shall be applied. One coat of universal tinted undercoat and two finishing coats of enamel gloss paint shall then be applied. Where non-ferrous metals are not to be painted, the surfaces shall be cleaned, polished and two coats of lacquer applied.

PD 09.8

PAINTING OF FLOOR SCREEDS

Where chemicals could cause damage to floors, such floors shall be painted with an approved epoxy paint. The type of paint to be used will be shown on the Drawings and will depend on the types of chemicals that are used.

The preparation of such floor screeds for painting and the subsequent application of paints shall be carried out strictly in accordance with the manufacturer's instructions.

PD 09.9 PAINT THICKNESS

Unless otherwise specified, all coats of paint, whether prime coat, undercoat or finishing coat, shall have a dry-film thickness of not less than 0,200 mm, irrespective of the method of application.

PD 09.10 INSPECTION

The Contractor shall provide the necessary equipment to establish whether the primers, undercoats and finishing coats have been applied to the correct thickness and at the correct applications. The Engineer may take samples of the paints during painting operations for testing and quality control.

PD 10 MEASUREMENT AND PAYMENT

PD.01 BRICKWORK:

- (a) (Thickness, type and class indicated).....Unit : m²
- (b) Etc for other thicknesses, types and classes

The unit of measurement shall be the square metre of each type of brickwork built, calculated from the leading dimensions of the brickwork. Areas of pipes, etc, built into brickwork shall not be included in the areas measured. At corners and intersections common to more than one brick wall, the areas shall be measured only once.

The tendered rates shall include full compensation for the construction of the brickwork complete as specified, including pointing, the building-in of conduits, beams, lintels, pipe sleeves, doors, windows, the raking-out of joints, damp-proof course, brickforce reinforced as specified, etc.

PD.02 PLASTER WORK:

- (a) (Thickness of plaster and finish indicated)Unit : m²
- (b) Etc for other thicknesses and finishes

The unit of measurement shall be the square metre of each type of coat completed as specified.

The tendered rates shall include full compensation for the construction of the plaster work, including the supply of all materials, mixing, applying, finishing, forming reveals, joints, narrow widths, rounded angles, v-joints, etc, complete as specified.

PD.03 FLOOR SCREEDS:

- (a) (Thickness indicated)Unit : m²
- (b) Etc for other thicknesses

The unit of measurement shall be the square metre of floor screed laid, as specified, on

floors, steps or areas shown on the Drawings or as designated by the Engineer.

The tendered rates shall include full compensation for the construction of the floor screeds, including the supply of all materials, mixing, laying, finishing, the forming of nosings, reedings, skirtings, etc.

PD.04 DOORS AND WINDOWS:

(a) (Type and size indicated)Unit : number

(b) Etc for other types and sizes

The unit of measurement shall be the number of doors and windows installed complete as specified.

The tendered rates shall include full compensation for the manufacturing and installation of the steel doors, windows, and frames complete with hinges, handles, locks, barrel bolts, retaining devices, door stops, stays and any other work necessary to complete the work as specified or as shown on the Drawings. The tendered rate for windows shall also include full compensation for glazing, window sills as specified, and damp-proof sheeting.

PD.05 AWNINGS:

(a) Awnings on existing package plant building doorsUnit: No.

The tendered rates shall include full compensation for the manufacturing and installation of the awnings and any other work necessary to complete the work as specified or as shown on the Drawings. The tendered rate for windows shall also include full compensation for glazing as specified.

PD.06 ELECTRICAL CONTROL PANEL:

(a) Repairing the electrical control panel for the package plant in the existing buildingUnit: No.

The tendered rates shall include full compensation for the repairing of the electrical control unit/panel and any other work necessary to complete the work as specified.

PD.07 TELEMETRY SYSTEM:

(a) Supply and Installation of Telemetry SystemUnit: No.

The tendered rates shall include full compensation for the supply, installation, and any other work necessary to complete the work as specified.

PD.08 PAINTING:

(a) One coat professional plaster primer and two coats acrylic paintUnit : m²

(b) Etc for other thicknesses and finishes

The unit of measurement shall be the square metre plastered walls to be painted and shall be deemed to include the preparation of the surfaces including filling, stopping, sanding, and priming of nail heads and screws all in accordance with the manufacturer's instructions.

The tendered rate for the painting of walls shall include full compensation for the supply of all labour and materials, transport of all materials to site, preparation of the surfaces including filling, stopping, sanding, and priming of nail heads and screws and the painting of the walls in accordance with the manufacturer's instructions.

PD.09 CEILINGS:

(a) Plaster board ceiling (Thickness Indicated):Unit : m²

The unit of measurement shall be the square metre of Plaster board ceiling.

The tendered sum for Ceiling shall include full compensation for the supply, installation, and insulation of the specified ceiling boards.

PD.10 ROOFING:

(a) Roofing.....Unit : Prov. Sum

The Contractor will be reimbursed in substitution of the Provisional Sums (if any) allowed in the Schedule of Quantities for work to be executed by the Contractor, in the amounts determined in accordance with the provisions of Clause 6.6 (GCC 2010). Mark up on overhead charge limited to 10%.

The provisional sum for the roofing shall include full compensation for the supply, delivery, erection of roof trusses, purlins and bracing to specifications, including of all labour and materials, transport of all materials to site, the complete erection of the roof sheets in accordance with the manufacturer's instructions.

PD.11 PLUMBING AND DRAINAGE:

(a) Sink.....Unit : No

The tendered rates shall include full compensation for the supply, installation, and any other work necessary to complete the work as specified.

(b) Water Closet.....Unit : No

The tendered rates shall include full compensation for the supply, installation, and any other work necessary to complete the work as specified.

(c) Plumbing Works.....Unit : Sum

The tendered sum shall include full compensation for all plumbing works associated with connecting the guard house to existing sewer pipeline within 10m radius.

PD.12 ELECTRICAL INSTALLATION:

(a) Electrical Installation.....Unit : Sum

The tendered sum shall include full compensation for the supply, delivery and installation of conduits, switchboards, plug boxes and switch boxes including all labour and materials, transport of all materials to site.

PD.13 FURNITURE:

(a) Furniture.....Unit : Prov. Sum

The Contractor will be reimbursed in substitution of the Provisional Sums (if any) allowed in the Schedule of Quantities for work to be executed by the Contractor, in the amounts determined in accordance with the provisions of Clause 6.6 (GCC 2010). Mark up on overhead charge limited to 10%.

The provisional sum shall include full compensation for the supply and delivery of office furniture for the guard house.

PD.14 CRAWL BEAM:

(a) 203 X 133 X 25 I-Section.....Unit : Sum

The tendered sum shall include full compensation for the supply, delivery, installation and fixing of the crawl beam to the underside of the roof slab.

PCL: COMMUNITY LIAISON AND COMMUNITY RELATIONS

PCL 1 GENERAL

The construction site is situated in a built-up area and the Contractor shall ensure the least possible disruption of movement of the public during construction. The Contractor shall be responsible for liaison with the Community Liaison Officer (CLO) in respect of construction activities next to private properties and entrances to properties. No separate payment will be made in this regard.

PCL 2 PROJECT STEERING COMMITTEE (PSC)

A Project Steering Committee (PSC) will be established for the project. The functions and powers of the PSC will be as approved by the DEPARTMENT OF RURAL DEVELOPMENT AND LAND REFORM.

In view of the Contract being executed in various Municipal Wards and to limit representation on the PSC, the PSC will consist of the local Ward Councillors and a total of three community representatives appointed by the Ward Councillors affected by the Works.

The Contractor will liaise with the CLO and Ward Councillors for the permanent appointment of local labour workforce for the duration of the Contract, irrelevant of the work being executed in various wards.

PCL 3 PUBLIC LIAISON OFFICER (PLO)

A Community Liaison Officer (CLO) will be appointed by the Contractor only on instruction of the Employer. In the event of an appointment of a CLO, the contractor shall, however, accept the appointment as part of his management personnel.

PCL 3.1 DUTIES OF THE CLO

The CLO's duties will be the following:

- a. The CLO will liaise with the PSC for the permanent appointment of local labour workforce for the duration of the Contract, irrelevant of the work being executed in various wards.
- b. To be available on site daily between the hours of 07:15 and 10:30 and at other times as the need arises. His normal work day will extend from 07:15 in the morning until 16:45 in the afternoon inclusive of a thirty minute lunch interval.

- c. To determine, in consultation with the Contractor, the needs of the local labour for relevant technical training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.
- d. To communicate with the Contractor and the Engineer to determine the labour requirements with regard to numbers and skill, to identify possible labour disputes and to assist in their resolution.
- e. To attend all meetings in which the community and/or labour is present or is required to be represented. In particular he will attend the first part of the monthly Site Meeting to report on local community labour involvement.
- f. To report to and liaise with the Project Steering Committee.
- g. To inform local labour of their conditions of employment and to inform local labourers as early as possible when their period of employment will be terminated.
- h. To ensure that all labourers who are involved in activities where tasks have been set are fully informed regarding the principle of task work.
- i. To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- j. To receive and attend to any complaints lodge by PSC and members of the community.
- k. To keep a daily written record of his interviews and community liaison.
- l. All such other duties as agreed upon between all parties concerned.
- m. To prevent any interference with any matter that is in conflict with the relevant contract as approved by the Local Municipality, that could have a direct influence on the technical specification or the conditions of contract as set out in the relevant contract documents.
- n. To ensure that no member of the PSC or any member of the community put any pressure on the consultant and/or the contractor involved to make any financial or other contribution to individuals or the community as a whole without the knowledge of the Metsimaholo Local Municipality

PCL 3.2 PAYMENT FOR THE CLO

Remuneration of the CLO will be R4000 per month unless otherwise ordered by the Engineer. A special item is incorporated in the Schedule of Quantities relating to payment of the CLO on a monthly basis.

The Contractor shall give to the CLO, at the earliest opportunity, written notice of the termination of the project, provided always that such notice shall not be less than one month.

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:

- to;
- a) identify the risks and hazards to which persons may be exposed
 - 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

<i>Item</i>	<i>Unit</i>
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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.

<i>Item</i>	<i>Unit</i>
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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

C4.1.1 LOCATION OF THE WORKS

The water treatment plant is located in Oranjeville.

C4.1.2 DESCRIPTION OF THE SITE AND ACCESS

Contractor to organise access in consultation with the Municipality.

C4.1.1 GEOLOGICAL AND GEOTECHNICAL ASPECTS

Contractors must acquaint themselves of the conditions on site.

C4.1.2 EXISTING STRUCTURES

There is existing infrastructure present on the site.

PART C5 ANNEXURES

TENDER DRAWINGS

The work shall be carried out in accordance with the following drawings which form part of these contract documents:



- Notes
- The design of this drawing is copyright and remains the property of Watson Consulting Engineers Reg. No 2014/237340/07
 - All work to be carried out in strict accordance with local authority, requirements, National Building Regulations, and the project specifications.
 - All relevant details, levels and dimensions must be checked on site before commencement of works. Any discrepancies to be reported to the Engineer's office immediately.

LEGEND	
---	200mm WATER PIPE COMPLETED
---	200mm PROPOSED WATER PIPE
---	160mm PROPOSED WATER PIPE

A	10/10/2023	ISSUED FOR TENDER	NZ
Rev.	Date	Description	By

Revisions

Client	Office Contact Details
	Municipal Building 10 Fichardt Street Sasolburg 4800 Tel: 016 973 8487 Web: www.metsimaholo.gov.za

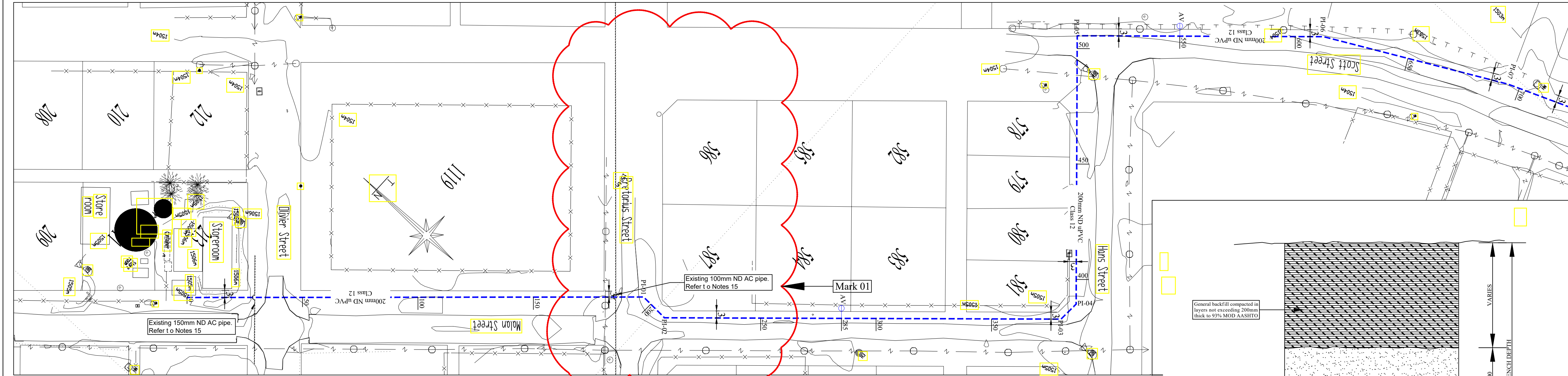
Civil/Structural	Office Contact Details
	113 River Road Lytleton Manor Centurion 0157 Tel: 010 023 4260 Fax: 086 596 4421 Email: info@w-ce.co.za Web: www.w-ce.co.za

Project Title
**THE UPGRADING OF ORANJEVILLE
WATER TREATMENT PLANT
(WORK PACKAGE 1)**

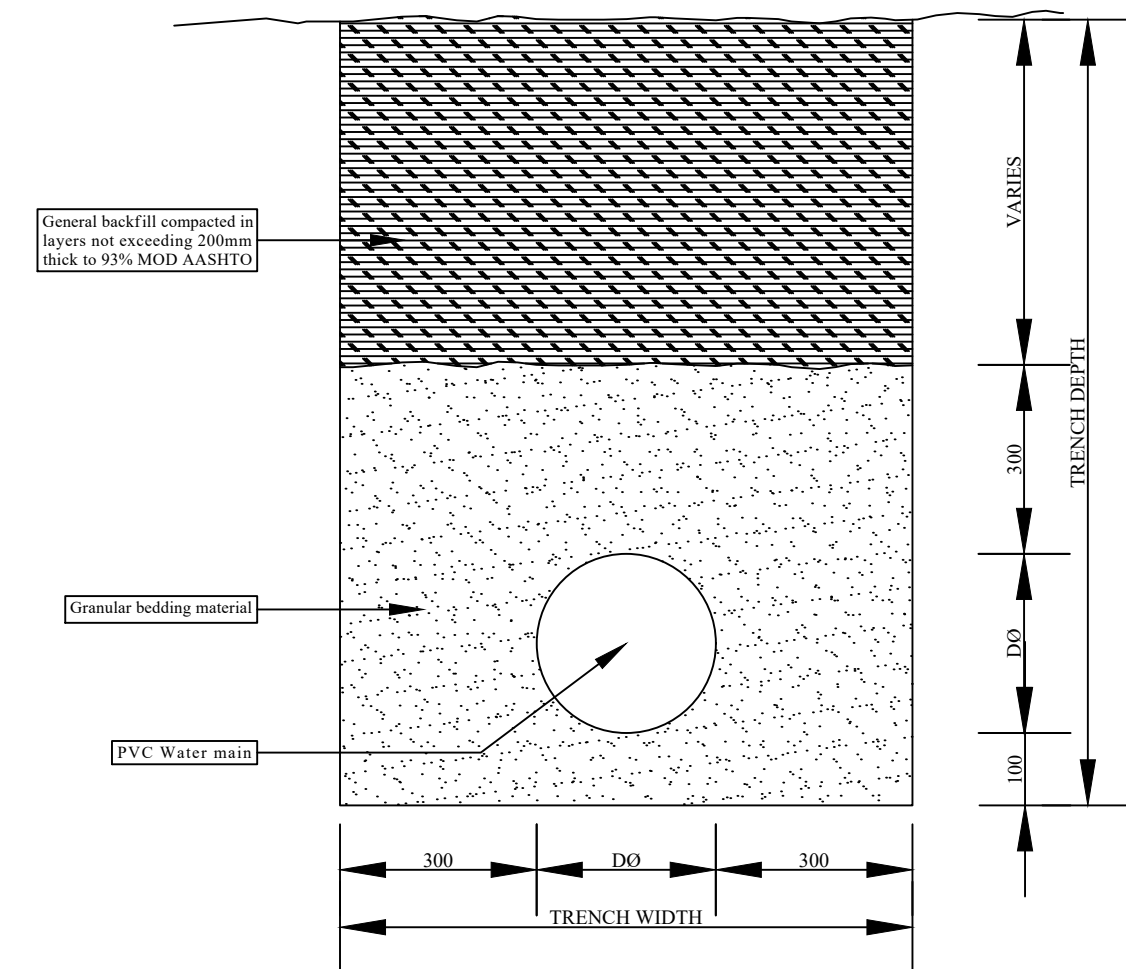
Service Title
CIVIL

Drawing Title
WATER PIPE LAYOUT

Drawing Number P0079-CIV-WAT-0100		Rev Nr. A
PROJECT STAGE:	INF CV DD TEN CON ASB	
SCALE:	NTS	
DESIGNED BY:	P.M	DRAWN BY: P.M
CHECKED BY:	N.Z	APPROVED BY: N.Z
SIGNED BY:	N.Z	PR NO: 20180424
DATE:	10/10/2023	PAGE SIZE: A1
FILE LOCATION:	C:\Users\p\Documents\Drawings\Drawings\0100.dwg	
SIGNATURE:		



LAYOUT PLAN
SCALE 1:1000



- NOTES**
- This drawing is to be read in conjunction with all relevant contract documents and any discrepancies in dimensions, specification or details should be brought to the attention of the Engineer for clarification.
 - All dimensions are in millimeters. All levels, chainages and coordinates are in meters unless stated otherwise.
 - Reference should be made to the Engineer's drawings for all setting out information in the first instance.
 - Concrete shall be as follows:
 - Blinding - Grade 10MPa
 - Mass Concrete - Grade 15MPa
 - Reinforced Concrete - Grade 30MPa
 - Cement shall comply with SANS EN9 197 CEMII/A Cement
 - Concrete shall be supplied, placed and cured in accordance with SANS1200.
 - Setting times for cast in-situ concrete shall be in accordance with SANS1200.
 - The Contractor shall verify all levels, heights and dimensions on site and check the same against drawings before putting any work in hand.
 - The Contractor is responsible for the correct setting out of the Works.
 - The Contractor shall ensure that all details shown on the drawings are in compliance with Local Authority by-laws and regulations.
 - The Contractor, with expert advice of Local Authority, shall locate, identify and relocate any existing services on site and shall protect them from damage throughout the duration of the Works.
 - Unless shown otherwise on the reinforcement details, the concrete cover to each face of the reinforced concrete shall be 50mm.
 - Selected backfill implies approved selected material from trench excavations, free from stones larger than 150mm.
 - Bedding for flexible pipes shall consist of an approved selected gravel material with a PI not exceeding 6, free from stones exceeding 20mm, organic matter and lumps of clay.
 - Contractor to note: the presence of Asbestos Cement potable water mains within portions of the Works and shall not damage these mains. Damage to the water mains shall be to the Contractor's cost.

Benchmark Coordinates List (WG-29)		
Name	X	Y
TH1	78503.382	-2985883.387
TH12	80071.074	-2985881.596
TH13	79603.965	-2986022.414
TH14	78877.287	-2986022.662
TH15	78787.614	-2986851.703
TH16	78380.569	-2987162.439
TH17	78520.706	-2987197.241

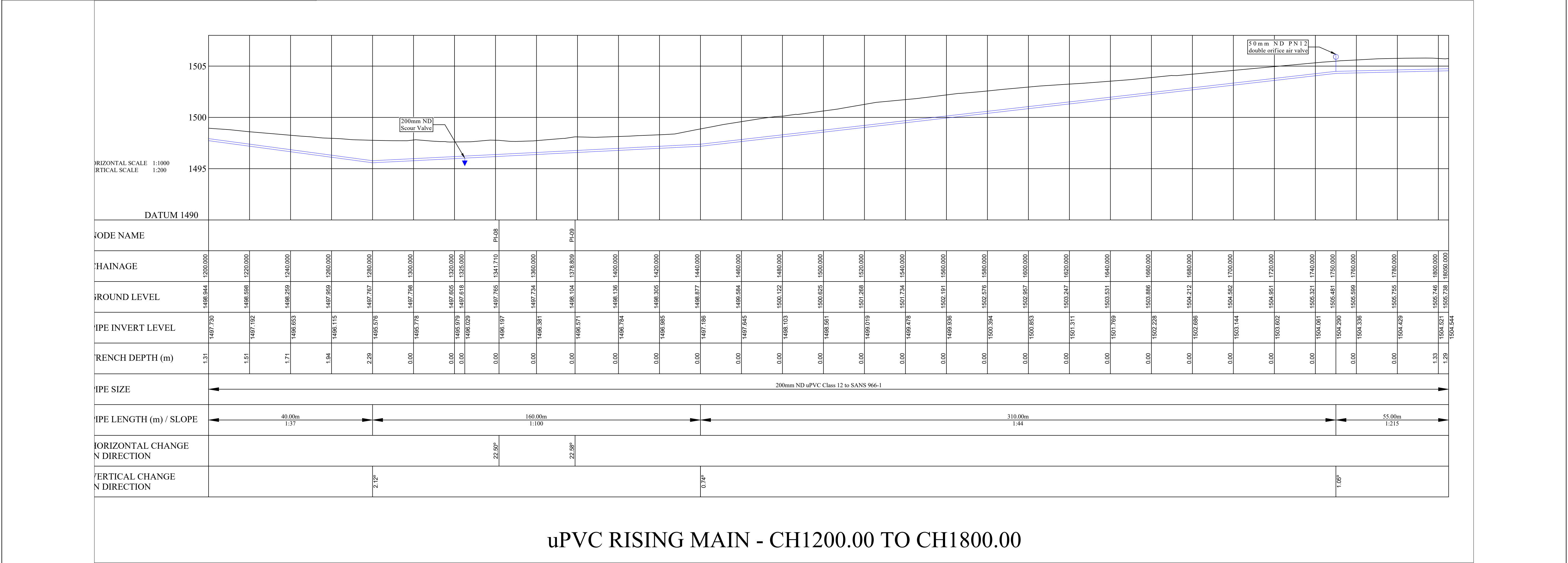
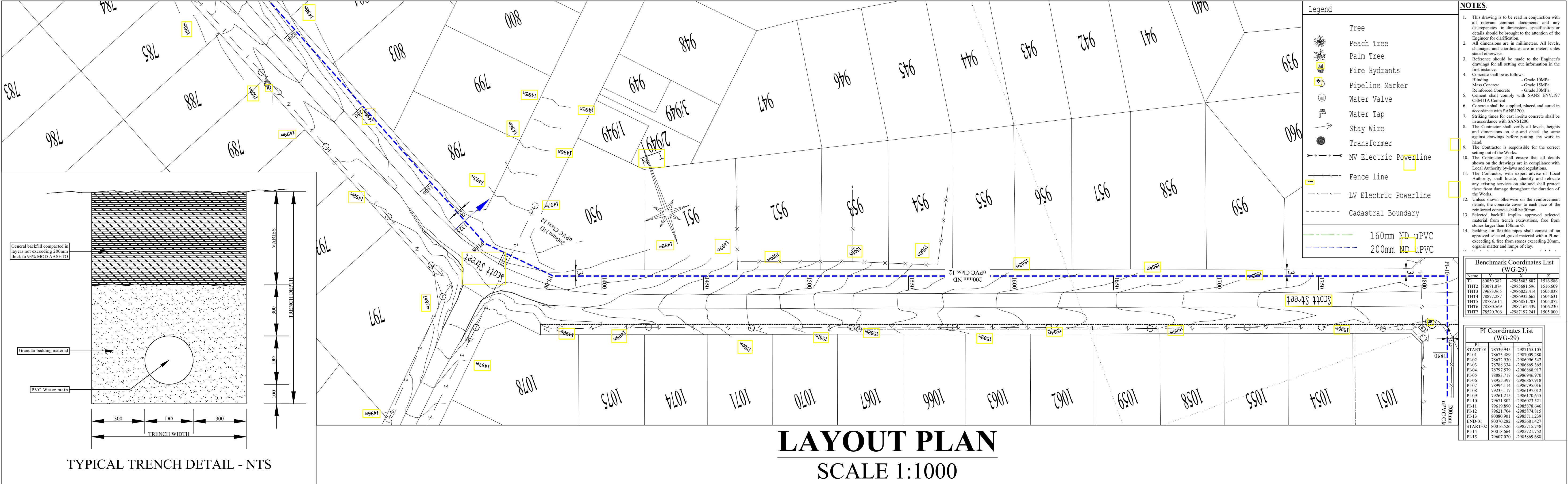
PI Coordinates List (WG-29)		
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START-01	78339.945	-2987155.107
PI-01	78673.489	-2987009.280
PI-02	78672.930	-2986996.547
PI-03	78788.134	-2986860.365
PI-04	78797.579	-2986865.917
PI-05	78883.717	-2986946.970
PI-06	79055.397	-2986867.938
PI-07	78994.114	-2986795.016
PI-08	79335.117	-2986197.013
PI-09	79261.215	-2986170.643
PI-10	79671.802	-2986022.523
PI-11	79619.890	-2985878.644
PI-12	79621.704	-2985874.813
PI-13	80080.901	-2985711.239
END-01	80070.282	-2985681.427
START-02	80016.526	-2985715.748
PI-14	80018.664	-2985721.752
PI-15	79667.020	-2985869.680

- Legend**
- Tree
 - Peach Tree
 - Palm Tree
 - Fire Hydrants
 - Pipeline Marker
 - Water Valve
 - Water Tap
 - Stay Wire
 - Transformer
 - MV Electric Powerline
 - Fence line
 - LV Electric Powerline
 - Cadastral Boundary
 - 160mm ND uPVC
 - 200mm ND uPVC

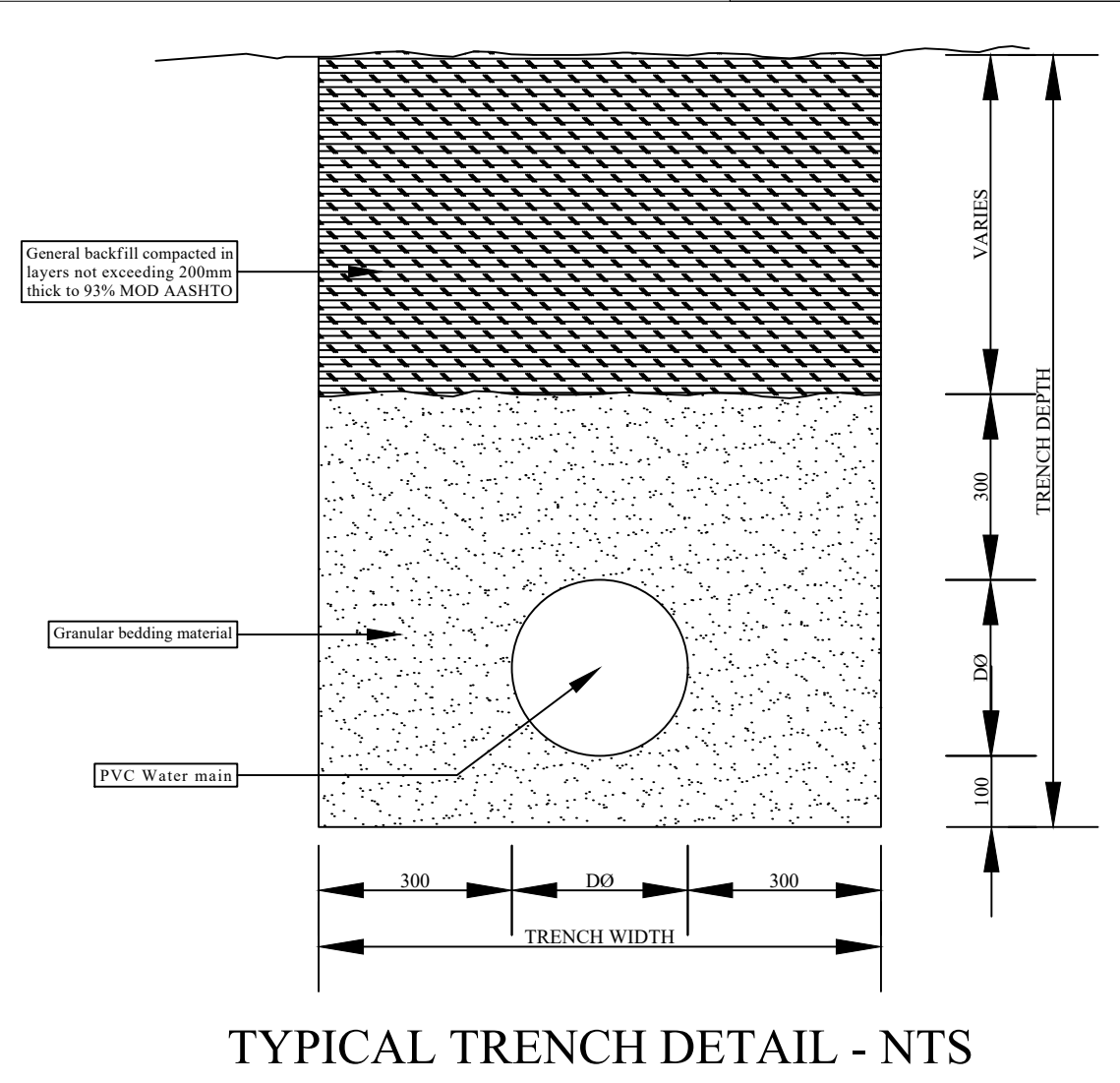
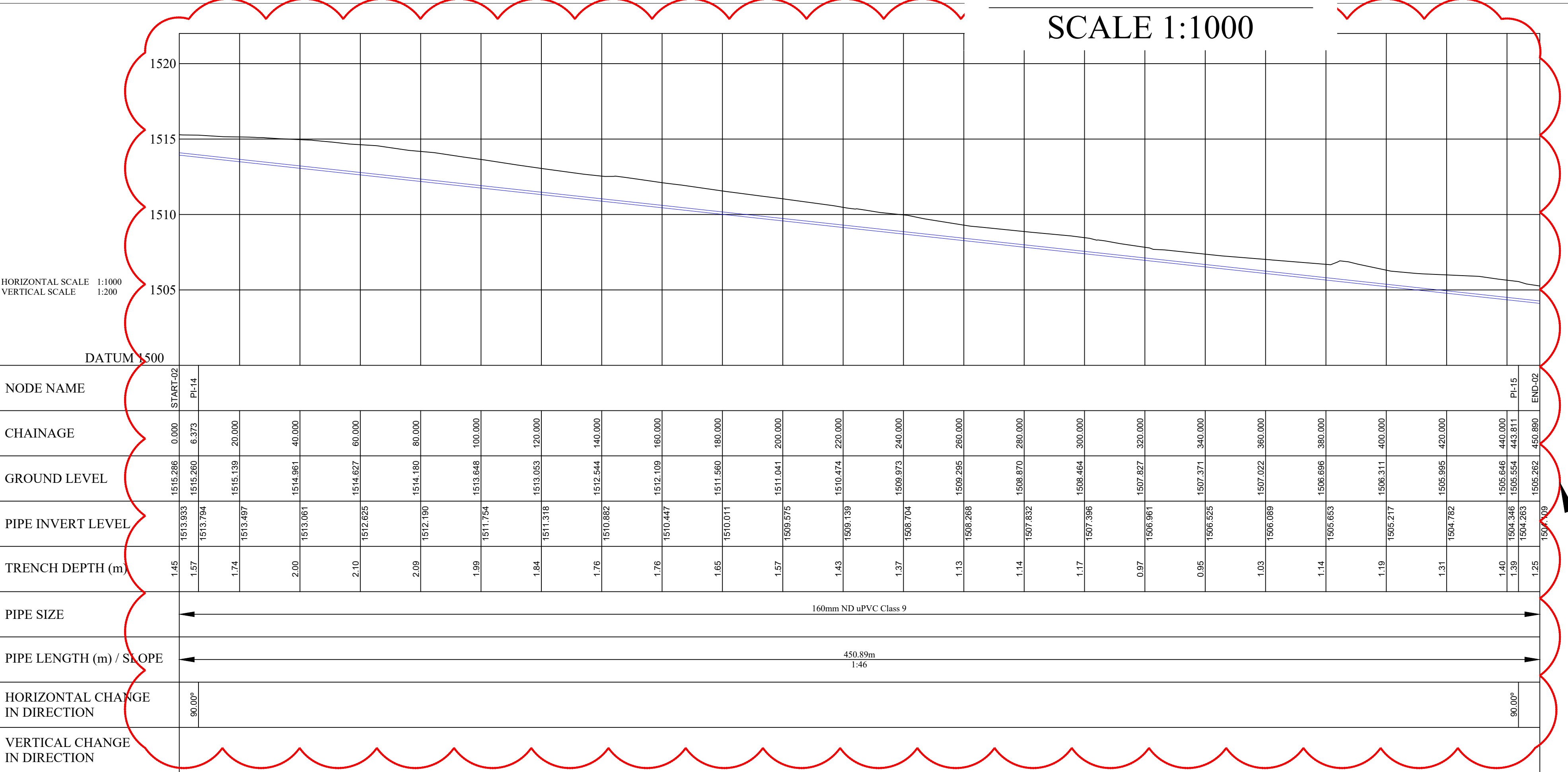
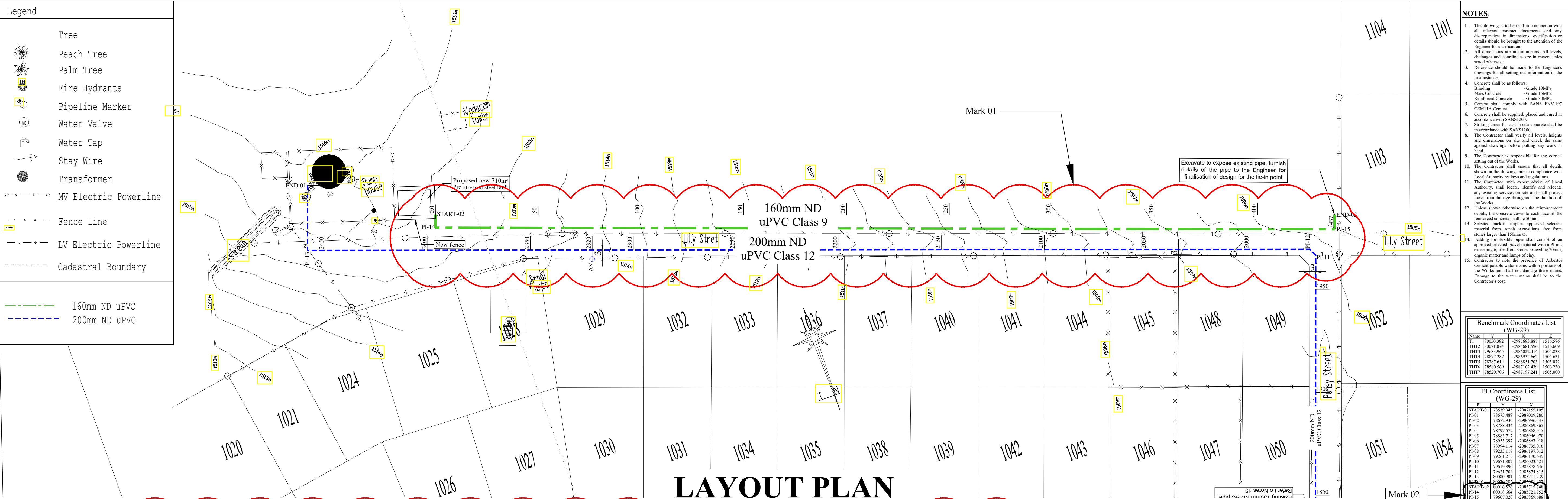
NODE NAME	CHAINAGE	GROUND LEVEL	PIPE INVERT LEVEL	TRENCH DEPTH (m)	PIPE SIZE	PIPE LENGTH (m) / SLOPE	HORIZONTAL CHANGE IN DIRECTION	VERTICAL CHANGE IN DIRECTION
START	0.00	1506.72	1502.522	4.35	200mm ND uPVC Class 12 to SANS 966-1	285.00m 1:314	45.00°	0.26°
PI-01	20.00	1505.179	1502.585	2.69				
PI-02	29.353	1504.995	1503.117	1.98				
PI-03	40.00	1504.465	1502.649	1.92				
PI-04	60.00	1504.333	1502.712	1.72				
PI-05	80.00	1504.370	1502.776	1.71				
PI-06	100.00	1504.377	1502.840	1.64				
PI-07	120.00	1504.453	1502.903	1.63				
PI-08	140.00	1504.351	1502.967	1.48				
PI-09	160.00	1504.298	1503.031	1.37				
PI-10	180.00	1504.416	1503.094	1.42				
PI-11	195.618	1504.479	1503.368	1.27				
PI-12	197.734	1504.545	1503.151	1.49				
PI-13	210.479	1504.824	1503.191	1.53				
PI-14	220.00	1504.593	1503.222	1.44				
PI-15	240.00	1504.588	1503.285	1.38				
PI-16	260.00	1504.755	1503.349	1.51				
PI-17	280.00	1504.840	1503.413	1.33				
PI-18	295.00	1504.819	1503.429	1.49				
PI-19	300.00	1504.744	1503.379	1.42				
PI-20	320.00	1504.857	1503.312	1.45				
PI-21	340.00	1504.747	1503.245	1.33				
PI-22	360.00	1504.896	1503.179	1.82				
PI-23	382.216	1504.889	1503.105	1.86				
PI-24	391.472	1505.265	1505.074	2.29				
PI-25	400.00	1504.896	1503.045	1.92				
PI-26	420.00	1504.829	1502.979	1.95				
PI-27	440.00	1504.485	1502.912	1.67				
PI-28	460.00	1504.592	1502.846	1.85				
PI-29	480.00	1504.518	1502.779	1.84				
PI-30	500.00	1504.254	1502.712	1.64				
PI-31	507.713	1504.052	1502.687	1.47				
PI-32	520.00	1504.189	1502.646	1.62				
PI-33	540.00	1504.346	1502.579	1.87				
PI-34	560.00	1504.303	1502.512	1.89				
PI-35	580.00	1503.748	1502.515	1.33				
PI-36	600.00	1504.156	1502.518	1.74				
PI-37	605.800	1503.858	1502.519	1.54				

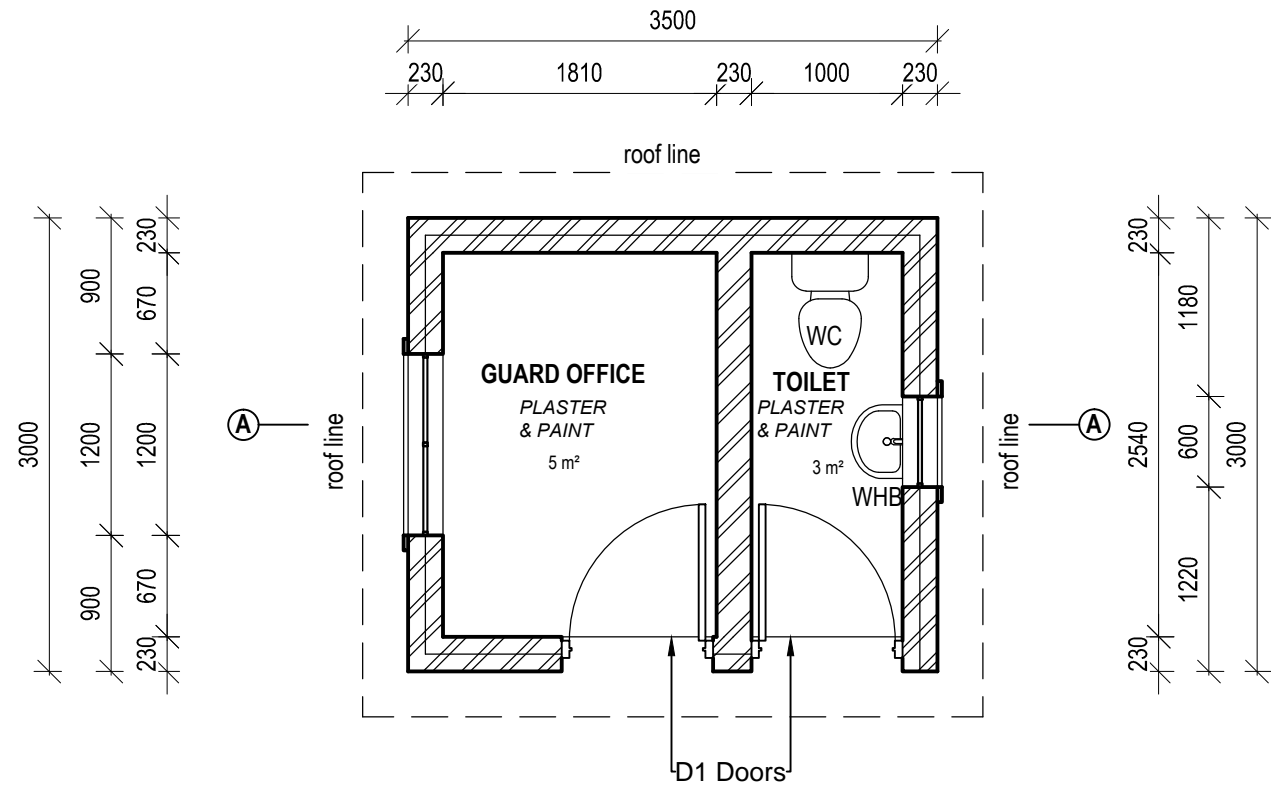
uPVC RISING MAIN - CH0.00 TO CH600.00

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21/01/2021		S.T. Khoza		L. Mnyuki		UPGRADING OF ORANJEVILLE WATER TREATMENT WORKS		AS SHOWN		N/A		Fezile Dabi		ISSUED FOR CONSTRUCTION	
28/05/2019		L. Mnyuki		P. G. Ntshane		AND CONSTRUCTION OF PRESSURE TOWER								PLAN No.	
WYSIGINGS / ADMENDMENTS		for HEAD OF DEPT.		DATE		PROPOSED WATER LAYOUT AND LONG SECTIONS - SHEET 1 OF 5								SC11 - 100-02	

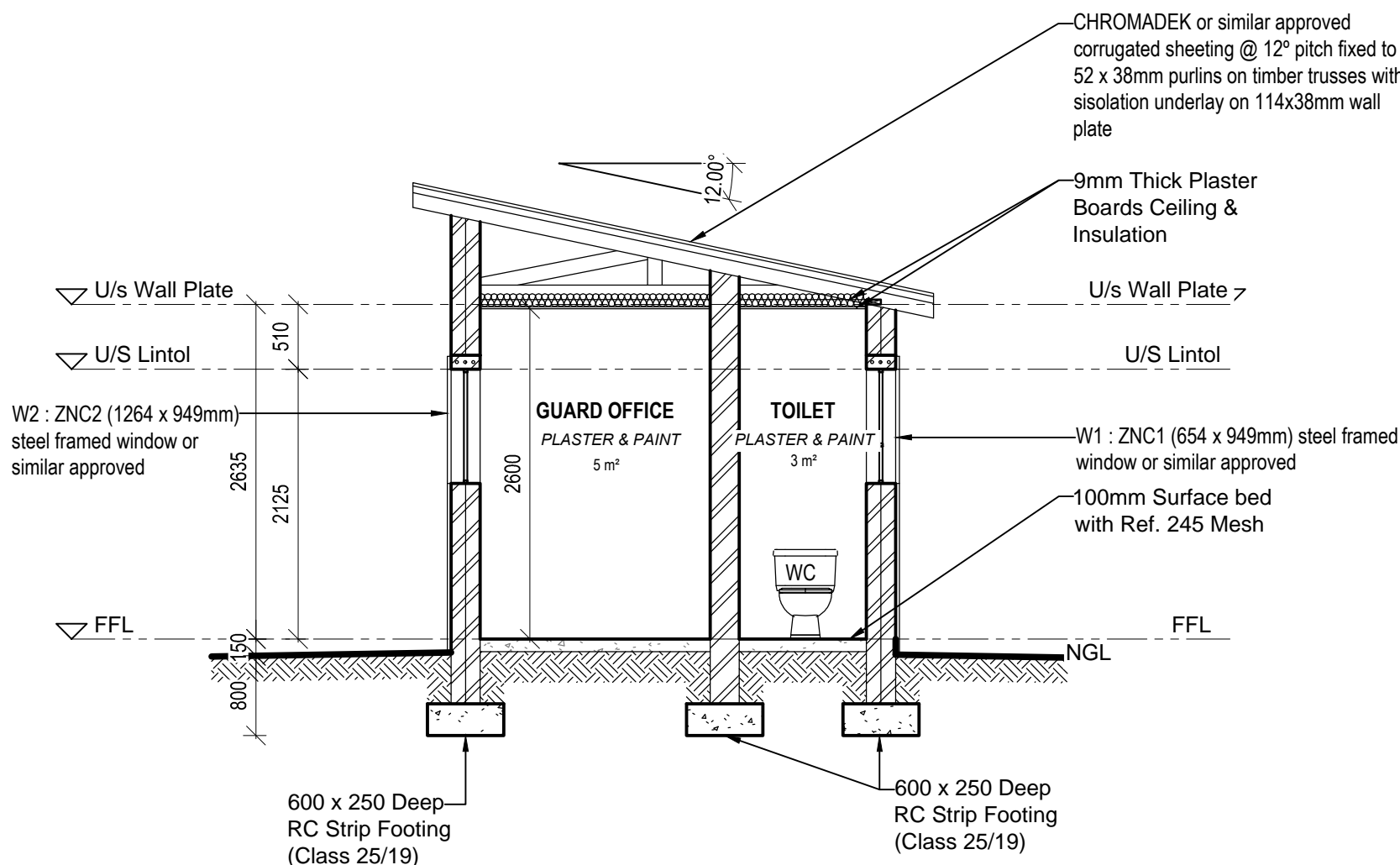


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ADJ. DIR. TEGDIENSTE						UPGRADING OF ORANJEVILLE WATER TREATMENT WORKS		AS SHOWN		AGREEMENT No.		Fezile Dabi		ISSUED FOR CONSTRUCTION	
SIGNTR.		SURVEY		for CONSULTING ENCL.		AND CONSTRUCTION OF PRESSURE TOWER								PLAN No.	
DATE		DATE		DATE		PROPOSED WATER LAYOUT AND LONG SECTIONS - SHEET 3 OF 5				N/A				SC11 - 102-01	
WYSIKINGS / AMENDMENTS		for HEAD OF DEPT.													

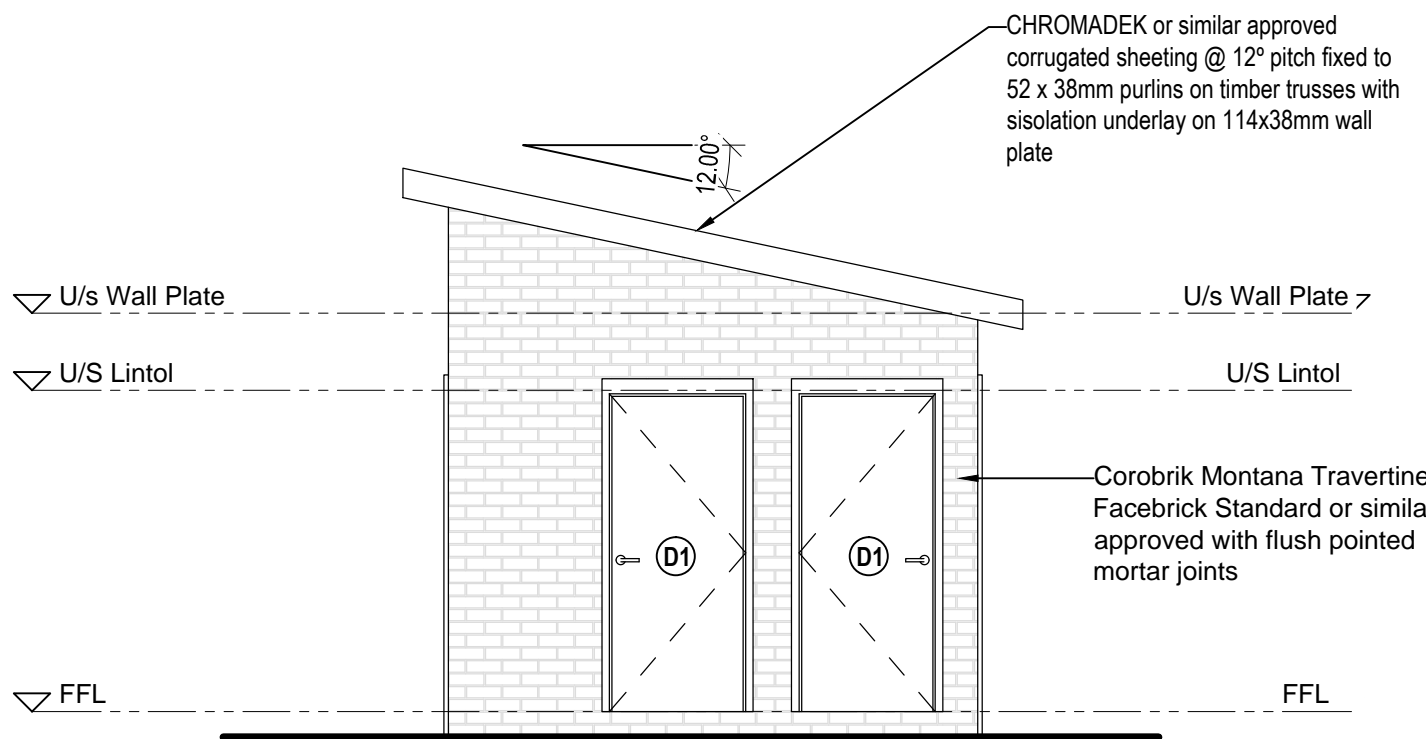




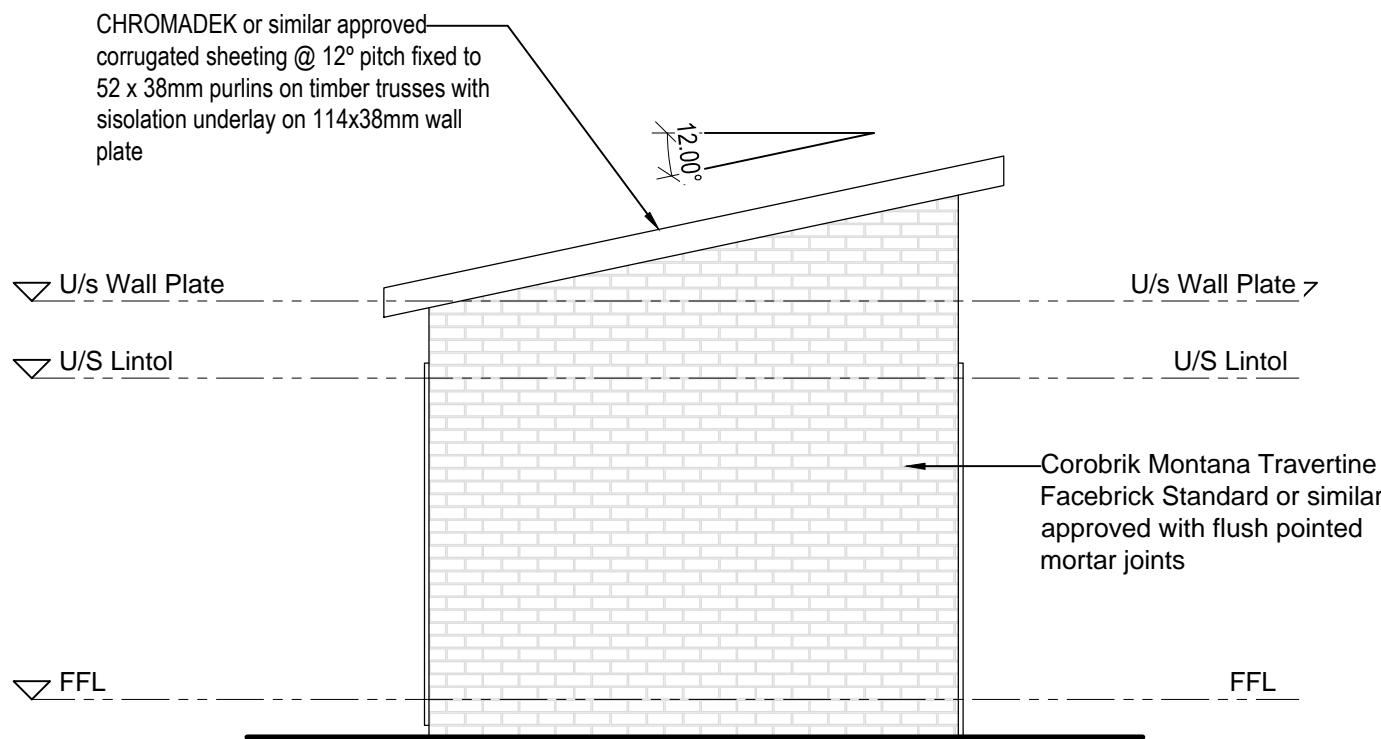
GATE HOUSE PLAN
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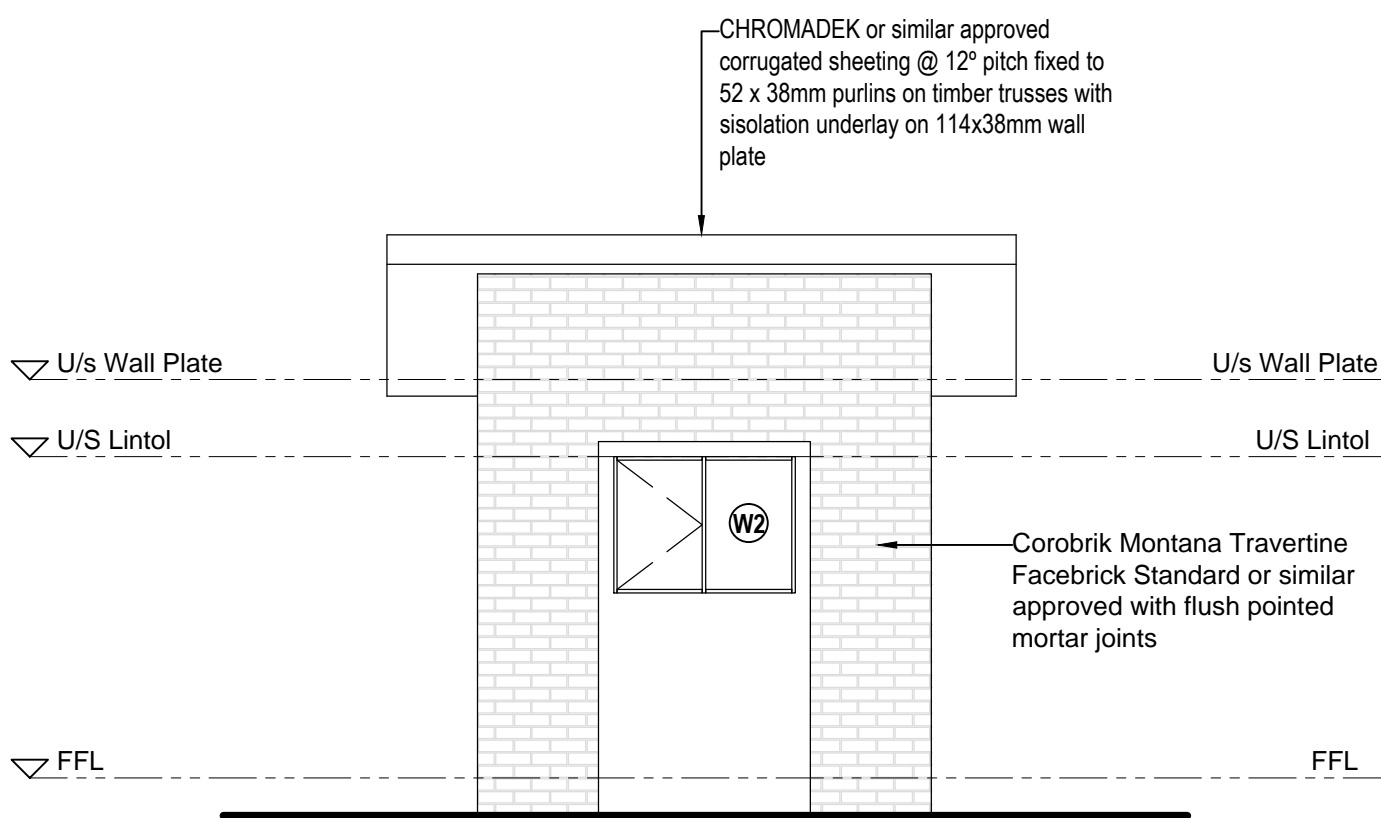
GATE HOUSE - SECTION A-A
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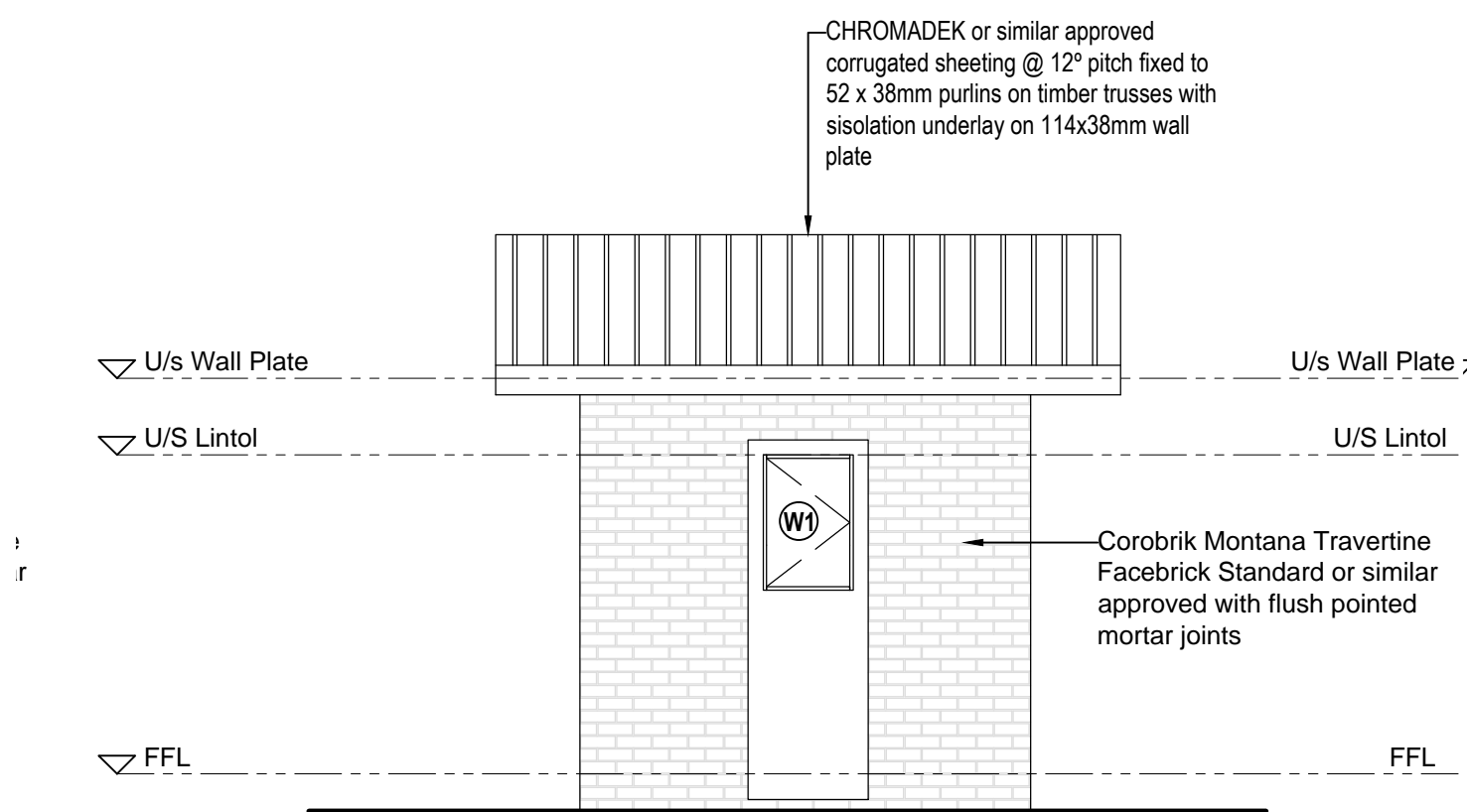
GATE HOUSE - FRONT ELEVATION
1 : 50



GATE HOUSE - BACK ELEVATION
1 : 50



GATE HOUSE - LEFT ELEVATION
1 : 50



GATE HOUSE - RIGHT ELEVATION
1 : 50

BRICKWORK NOTES
1. Corobrik Montana Travertine Facebrick Standard or similar approved with flush pointed mortar joints

FLOOR NOTES
1. 100mm Concrete Surface bed with Ref. 245 Mesh finished with 30 mm Power Floated Screed

DOORS AND WINDOWS NOTES
1. D1 : Lotus RG 10 Panel Door (813 x 2032 x 40mm) or similar approved
2. W1 : ZNC1 (654 x 949mm) steel framed window or similar approved
3. W2 : ZNC2 (1264 x 949mm) steel framed window or similar approved

ROOF NOTES
1. CHROMADEK or similar approved corrugated sheeting @ 12° pitch fixed to 52 x 38mm purlins on timber trusses with isolation underlay on 114x38mm wall plate
2. SISALATION: FR 405 or similar approved placed below sheeting

CEILING NOTES
1. 9mm Plasterboard fixed to 38 x 38mm brandering Min 600mm c/c spacing
2. INSULATION: 25 kg/m² Glassfibre insulation blanket or similar approved laid in between ceiling brandering

PLASTER AND PAINT NOTES
1. Min. 15mm Thick 4:1 cement plaster finished off with steel trowel smooth and to an even finish prepared for painting
2. All corners to have 15mm radius thumb mould junctions between concrete, brickwork and plastered wall.
3. Provide V-joints between concrete and brickwork cut straight and true to architect's approval prepared for painting with 1 undercoat and 2 coats paint.

PLUMBING AND DRAINAGE NOTES
1. WHB: Standard ceramic white stand alone basin and pedestal 570 x 480 x 860 mm
2. WC : 400mm high, of white glazed fireclay or vitreous china close coupled suite and chromium plated brass thief proof toilet roll holder fitted to wall

- Notes
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 - All relevant details, levels and dimensions must be checked on site before commencement of works. Any discrepancies to be reported to the Engineer's office immediately.

A	10/10/2023	ISSUED FOR TENDER	NZ
Rev.	Date	Description	By

Revisions

Client	Office Contact Details
	Municipal Building 10 Fichardt Street Sasolburg 4800 Tel: 016 973 8487 Web: www.metsimaholo.gov.za

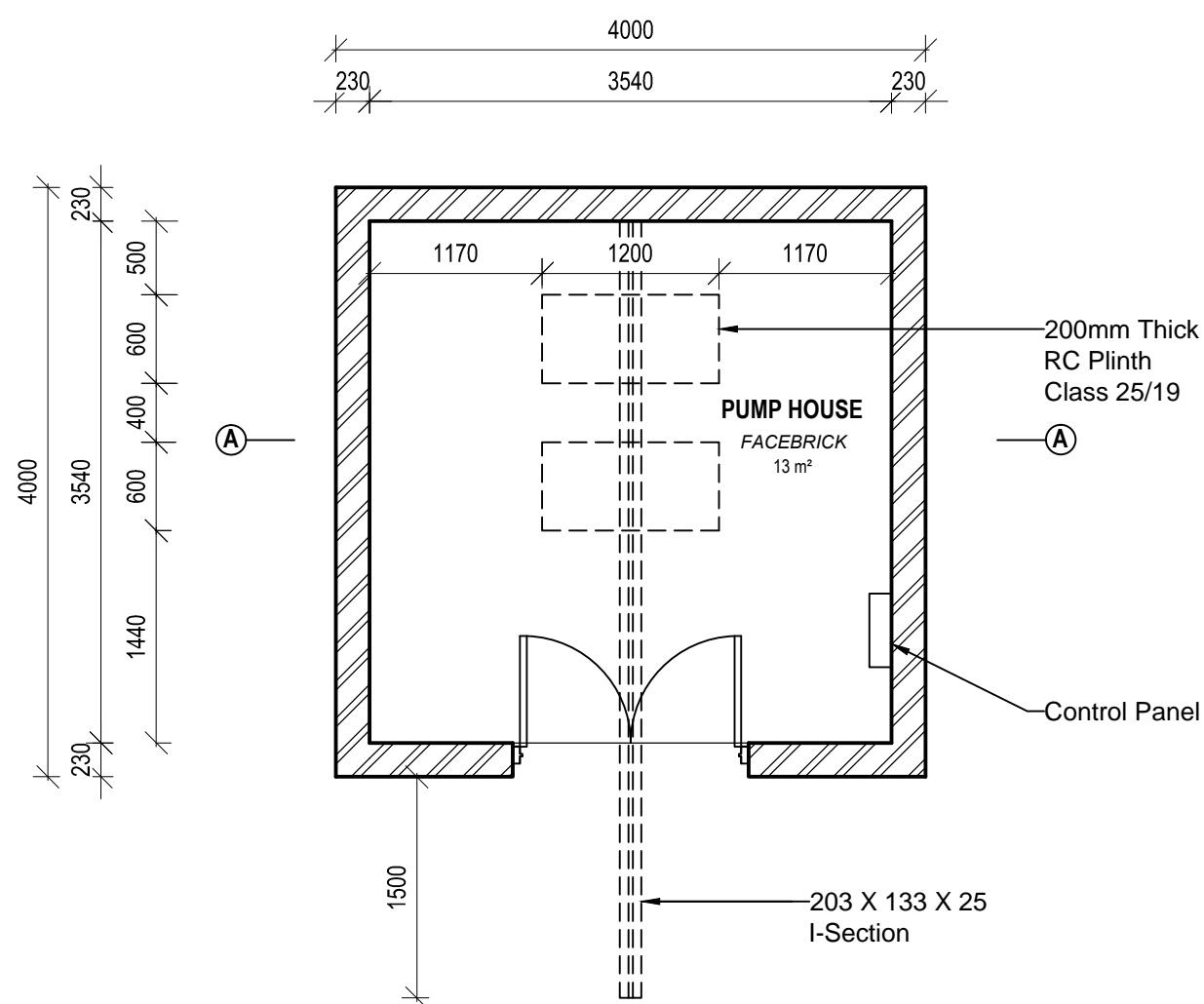
Civil/Structural	Office Contact Details
	113 River Road Lyttelton Manor Centurion 0157 Tel: 010 023 4260 Fax: 086 598 4421 Email: info@w-ce.co.za Web: www.w-ce.co.za

Project Title
**THE UPGRADING OF ORANJEVILLE
WATER TREATMENT PLANT
(WORK PACKAGE 1)**

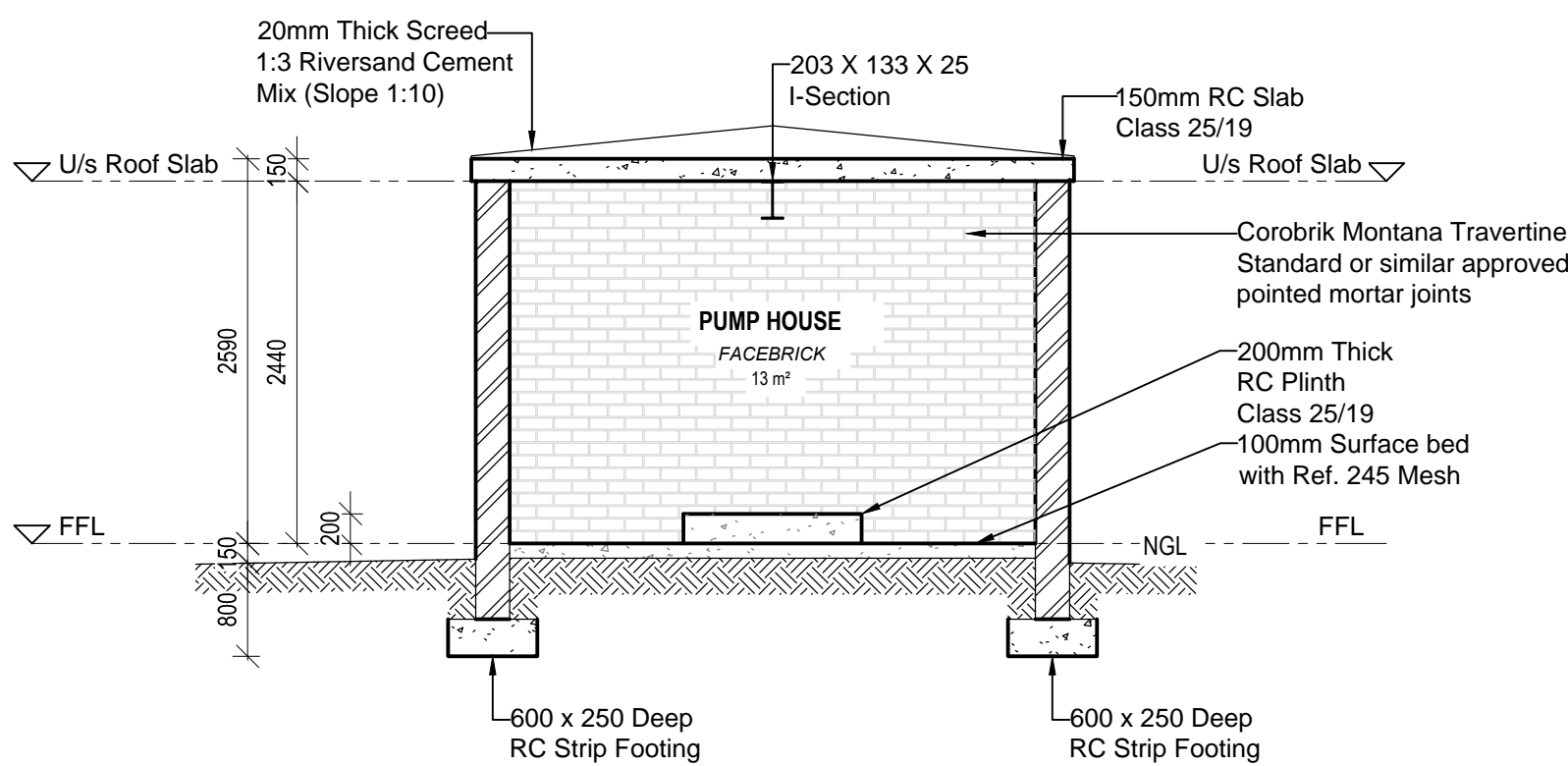
Service Title
CIVIL

Drawing Title
GUARD HOUSE

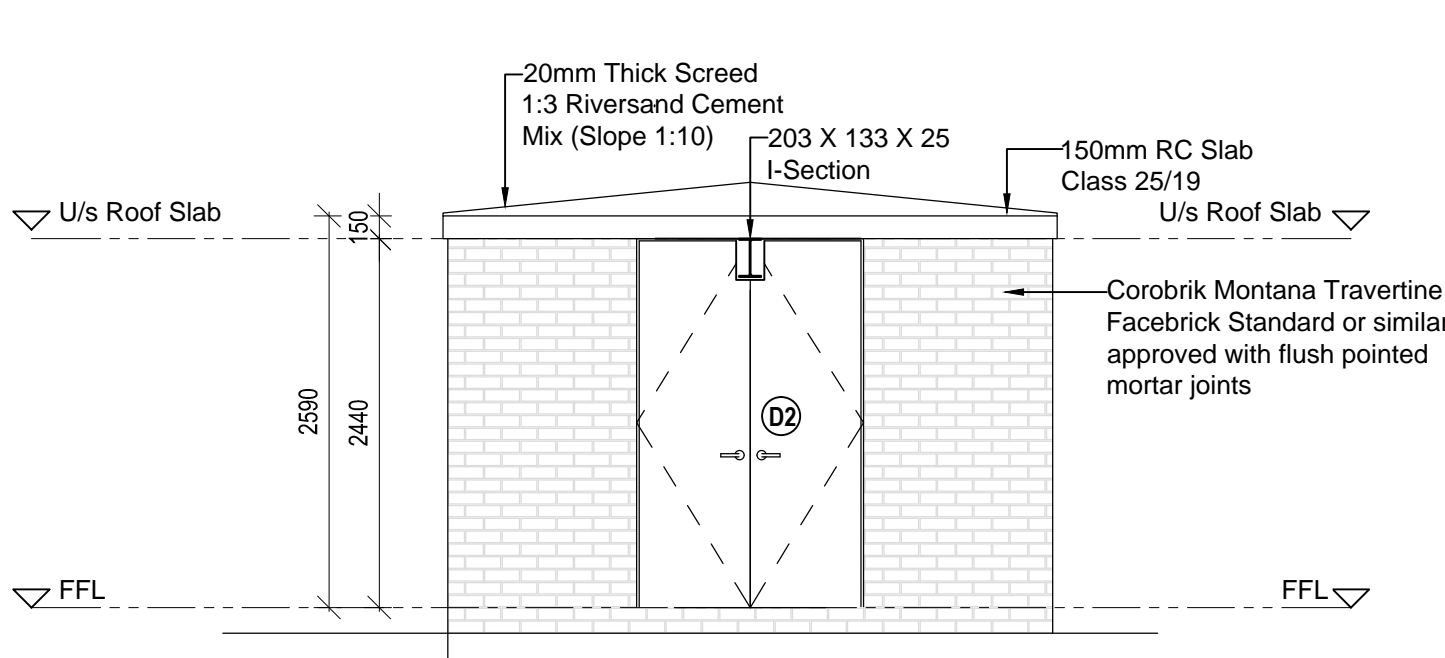
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SCALE: NTS	
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CHECKED BY: N.Z	APPROVED BY: N.Z
SIGNED BY: N.Z	PR NO: 20180424
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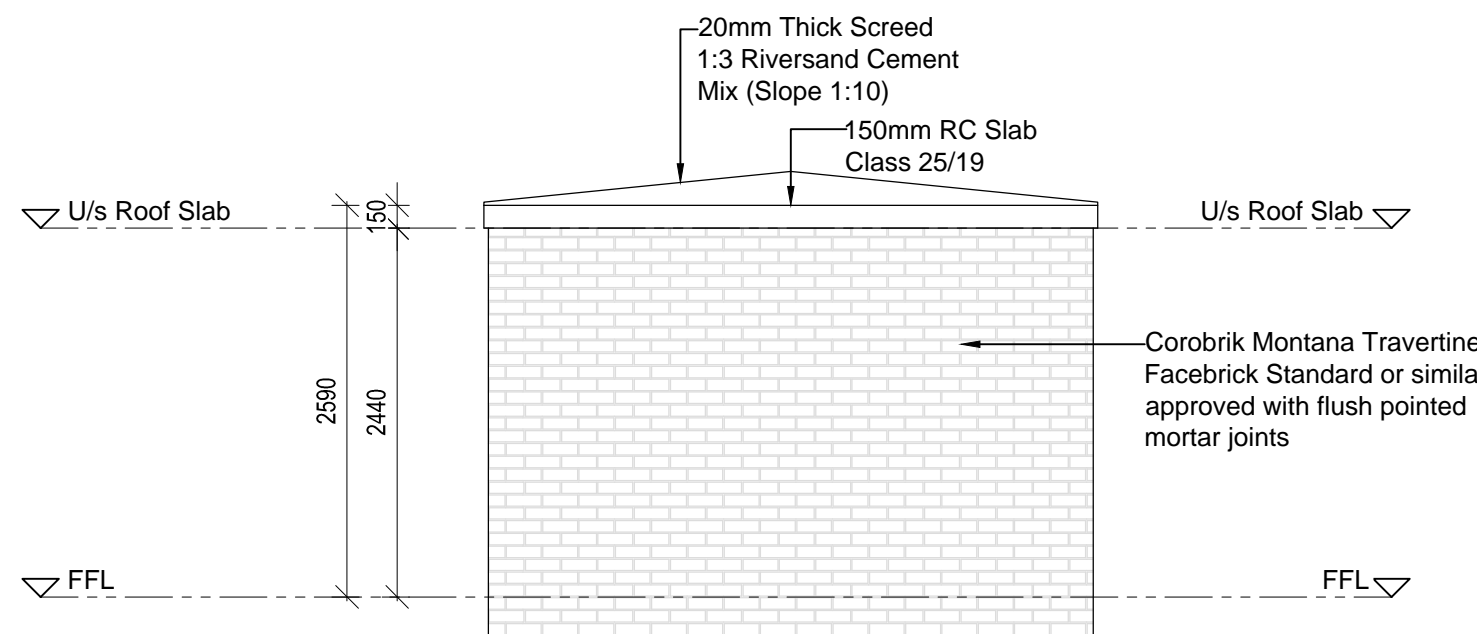
PUMP HOUSE PLAN
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PUMP HOUSE - SECTION A-A
1 : 50



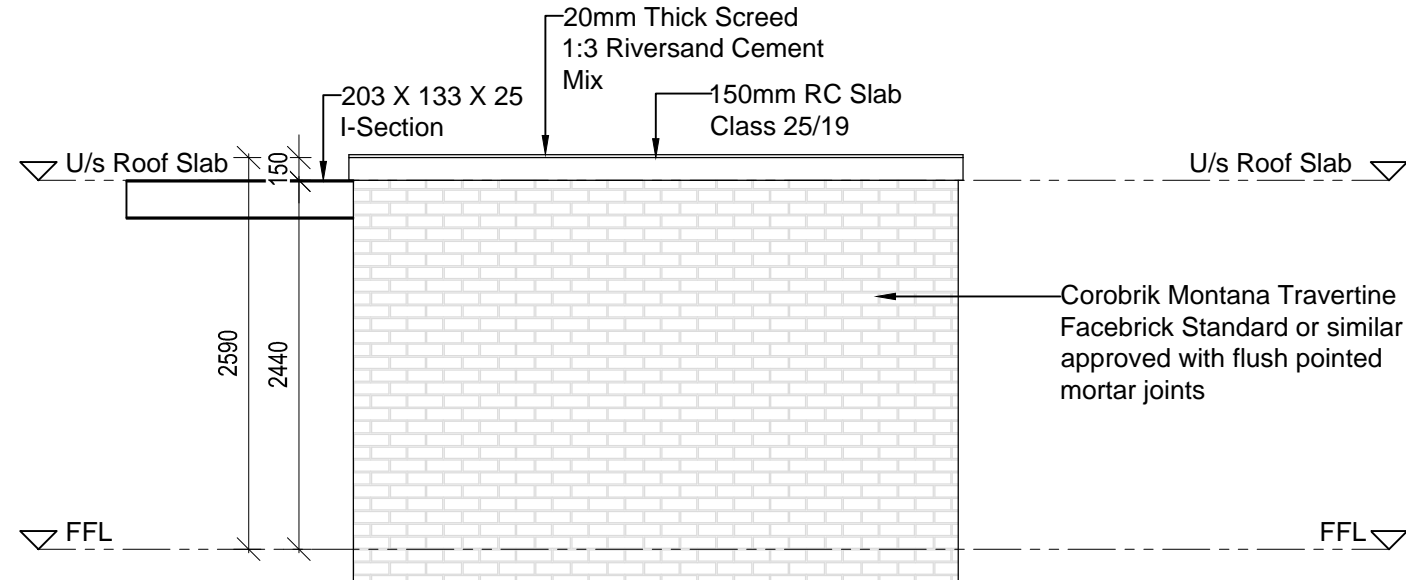
PUMP HOUSE - FRONT ELEVATION
1 : 50



PUMP HOUSE - BACK ELEVATION
1 : 50



PUMP HOUSE - LEFT ELEVATION
1 : 50



PUMP HOUSE - RIGHT ELEVATION
1 : 50

ROOF NOTES

1. RC roof slab to Engineer's detail with one layer "DERBIGUM" or similar approved SP4 waterproofing membrane with 75mm side laps and 100mm end laps, sealed by torch fusion to bitumen-primed screed at min 1:10 fall with reflective paint applied above waterproofing and topped with 100mm thick protection layer of clean 19 - 25mm crushed stone. Waterproofing to be installed by approved "DERBIGUM" or equally approved contractor under 10 year guarantee. Roof construction to be as per SANS 10400 Part L

BRICKWORK NOTES

1. Corobrik Montana Travertine Facebrick Standard or similar approved with flush pointed mortar joints

FLOOR NOTES

1. 100mm Concrete Surface bed with Ref. 245 Mesh finished with 30 mm Power Floated Screed

DOORS AND WINDOWS NOTES

1. D2 : TYPE YV Transformer Steel door (1525 x 2440mm) or similar approved

Notes

1. The design of this drawing is copyright and remains the property of Watson Consulting Engineers Reg. No 2014/237340/07
2. All work to be carried out in strict accordance with local authority, requirements, National Building Regulations, and the project specifications.
3. All relevant details, levels and dimensions must be checked on site before commencement of works. Any discrepancies to be reported to the Engineer's office immediately.

A	10/10/2023	ISSUED FOR TENDER	NZ
Rev.	Date	Description	By

Revisions

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Project Title	THE UPGRADING OF ORANJEVILLE WATER TREATMENT PLANT (WORK PACKAGE 1)
Service Title	CIVIL
Drawing Title	PUMP HOUSE

Drawing Number							Rev Nr.
P0079-CIV-WAT-0201							<div><div></div><div>A</div></div>
PROJECT STAGE:	INF	CV	DD	TEN	CON	ASB	
SCALE:	NTS						
DESIGNED BY:	P.M		DRAWN BY:			P.M	
CHECKED BY:	N.Z		APPROVED BY:			N.Z	
SIGNED BY:	N.Z		PR NO:			20180424	
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