

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY





BID NO.: SCM/BID05/2025/2026

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND
REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR**

BID DOCUMENT

CLOSING DATE: 02 OCTOBER 2025 AT 10H00

EMPLOYER: MALUTI-A-PHOFUNG MUNICIPALITY PRIVATE BAG X805 WITSIESHOEK 9870 TEL: 058 718 3700  CONTACT PERSON: MR T SELEPE	EMPLOYER'S AGENT: MPHATI & ASSOCIATES (PTY) LTD P O BOX 1631 BETHLEHEM 9700 TEL: 082 448 3809  CONTACT PERSON: MR TW BARTLEMAN
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NAME OF BIDDER:

BID AMOUNT (INCL. VAT):

PROJECT DURATION:

**NOTE: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF
THE STATE**

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

BID No.: SCM/BID05/2025/2026

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

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MALUTI-A-PHOFUNG MUNICIPALITY



NOTICE NUMBER: 01/2025/2026

BID NO. SCM/BID05/2025/2026

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

Maluti-a-Phofung Municipality hereby invite bids for Procurement of a Service Provider for Repairs and Refurbishment of Sewer Pump Station Intabazwe Corridor.

Requirements:

- Bidders must submit a Copy of Company Registration Certificate (CRC) Reflecting Active Members (Except for Sole Traders and Partnership).
- Bidders must be registered with Central Supplier Database (CSD), CSD number must be provided, and in case of a JV all parties must be registered on CSD.
- Bidders are required to submit their unique personal identification Number (Pin) issued by SARS to enable the Municipality to view the taxpayer's profile and tax Status
- All supplementary forms including municipal rates and taxes clearance certificate form contained in the bid documents must be completed in full or (submit a proof that the municipal rates and taxes are not in arrears for more than three months)
- In Bids whereby consortia/ joint ventures/ sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) Certificate/Pin/CSD Number.
- CIDB Grading of 6 CE or Higher
- Copy of Company Profile (with documents for Stage 2)
- Bidders must index their bid document properly.
- Sealed Bids should clearly indicate: **PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR. (SCM/BID05/2025/2026)**

Recommended Briefing Session: 05 September 2025 at 12h00

**Maluti-a-Phofung
Infrastructure Building**

Closing date: 02nd October 2025 at 10h00

Bid Box:
Bid Box No. "A"
Maluti-a-Phofung Municipality
Setsing Business Centre
C/O Moremoholo & Motloun streets
Phuthaditjhaba

Supply chain enquiries: M. Motsau (058)718 3878/ (058) 718 3870 – mastokim@map.fs.gov.za
palesal@map.fs.gov.za

Technical Enquiries: T. Selepe (082) 760 2635 – stsepo@gmail.com/pmu.maluti@gmail.com

Please note:

1. **No bids will be accepted from persons in the service of the state.**
2. Bid documents may be download from e-tender portal at no extra charge or alternatively may be obtainable from Maluti-A-Phofung Local Municipality Phuthaditjhaba offices at the cashiers points as of Thursday **the 21st of August 2025** after **10h00** upon payment of a **R 2 230.30** non-refundable fee (cash or bank guaranteed in favour of Maluti-a-Phofung Municipality).
3. No electronic copies, telegraphics, telefaxes and late Bids will be accepted.
4. Municipality is not bound to accept the lowest Bid.
5. Municipality reserve the right not to award the bid.
6. Municipal Supply chain management policy and Preferential Procurement Policy Framework Act No 5 of 2000 (80/20 preferential points allocation system in line with revised Procurement Regulations of 2022 by using the balance scorecard methodology) will be applied.
7. Only one submission for this bid will be considered from the bidder.
8. Failure to comply with the above mentioned conditions may invalidate your bid.
9. Should you not receive any correspondence from us within 120 days regard your bid as unsuccessful.
10. Communication will be limited to the successful bidder.

ADV. M.M MOFOKENG
MUNICIPAL MANAGER

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

T1.2 Bid Data

The conditions of Bid are the Standard Conditions of Bid as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement (see www.cidb.org.za) which are reproduced without amendments or alterations for the convenience of bidders as an annexure to the Bid Data.

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

The additional Conditions of Bid are:

Clause number	Bid Data
F.1.1	The Employer is the Maluti-a-Phofung Local Municipality
F.1.2	The Bid document issued by the employer comprises: <ul style="list-style-type: none">T1.1 Bid Notice and Invitation to BidT1.2 Bid DataT2.1 List of Returnable DocumentsT2.2 Returnable Schedules

Part 1: Agreements and Contract Data

C1.1	Form of Offer and Acceptance
C1.2	Contract Data
C1.3	Form of Guarantee
C1.4	Adjudicator's Appointment

Part 2: Pricing Data

C2.1	Pricing instructions
C2.2	Activity schedules / Schedule of Quantities

**Clause
number**

Bid Data

Part 3: Scope of Work

C3 Scope of work

Part 4: Site information

C4 Site information

F.1.3 The Employer's Agent is:

Name : Mphati & Associates (Pty) Ltd
Address : 38 Gedenk Street, P O Box 1631, BETHLEHEM, 9700
Tel : 082 448 3809
Fax : N/A
e-mail : maseru@mphati.net

F.2.1 Only those bidders that have in their employment managerial and supervisory staff that meet the requirements of the Scope of Work for labour intensive competencies for supervisory and management staff, are eligible to submit bids.

F.2.2 Only those bidders who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a **6CE or higher** class of construction work, and that are registered with the CIDB as having a track record, are eligible to submit a bid.

F.2.3 The compulsory clarification meeting is compulsory to this bid.

Refer to Tender Notice and Invitation to tender in Section T1.1 of the document.
(Section T1.1 of the document)

F.2.4 If a bidder wishes to submit an alternative bid, the only criteria permitted for such alternative bid offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent.

Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative Bid offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.

**Clause
number**

Bid Data

Acceptance of an alternative Bid Offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the Bidder, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.

The modified Pricing Data must include an amount equal to 5% of the amount bid for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.

F.2.5 Parts of each bid offer communicated on paper shall be submitted as original, plus 0 copies.

F.2.6 The Employer's address for delivery of Bid offers and identification details to be shown on each Bid offer package are:

Location of bid box:

Bid Box "A", Maluti-a-Phofung Municipality, Phuthaditjhaba

Physical address:

Setsing Business Centre, c/o Moremoholo & Motlounj Str, Phuthaditjhaba

Identification details: Bid number, title of project, the closing date and time of the bid

Postal address: Private Bag X805, WITSIESHOEK, 9870

F.2.7 The closing time for submission of bid offers is as stated in the Bid Notice and Invitation to Bid.

F.2.8 No electronically mailed, telephonic, telegraphic or facsimile bids will not be accepted.

F.2.9 The bid offer validity period is 120 days.

F.2.10 The Bidder shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.

F.2.11 The Bidder is required to submit with his Bid a Certificate of Contractor Registration issued by the Construction Industry Development Board and a copy of an **original valid** Tax Clearance Certificate issued by the South African Revenue Services.

Where a bidder adheres to the CIDB contractor class grading designation requirements through joint venture formation, such a bidder must submit the Certificates of Contractor Registration in respect of each partner of the joint venture.

Clause number	Bid Data
F.3.1	Bids will be opened immediately after the closing time for bids at the Maluti-a-Phofung Municipality's offices in Phuthaditjhaba.
F.3.2	<p>The procedure for the evaluation of responsive bids will be Method 2.</p> <p>The financial offer will be scored using Formula 2 (Option 1) where the value of W_1 is 80.</p> <p>Up to 100 minus W_1 bid evaluation points will be awarded to bidders who complete the preference schedule and who are found to be eligible for the preference claimed.</p>
F3.3	<p>Bid offers will only be accepted if:</p> <ul style="list-style-type: none"> a) The bidder has in his or her possession an original valid Tax Clearance Certificate issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations; b) The bidder is registered with the Construction Industry Development Board in an appropriate contractor grading designation; c) The bidder or any of its directors is not listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; d) The bidder 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; and e) The bidder has completed the Compulsory Enterprise Questionnaire and there is no conflict of interest which may impact on the bidder's ability to perform the contract in the best interests of the Employer or potentially compromise the bid process. f) The bidder does not have arrears on municipal rates and levies exceeding 3 months. g) The bidder has completed all forms.
F.3.4	The number of paper copies of the signed contract to be provided by the Employer is one.

Annexure: Standard Conditions of Bid

(As contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement)

F.1 General

F.1.1 Actions

The Employer and each bidder submitting a Bid Offer shall comply with these Conditions of Bid. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently.

F.1.2 Bid documents

The documents issued by the Employer for the purpose of a Bid Offer are listed in the Bid Data.

F.1.3 Interpretation

F.1.3.1 The Bid Data and additional requirements contained in the Bid Schedules that are included in the returnable documents are deemed to be part of these Conditions of Bid.

F.1.3.2 These Conditions of Bid, the Bid Data and Bid Schedules which are only required for bid evaluation purposes, shall not form part of any contract arising from the Invitation to Bid.

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

- a) **Comparative offer** means the bidder's financial offer after the factors of non-firm prices, all unconditional discounts and any other bidden parameters that will affect the value of the financial offer have been taken into consideration.
- b) **Corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the Employer or his staff or agents in the bid process;
- c) **Fraudulent practice** means the misrepresentation of the facts in order to influence the bid process or the award of a contract arising from a Bid Offer to the detriment of the Employer, including collusive practices intended to establish prices at artificial levels. and
- d) **Quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

F.1.4 Communication and the Employer's Agent

Each communication between the Employer and a Bidder shall be to or from the Employer's agent only, and in a form that can be read, copied and recorded. Writing shall be in the English language. The Employer shall not take any responsibility for non-receipt of communications from or by a bidder. The name and contact details of the Employer's agent are stated in the Bid Data.

F.1.5 The Employer's right to accept or reject any Bid Offer

F.1.5.1 The Employer may accept or reject any variation, deviation, Bid Offer, or alternative Bid Offer, and may cancel the Bid Process and reject all Bid Offers at any time before the formation of a contract. The Employer shall not accept or incur any liability to a bidder 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 Bid Process or the rejection of all responsive Bid Offers re-issue a bid covering substantially the same scope of work within a period of 6 (six) months unless only one bid was received and such bid was returned unopened to the bidder.

F.2 Bidder's obligations

F.2.1 Eligibility

Submit a Bid Offer only if the bidder complies with the criteria stated in the Bid Data and the bidder, or any of his principals, is not under any restriction to do business with Employer.

F.2.2 Cost of bidding

Accept that the Employer will not compensate the bidder for any costs incurred in the preparation and submission of a Bid Offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.

F.2.3 Check documents

Check the Bid Documents on receipt for completeness and notify the Employer of any discrepancy or omission.

F.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the Bid. Use and copy the documents issued by the Employer only for the purpose of preparing and submitting a Bid Offer in response to the invitation.

F.2.5 Reference documents

Obtain, as necessary for submitting a Bid 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 Bid Documents by reference.

F.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the Bid Document, which the Employer may issue, and if necessary, apply for an extension to the closing time stated in the Bid Data, in order to take the addenda into account.

F.2.7 Clarification meeting

The clarification meeting is applicable to this bid.

Refer to Tender Notice and Invitation to tender in Section T1.1 of the document. (Section T1.1 of the document).

F.2.8 Seek clarification

Request clarification of the Bid Documents, if necessary, by notifying the Employer at least five working days before the closing time stated in the Bid Data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the Employer (if any) may not be for the full cover required in terms of the Conditions of Contract identified in the Bid Data. Bidders are advised to seek qualified advice regarding insurance.

F.2.10 Pricing the Bid Offer

F.2.10.1 Include in the rates, prices, and the bid total of the prices (if any) all duties, taxes, except Value Added Tax (VAT), and other levies payable by the successful bidder, such duties, taxes and levies being those applicable 14 days before the closing time stated in the Bid Data.

F2.10.2 Show VAT payable by the Employer separately as an addition to the bid 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 Bid 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 Bid Documents, except to comply with instructions issued by the Employer, or necessary to correct errors made by the bidder. All signatories to the Bid Offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative Bid Offers

F.2.12.1 Submit alternative Bid Offers only if a main Bid Offer, strictly in accordance with all the requirements of the Bid Documents, is also submitted. The alternative Bid Offer is to be submitted with the main Bid Offer together with a schedule that compares the requirements of the Bid Documents with the alternative requirements the bidder proposes.

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

F.2.13 Submitting a Bid Offer

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

F.2.13.2 Return all returnable documents to the Employer after completing them in their entirety, in **black ink**.

F.2.13.3 Submit the parts of the Bid Offer communicated on paper as an original plus the number of copies stated in the Bid 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 Bid Offer where required in terms of the Bid Data. The Employer will hold all authorized signatories liable on behalf of the bidder. Signatories for bidders 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 Bid Offer.

F.2.13.5 Seal the original and each copy of the Bid Offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the Employer's address and identification details stated in the Bid Data, as well as the bidder's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the Bid Data, place and seal the returnable documents listed in the Bid 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 Bid Data, as well as the bidder's name and contact address.

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

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

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

Accept that Bid 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 Bid Offer at the address specified in the Bid Data not later than the closing time stated in the Bid Data. Proof of posting shall not be accepted as proof of delivery. The Employer shall not accept Bid Offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the Bid Data. It is the responsibility of the bidder to ensure that the bid is placed in the correct bid box.

F.2.15.2 Accept that, if the Employer extends the closing time stated in the Bid Data for any reason, the requirements of these Conditions of Bid apply equally to the extended deadline.

F.2.16 Bid Offer validity

F.2.16.1 Hold the Bid Offer(s) valid for acceptance by the Employer at any time during the validity period stated in the Bid Data after the closing time stated in the Bid Data.

F.2.16.2 If requested by the Employer, consider extending the validity period stated in the Bid Data for an agreed additional period.

F.2.17 Clarification of Bid offer after submission

Provide clarification of a Bid Offer in response to a request to do so from the Employer during the evaluation of Bid offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the total of the prices or substance of the Bid offer is sought, offered, or permitted. The total of the prices stated by the bidder shall be binding upon the bidder.

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred bidder 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 Bid Offer, the bidder'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 bidder 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 Bid Offer as non-responsive.

- F.2.18.2** Dispose of samples of materials provided for evaluation by the Employer, where required.
- F.2.19** **Inspections, tests and analysis**
- Provide access during working hours to premises for inspections, tests and analysis as provided for in the Bid 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 Bid Documents**
- If so, instructed by the Employer, return all retained Bid Documents within 28 days after the expiry of the validity period stated in the Bid Data.
- F.2.23** **Certificates**
- Include in the bid submission or provide the employer with any certificates as stated in the Bid Data.
- F.3** **The Employer's undertakings**
- F.3.1** **Respond to clarification**
- Respond to a request for clarification received up to five working days prior to the bid closing time stated in the Bid Data and notify all bidders who drew procurement documents.
- F.3.2** **Issue addenda**
- If necessary, issue addenda that may amend or amplify the Bid Documents to each bidder during the period from the date of the Bid Notice until seven days before the bid closing time stated in the Bid Data. If, as a result a bidder applies for an extension to the closing time stated in the Bid Data, the Employer may grant such extension and, will then notify it to all bidders who drew documents. However, due to the emergency nature of this project, extension of the closing time will only be granted under exceptional circumstances.
- F.3.3** **Return late Bid Offers**
- Return Bid offers received after the closing time stated in the Bid Data, unopened, (unless it is necessary to open a bid submission to obtain a forwarding address), to the bidder concerned.

F.3.4 Opening of bid submissions

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

F.3.4.2 Announce at the opening held immediately after the opening of bid submissions, at a venue indicated in the Bid Data, the name of each bidder whose Bid Offer is opened, the total of his prices, preferences claimed and time for completion, if any, for the main Bid 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 Were stated in the Bid Data that a two-envelope system is to be followed, open only the technical proposal of valid bids in the presence of bidders' agents who choose to attend at the time and place stated in the Bid Data and announce the name of each bidder whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by bidders, then advise bidders 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 bidders, who score in the quality evaluation above the minimum number of points for quality stated in the Bid Data, and announce the score obtained for the technical proposals and the total price and any preferences claimed.

Return unopened financial proposals to bidders whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a bidder to influence the processing of Bid Offers and instantly disqualify a bidder (and his Bid Offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

Determine, on opening and before detailed evaluation, whether each Bid Offer properly received:

- a) meets the requirements of these Conditions of Bid;
- b) has been properly and fully completed and signed; and
- c) is responsive to the other requirements of the Bid Documents.

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

- detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work
- change the Employer's or the bidder's risks and responsibilities under the contract, or
- affect the competitive position of other bidders presenting responsive bids, if it were to be rectified.

Reject a non-responsive Bid Offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

F.3.9 Arithmetical errors

Check responsive Bid Offers for arithmetical errors, correcting them in the following manner:

- Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- If a Schedules of Quantities (or schedule of rates) apply and there is an error in the line-item total resulting from the product of the unit rate and the quantity, the line-item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line-item total as quoted shall govern, and the unit rate will be corrected.
- Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the bidder's addition of prices, the total of the prices shall govern and the bidder will be asked to revise selected item prices (and their rates if a schedule of quantities applies) to achieve the bid total of the prices.

Consider the rejection of a Bid Offer if the bidder does not correct or accept the correction of his arithmetical errors in the manner described above.

F.3.10 Clarification of a Bid Offer

Obtain clarification from a bidder on any matter that could give rise to ambiguity in a contract arising from the Bid Offer.

F.3.11 Evaluation of Bid Offers

F3.11.1 General

Use Bid Evaluation Committee established in terms of the Municipal Finance Management Act. Reduce each responsive Bid Offer to a comparative offer and evaluate it using the bid evaluation method that is indicated in the Bid Data and described below:

Criteria to be adopted at the tender evaluation stage

The criteria of evaluation will be in Four (04) stages as listed below:

- Stage 1: Test for responsiveness (Pre-evaluation)
- Stage 2: Test for functionality
- Stage 3: Preferential points scoring and financial scoring
- Stage 4: Risk assessment

F3.11.2 Stage 1: Test for responsiveness

The following documents will be required to Test for responsiveness

(The evaluation will not only use these documents, but bidders will need to look at the tender document for further details). Failure to comply with any of the following documents will lead to a disqualification.

- The bidder is registered on CSD (Central Supplier Database).
- The bidder must be a Vat Vendor and in good standing with SARS according to CSD.
- Certified Copy of Company Registration reflecting names and identity numbers of active shareholding members must be attached
- In case of the Joint Venture all parties must be Registered on CSD.
- In case of a JV Certified Copy of Company Registration Certificate reflecting names and identity numbers of active shareholding members of all parties must be attached.
- Copy of JV agreement (in case of JV) must be attached.
- Municipal Rates and Taxes Account not older than 90 days or a lease agreement must be attached. The lease agreement must be accompanied by Landlord municipal rates and taxes account. The account should not be in arrears for more than 90 days. In a case where the company does not have operating premises, supply rates and taxes account of all directors.
- In case of a JV Municipal Rates and Taxes account not older than 90 days or a lease agreement of all parties must be attached with Landlord's municipal rates and taxes account.
- No bid will be considered from the persons in the Service/Employment of the State/Government

- Bidder/s who fails to submit an original or certified copy of a B-BBEE Certificate will forfeit B-BBEE points.
- Successful service providers will be the one who scores the highest points.
- Proof of purchase or receipt for bid document must be attached on the bid document.
- Bid must be valid for a minimum period of 90 days
- CIDB grading of 6CE or higher.
- Three years audited financial statement
- Bidders are to index their bid document – Failure to do so will result in disqualification.
- Bidders are adhere to the index – Failure to do so will result in disqualification or forfeiture of points

F3.11.3 Stage 2: Test for Functionality

The following documents will be required to test for functionality

A bidder must attain a minimum of score of 91 points or 70% to qualify for further evaluation.

Table 1: Evaluation Criteria

FUNCTIONALITY SUMMARY

Evaluation criteria	Max Points	Points Distribution	Typical PoE						
Bidders Work Experience	30	<p>Projects above R10 million, full points as stated below (depending on number of projects completed). Projects between R 5 million and up to R10 million, half points will be provided</p> <p>Categories</p> <table><tr><td>Projects above R15 million, 3 or more Projects = 30 Points</td><td>Projects between R5 million and up to R20 million 3 or more Projects = 15 Points</td></tr><tr><td>2 Projects = 20 Points</td><td>2 Projects = 10 Points</td></tr><tr><td>1 Project = 10 Points</td><td>1 Project = 5 Points</td></tr></table> <p>0 points – company with no relevant project completed.</p> <p>Only construction of sewer pump station contracts from government or state-owned entities will be considered.</p>	Projects above R15 million, 3 or more Projects = 30 Points	Projects between R5 million and up to R20 million 3 or more Projects = 15 Points	2 Projects = 20 Points	2 Projects = 10 Points	1 Project = 10 Points	1 Project = 5 Points	<p>Provide these Three:</p> <ol style="list-style-type: none">1. Appointment letter OR signed form of offer and acceptance.2. Signed completion certificate3. Reference from the client (with client's stamp) with a contact person <p>Failure to submit anyone of the above will result in forfeiture of points</p>
Projects above R15 million, 3 or more Projects = 30 Points	Projects between R5 million and up to R20 million 3 or more Projects = 15 Points								
2 Projects = 20 Points	2 Projects = 10 Points								
1 Project = 10 Points	1 Project = 5 Points								

Evaluation criteria	Max Points	Points Distribution	Typical PoE
Project Personnel	45	<p>Allocated personnel to this project. Provide organogram for this project.</p> <p>CE – Civil Engineering</p> <p>Contract's Manager [B-degree (min). To spend minimum of 50% on site] 15 points: CE project experience of 10years or more 10 points: CE project experience of 5 - 9 years and 11 months 5 points: CE project experience of less than 5 years</p> <p>AND</p> <p>Site Agent N.Dip Civil Engineering (min]. To spend minimum of 80% on site] 15 points: CE project experience of 7 years or more 10 points: CE project experience of 3 - 6 years and 11 months 5 points: CE project experience of less than 3 years</p> <p>AND</p> <p>Safety Officer as a SACPCMP registered professional. [To spend minimum of 60% on site] 15 points: CE project experience of 7years or more 10 points: CE project experience of 3 - 6 years and 11 months 5 points: CE project experience of less than 3 years</p>	<p>Provide organogram, designated for this project and for each person submit:</p> <ol style="list-style-type: none"> 1. CV/Resume 2. Certified qualifications <p>Failure to submit an organogram indicating personnel stated in the immediate left column will result in forfeiture of points</p>

Evaluation criteria	Max Points	Points Distribution	Typical PoE
Available Equipment	30	<p>Bidder to provide eNatis certificate or Pre-lease agreement with eNatis certificate.</p> <p>TLB: 10 points</p> <p>Tipper truck: 10 points</p> <p>0 points for non-submission of relevant document or for non-submission.</p>	<p>Proof of ownership by the bidder – eNATIS certificate</p> <p>OR</p> <p>A letter of commitment to lease (indicating project details) and Lessor's proof of equipment ownership. – eNATIS certificate</p>
Project Preparedness	20	<p>Only work programme that indicated duration of not more than 10 months will be considered.</p> <p>Only cashflow indicating expenditure of R10 million in the first 5 month will be considered.</p> <p>20 points: Programme of works (with critical path) and Cashflow</p> <p>10 points: Programme of works (without critical path) and Cashflow</p> <p>7 points: Programme only (with critical path)</p> <p>5 points: Programme only (without critical path)</p> <p>2 points: Cashflow only</p>	<p>Work Programme (in MS project or similar) and Cash flow show</p>
Socio Economic	15	<p>A commitment to sub-contract</p> <p>15 points: 30% and above</p> <p>0 points for non-submission or different submission</p>	<p>A signed commitment in the bid document to sub-contract to a local contractor</p>
Total Points	140	Minimum point to attain	98 (70%)

Table 2: Price Points and PPPFA Points

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

80/20

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

Where

= Points scored for price of tender under consideration

P_t = Price of tender under considerationP_{min} = Price of lowest acceptable tender

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system) (CSD will be Used to Check For Points Allocation)
At least 50% HDI ownership	5
At least 50% Youth ownership	5
At least 50% Woman ownership	4
Locality: Maluti-A-Phofung – 6 Thabo Mofutsanyana – 4 Free State – 2 Outside Free State - 0	6
TOTAL	20

Locality will be determined using CSD registered address.

F3.11.5 Stage 4 – Risk Assessment or Analysis

Table 3: Risk Assessment

Critical Section		
Risk type	Category	Comment
High Risk, Low rate	Deviation < -10%	The bid will be rejected unless the bidder indicates clearly in his returnable how will he/she be able to complete the project at such low rate(s)
Low Risk, High Rate	Deviation > +10%	Negotiations will be entered to if the bidder receives highest evaluation score

The base rate will be used for this purpose.

NB: Only on satisfaction of all stages can a bidder be appointable. The municipality reserves the right to appoint or not to appoint.

F.3.11.2 Scoring financial offers

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

$N_{FO} = W_1 \times A$ where:
 N_{FO} = the number of bid evaluation points awarded for the financial offer.
 W_1 = the maximum possible number of bid evaluation points awarded for the financial offer as stated in the Bid Data.
 A = a number calculated using either formulas 1 or 2 below as stated in the Bid Data.

Formula	Basis for comparison	Option 1	Option 2
1	Highest price or discount	$(1 + \frac{(P - P_m)}{P_m})$	P/P_m
2	Lowest price or percentage commission/fee	$(1 - \frac{(P - P_m)}{P_m})$	P_m/P

Where:

P_m = the comparative offer of the most favourable Bid Offer.
 P = the comparative offer of Bid Offer under consideration.

F.3.11.3 Scoring quality (functionality)

Score quality in each of the categories stated in the Bid Data and calculate total score for quality.

F.3.12 Insurance provided by the Employer

If requested by the proposed successful bidder, submit for the bidder'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 Bid Offer

F.3.13.1 Accept Bid Offer only if the bidder satisfies the legal requirements stated in the Bid Data.

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

F.3.14 Notice to unsuccessful Bidders

After the successful bidder has acknowledged the employer's notice of acceptance, notify other bidders that their Bid Offers have not been accepted. This will only be done upon receipt of a written request.

F.3.15. Prepare contract documents

If necessary, revise documents that shall form part of the contract and that were issued by the Employer as part of the Bid Documents to take account of:

- a) addenda issued during the bid period,
- b) inclusion of some of the returnable documents,
- c) other revisions agreed between the Employer and the successful Bidder, and
- d) the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.16 Issue final contract

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

F.3.17 Complete adjudicator's contract

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

F.3.18 Provide copies of the contracts

Provide to the successful bidder the number of copies stated in the Bid Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

T2.1 List of Returnable Documents

The Bidder must complete the following returnable documents:

1. Returnable schedules required only for bid evaluation purposes

- Record of Addenda to Bid Document
- Compulsory Enterprise Questionnaire
- Certificate of authority for joint ventures (where applicable)
- Schedule of Subcontractors
- Schedule of Plant and Equipment
- Schedule of the Bidder's Experience
- Proposed Amendments and Qualifications
- MBD 1 – Invitation to BID
- MBD 2 - Tax Clearance Requirements
- MBD 4 - Declaration of Interest
- MBD 5 - Declaration for procurement above R10,0m (excluding VAT)
- MBD 6.1 - Preference Points Claim form in terms of the Preferential Procurement Regulations, 2022
- MBD 8 - Declaration of Bidder's past Supply Chain Management Practices
- MBD 9 – Certificate of independent BID determination
- Certified copy of Municipal Rates & Taxes clearance certificate

2. Other documents required only for bid evaluation purposes

- Certificate of Contractor Registration issued by the Construction Industry Development Board (CIDB).
- An original valid Tax Clearance Certificate issued by the South African Revenue Services (the standard tax clearance certificate requirements and application form are available from the consultants).
- Certified copy of Company Registration Certificate.
- Proof of registration on the Central Supplier Database (CSD).
- BBBEE Certificate.
- Copy of company profile.
- Bank Rating Certificate.

3. Returnable schedules that will be incorporated into the Contract

- Preferencing Schedule (Municipal Bidding Document forms)

4. Other documents that will be incorporated into the contract

- Bidder's Occupational Health and Safety Plan
- Method Statement
- Skills Transfer Plan

5. The offer portion of the C1.1 Offer and Acceptance
6. C1.2 Contract Data (Part 2)
7. C2.2 Bill of Quantities

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR**

T2.2 Returnable Schedules

RECORD OF ADDENDA TO BID DOCUMENT

We confirm that the following communications received from the Employer before the submission of this Bid Offer, amending the Bid Documents, have been taken into account in this Bid Offer:

	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		

Attach additional pages if more space is required.

Signed

Date

Name

Position

Bidder

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.

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number

Close corporation number

Tax reference number

Section 6: Record 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 an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | |
| <input type="checkbox"/> an official of any municipality or municipal entity | |

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 an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> an official of any municipality or municipal entity | |

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

*insert separate page if necessary

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

- authorizes the Employer to verify the tax clearance certificate from the South African Revenue Services that my/our tax matters are in order;
- 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 Bid 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 Bidding entities submitting Bid offers and have no other relationship with any of the Bidders 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**

Bidder

CERTIFICATE OF AUTHORITY FOR JOINT VENTURES

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this Bid offer in Joint Venture and hereby authorise

Mr/Me

authorised signatory of the company

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

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature: Name Designation
		Signature: Name Designation
		Signature: Name Designation
		Signature: Name Designation

SCHEDULE OF PROPOSED SUB-CONTRACTORS

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

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

We confirm that all sub-contractors who are contracted to construct a house are registered as home builders with the National Home Builders Registration Council.

	Name and address of proposed sub-contractor	Nature and extent of work	Previous experience with sub-contractor
1.			
2.			
3.			
4.			
5.			

Signed **Date**

Name **Position**

Bidder

SCHEDULE OF PLANT AND EQUIPMENT

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

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

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

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

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed _____ **Date** _____

Name	Position
------	----------

Bidder

SCHEDULE OF THE BIDDER'S EXPERIENCE

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

Employer, contact person and telephone number.	Description of contract	Value of work incl. VAT (R)	Date completed

Note: Completion Certificated to be attached

Signed **Date**

Name **Position**

Bidder

PROPOSED AMENDMENTS AND QUALIFICATIONS

The Bidder should record any deviations or qualifications he may wish to make to the Bid documents in this Returnable Schedule. Alternatively, a Bidder may state such deviations and qualifications in a covering letter to his Bid and reference such letter in this schedule.

The Bidder's attention is drawn to clause F.3.8 of the Standard Conditions of Bid referenced in the Bid Data regarding the Employer's handling of material deviations and qualifications.

Page	Clause or item	Proposal

Signed _____ **Date** _____

Name _____ **Position** _____

Bidder _____

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE MALUTI-A-PHOFUNG LOCAL MUNICIPALITY					
BID NUMBER:	SCM/BID05/2025/2026	CLOSING DATE:	02 October 2025	CLOSING TIME:	10:00
DESCRIPTION	PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
MALUTI-A-PHOFUNG MUNICIPALITY					
SETSING BUSINESS CENTRE					
C / O MOREMOHOLO AND MOTLOUNG STREETS					
PHUTHADITJHABA					
9870					
BID BOX "A"					
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:	MAAA
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [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 THE QUESTIONNAIRE BELOW]
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
DEPARTMENT	SCM		CONTACT PERSON	Mr T Selepe	
CONTACT PERSON	M Motsau		TELEPHONE NUMBER	082 760 2635	
TELEPHONE NUMBER	058 718 3878 / 058 718 3870		FACSIMILE NUMBER	N/A	
FACSIMILE NUMBER	N/A		E-MAIL ADDRESS	stsepo@gmail.com / pmu.maluti@gmail.com	
E-MAIL ADDRESS	mastokim@map.fs.gov.za palesal@map.fs.gov.za				

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 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 VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
- 2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS 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 PIN 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

- IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO
- DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO
- DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO
- DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO
- IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO
- IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.**

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

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

TAX CLEARANCE REQUIREMENTS

IT IS A CONDITION OF BIDDING THAT:

1. The taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with the Receiver of Revenue to meet his/her tax obligations.
2. The attached form "Application for Tax Clearance Certificate (in respect of bidders)", must be completed in all respects and submitted to the Receiver of Revenue where the bidder is registered for tax purposes. The Receiver of Revenue will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of twelve (12) months from date of issue. This Tax Clearance Certificate must be submitted in the original together with the bid. Failure to submit the original and valid Tax Clearance Certificate may invalidate the bid.
3. In bids where consortia/joint ventures/sub-contractors are involved each party must submit a separate Tax Clearance Certificate. Copies of the Application for Tax Clearance Certificates are available at any Receiver's Office.

**APPLICATION FOR TAX CLEARANCE CERTIFICATE
(IN RESPECT OF BIDDERS)**

1. Name of taxpayer / bidder:

2. Trade name:

3. Identification number:

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

4. Company / Close Corporation registration number:

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

5. Income tax reference number:

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

6. VAT registration number (if applicable):

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

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

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

Signature of contact person requiring Tax Clearance Certificate:

Name:

Telephone number: Code:..... Number:

Address:

.....

.....

DATE: 20____ / ____ / ____

Please note that the Commissioner for the South African Revenue Service (SARS) will not exercise his discretionary powers in favour of any person with regard to any interest, penalties and / or additional tax leviable due to the late- or underpayment of taxes, duties or levies or the rendition returns by any person as a result of any system not being year 2000 compliant.

[MBD 2]

DECLARATION OF INTEREST

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

3.1 Full name:

3.2 Identity number:

3.3 Company registration number:

3.4 Tax reference number:

3.5 VAT registration number:

3.6 Are you presently in the service of the State* YES / NO

3.6.1 If so, furnish particulars.

.....

3.7 Have you been in the service of the State for the past twelve months? YES / NO

3.7.1 If so, furnish particulars

.....

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

(a) a member of –

(i) any municipal council;

(ii) any provincial legislature; or

(iii) the national Assembly or the National Council of Provinces;

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

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

(d) an employee of any national or provincial department, national or provincial public entity or constitutional 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.

3.8 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**

3.8.1 If so, furnish particulars.

.....
.....

3.9 Are you, aware of any relationship (family, friend, other) between a 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**

3.9.1 If so, furnish particulars

.....
.....

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

3.10.1 If so, furnish particulars.

.....
.....

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

3.11.1 If so, 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

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)

For all procurement expected to exceed R10 million (VAT 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 a municipality 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 a municipality 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 (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

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

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

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

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2

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

1.3 Points for this bid shall be awarded for:

- (a) Price; and
(b) Specific goals

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

1.5

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

1.6 Failure on the part of a bidder 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.

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

2. DEFINITIONS

The words in this policy shall bear a meaning as prescribed and/or ascribed by applicable legislation, and in the event of a conflict, the meaning attached thereto by National Legislation shall prevail:

- (a) “Act” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).
- (b) “Black people” as defined in the Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003), is a generic term which means Africans, Coloured and Indians.
- (c) “Tender” means a written offer or bid in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services or goods.
- (d) “price” means an amount of money tendered for good or services, and includes all applicable taxes less all unconditional discounts;
- (e) “rand value” means the total estimated value of a contract in rand, calculated at the time of bid tender invitation, and includes all applicable taxes and
- (f) “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 auction.

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1 POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 PREFERENCE POINT SYSTEMS

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

80/20

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

Where

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

4. POINTS AWARDED FOR SPECIFICATION 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 on the next page.

(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 allocated (90/10 system) (To be completed by the tenderer)	Number of points allocated (80/20 system) (To be completed by the tenderer)
At least 50% HDI ownership		5		
At least 50% Youth ownership		5		
At least 50% Woman ownership		4		
Locality: Maluti-A-Phofung – 6 Thabo Mofutsanyana – 4 Free State – 2 Outside Free State - 0		6		
Total Points Allocated		20		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.1 Name _____ of
company/firm:.....

4.2 VAT _____ registration
number:.....

4.3 Company _____ registration
number:.....

4.4 TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

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): _____

Date: _____



MALUTI A PHOFUNG LOCAL MUNICIPALITY

Preferential Procurement Policy

2022/2023

Issued in terms of sections 152(1)(c) and 217 of the Constitution read with section 2 of the Preferential Procurement Policy Framework Act 5 of 2000 and Preferential Procurement regulations 2022

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DOCUMENT DEFINITION

Version	1
Date	
Summary	This document is the Preferential Procurement Policy applicable to Maluti A Phoung Local Municipality
Signature	<div><div>_____</div><div>MUNICIPAL MANAGER</div><div>Date: _____</div></div>
Approved by the Council	<div><div>_____</div><div>Date: _____</div></div>
Effective date	Resolution _____
Next revision date	_____

DEFINITIONS

The words in this policy shall bear a meaning as prescribed and/or ascribed by applicable legislation, and in the event of a conflict, the meaning attached thereto by National Legislation shall prevail:

- 1) "Act" means the Preferential Procurement Policy Framework Act, 2000 (Act No.5 of 2000).
- 2) "Black people" as defined in the Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003), is a generic term which means Africans, Coloured and Indians.
- 3) "Broad-Based Black Economic Empowerment Act" means the Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003).
- 4) "Code of good practice" means a generic or sector-specific B-BBEE certificate.
- 5) "Collusion" means an intentional and unlawful agreement by two or more companies / firms which is intended or calculated to misrepresent facts or defraud with the sole purpose of influencing the procurement process thereby prejudicing the interests of the service provider.
- 6) "Companies and Shares" shall be read to include Close Corporations and members interest's mutatis mutandis.
- 7) "Comparative price" means the price after the factors of a non-firm price and all unconditional discounts that can be utilised have been taken into consideration.
- 8) "Conditions of Tender" means A document of the procedures, the manner in which those engaged in the procurement process are to behave, the obligations of the tenderer and the undertakings of the municipality. The Conditions of Tender are distinct from the General Conditions of Contract and the Special Conditions of Contract.
- 9) "Consortium or Joint Venture" means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.
- 10) "Contract" means the agreement that results from the acceptance of a tender by an organ of state.
- 11) "CFO" means Chief Financial Officer.
- 12) "Direct Sales" means sales directly to citizens and customers where a competitive bidding process was not followed. Direct sales include the income generated for municipal services; entrance tickets to municipal venues;
..... Direct sales also include sales for bulk services that are negotiated with a bulk customer.
- 13) "Disability" means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being.
- 14) "Firm price" is the price that is only subject to adjustments in accordance with the actual increase or

decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, 'levy, or tax, which, in terms of a law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract.

- 15) "Income generating contract" means a legal agreement between the municipality 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;
- 16) "Individual" an individual shall mean a natural person.
- 17) "Indigent" any person who appears on the Municipality's indigent register as of 1 July of the year under consideration.
- 18) "Local Labour" means South African residents who permanently resides in the Maluti A Phoung Municipal area.
- 19) "Local Business" means an enterprise which has an operational office located within the Maluti A Phoung Municipal area.
- 20) "Local economic development" means local and socio-economic development as contemplated in section 152 of the Constitution, 1998.
- 21) "Management" in relation to an enterprise or business, means an activity inclusive of control and performed daily, by any person who is a principal executive officer of the company, by whatever name that person may be designated, and whether or not that person is a director.
- 22) "Non-firm prices" means all prices other than "firm" prices.
- 23) "Person" includes reference to a juristic person.
- 24) "Public auction" means a traditional "open cry" auction where it is not practical to apply a system of preference.
Examples include events facilitated by an auctioneer during asset disposal auctions; auction of unwanted goods; staff auctions etc. Public auctions would NOT include "electronic auctions", "beauty contests", "sealed bid" auctions, and "Anglo-Dutch" auctions.
- 25) "Rand value" means the total estimated value of a contract in Rand denomination which is calculated at the time of tender invitations and includes all applicable taxes and excise duties.
- 26) "Sub-Contracting" means the primary contractor's assigning or leasing or making out work to or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.
- 27) "Nominated Sub-contractor" means contractors accredited on the Municipal database for construction related work as contemplated in the CIDBA.

- 28) "Tender" means a written offer or bid in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services or goods.
- 29) "Tender format/strategy" means the special conditions describing the tender strategy approach in order to achieve identified targets.
- 30) "Trust" means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person.
- 31) "Trustee" means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

PART 1. INTRODUCTION

- 1.1. The Preferential Procurement Framework Act, section 2(1) prescribes that each government institution must determine its own preferential procurement policy, within a framework upon which the institution will specify how the preferential points will be allocated when awarding bids and how it intends to use procurement as one of its enablers for economic development. The National Treasury provided Preferential Procurement Regulations 2022, issued on 4 November 2022, to provide minimum guidance and requirements for all government Institutions, on the determination of their own preferential procurement policies.
- 1.2. This policy is aimed at assisting the municipal program of redressing the historical imbalances through the application of the preferential points system and other incentive programs aimed at economic local economic development.

PART 2. PURPOSE AND OBJECTIVES

- 2.1. The purpose of the policy is to assist municipality to implement and achieve the objectives of the PPPFA and the implementation of section 152 of the Constitution through the following:
- 2.1.1. Validate the Municipality's commitment to local-and socio-economic development and preferential procurement.
 - 2.1.2. Ensure effective and efficient application of resources.
 - 2.1.3. Promote accountability, transparency, and fairness.
 - 2.1.4. Create opportunities for local small, medium, and micro enterprises [SMME].
 - 2.1.5. Enhance quality of services
 - 2.1.6. Stimulate local- and socio-economic development.
 - 2.1.7. Eliminate and counter corruption.
 - 2.1.8. Contribute towards reduction of unemployment, especially within the Municipal Area.
 - 2.1.9. Broadening the tax base within the Municipal Area.
 - 2.1.10. Encourage linkages between small and large enterprises.

- 2.1.11. Promote skills transfer and training of the historically disadvantaged.
- 2.1.12. Protect local industry against unfair competition.
- 2.1.13. Create new jobs or intensify labour absorption within the local area.
- 2.1.14. Promote enterprises located within the Municipal Area for work to be done or services to be rendered.

PART 3. LEGISLATIVE FRAMEWORK

Constitution, 1996 (Act 108 of 1996)

- 3.1. Sections 152(1)(c) and 152(2) of the Constitution provides that local government must promote social and economic development and that the municipality must strive within its financial and administrative capacity, to achieve the objects set out in subsection 152(1).
- 3.2. Section 217(1) of the Constitution, 1996 (Act 108 of 1996) provides that when contracting for goods and services, organs of state must do so in accordance with a system that is fair, equitable, transparent, competitive, and cost effective. Section 217(2) and (3) of the Constitution allows organs of state to grant preferences when procuring for goods and services within a Framework prescribed by National legislation.

Local Government Municipal Finance Management Act, 2003 (Act 56 of 2003) - [MFMA] and related SCM Treasury Regulations, 2005 [SCM TR]

- 3.3. The MFMA aims to regulate financial management and Supply Chain Management [SCM] of local government to ensure that all revenue, expenditure, assets, and liabilities are managed efficiently and effectively.
- 3.4. Sections 110 - 119 of the MFMA deals with SCM requirements and must be read together with the SCM TR's 1 - 52 issued in terms of section 168 of the MFMA through GG 27636 effective from 30 May 2005. Both these sets of prescripts support the application of the PPPFA.

Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) - [PPPFA]

- 3.5. The PPPFA, 2000 took effect on 3 February 2000. The main thrust of the PPPFA, 2000 is that an organ of state must determine its preferential procurement policy and implement such within the preferential procurement framework, the latter which is commonly called the '80/20 or 90/10 principle'.
- 3.6. The other relevant legislation and prescripts are discussed in the Municipal SCM Policy and can be obtained from the Office of the CFO.
 - a. Providing third-party management support to enterprises which are not capable of operating as prime contractors.
 - b. Providing training to new entrants.

- c. Promoting learner-ships, internships, pupil-ships, etc.
 - d. Obliging main contractors or service providers to engage targeted enterprises in the performance of their contracts incorporating resource specifications.
 - e. Foster joint ventures that are formed between large businesses and targeted enterprises (termed as Structured Joint Ventures).
 - f. Encourage and involve funding institutions to assist small businesses with access to finance and negotiate for credit lines.
 - g. Encourage local manufacturing and procurement from small businesses within the Maluti A Phoung municipal area.
 - h. Unbundling of big projects and identifying opportunities and areas/scope of works that can be carried out by emerging contractors bar those from the main assignment shall be pursued vigorously.
- 4.4.3. Unbundling strategies do not include the breaking down of projects into smaller portions to remain below certain threshold values or more than one contract.

4.5. Targeting

- 4.5.1. Targeting will be regarded as a specific goal identified by Maluti A Phoung Municipality and will be reflected in Part 7 to this Policy.
- 4.5.2. These targets will be determined prior to the Invitation of tenders and reflected as special and/or pre-qualifying conditions.

PART 5. APPLICABLE POINTS SYSTEM

5.1. Application of preference point system

- 5.1.1. The Municipality will, in the tender documents, stipulate -
 - (a) the preference point system applicable; and
 - (b) any specific goal as envisaged in section 2(1)(d) and (e) of the Preferential Procurement Act.
- 5.1.2. If it is unclear whether the 80/20 or 90/10 preference point system applies-
 - (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; or
 - (c) 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.

5.2. 80/20 preference point system for acquisition of goods or services with Rand value equal to or below R50 million

- 5.2.1. The following formula must be used to calculate the points out of 80 for price in respect of a tender with a Rand value equal to or below R50 million, inclusive of all applicable taxes:

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

Where-

P_s = Points scored for price of tender under consideration;

P_t = Price of tender under consideration; and

P_{min} = Price of lowest acceptable tender.

- 5.2.2. A maximum of 20 points may be awarded to a tenderer for the specified goals for the tender.

- 5.2.3. The points scored for the specific goal must be added to the points scored for the price and the total must be rounded off to the nearest two decimal places.

- 5.2.4. Subject to section 2(1) (n) of the Act, the contract must be awarded to the tendering scoring the highest points,

5.3. 90/10 preference point system for acquisition of goods or services with Rand value above R50 million

- 5.3.1. The following formula must be used to calculate the points out of 90 for price in respect of a tender with a Rand value above R50 million, inclusive of all applicable taxes:

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

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

- 5.4. A maximum of 10 points may be awarded to a tenderer for the specified goals for the tender.
- 5.5. The points scored for the specific goal must be added to the points scored for price and the total must be rounded off to the nearest two decimal places.
- 5.6. Subject to section 2(1)(f) of the Act, the contract must be awarded to the tenderer scoring the highest points.
- 5.6. 80/20 preference points system for tenders to for income-generating contracts with Rand value equal to or. below R50 million
- 5.6.1. The following formula must be used to calculate the points for price in respect of an invitation for tender for income-generating contracts, with a Rand value equal to or below R50 million, inclusive of all applicable taxes:

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

Where-

P_s = Points scored for price of tender under consideration;

P_t = Price of tender under consideration; and

P_{max} = Price of Highest acceptable tender.

- 5.6.2. A maximum of 20 points may be awarded to a tenderer for the specific goal specified for the tender.
- 5.6.3. The points scored for the specific goal must be added to the points scored for price and the total must be rounded off to the nearest two decimal places.
- 5.6.4. Subject to section 2(1)(f) of the Act, the contract must be awarded to the tenderer scoring the highest points.
- 5.7. 90/10 preference point system for tenders for income-generating contracts with Rand value above R50 million
- 5.7.1. The following formula must be used to calculate the points for price in respect of a tender for income-generating contracts, with a Rand value above R50 million inclusive of all applicable taxes:

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

Where-

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

5.7.2. A maximum of 10 points may be awarded to a tenderer for the specific goal specified for the tender.

5.7.3. The points scored for the specific goal must be added to the points scored for price and the total must be rounded off to the nearest two decimal places.

5.7.4. Subject to section 2(1)(f) of the Act, the contract must be awarded to the tenderer scoring the highest points.

PART 6. IDENTIFICATION AND APPLICATION OF POINTS SYSTEM

6.1. The Municipality must in line with section 2 of PPPFA and Regulations 4,5,6 and 7 of the PPR 2022 determine the applicable preference points system applicable in the tender document for quotations, competitive bids and multiple limited bids for the procurement of goods, services and works; the disposal assets or goods no longer required; and for income-generating contracts:

6.2. The 80/20 preference point system for contracts with a Rand value between the threshold used for Petty Cash and less than or equal to R50,000,000 including all applicable taxes; or the 90/10 preference point system for contracts with a Rand value greater than R50,000,000 including all applicable taxes.

6.3. Where the municipality is uncertain of the rand value of the tender, it must indicate in the tender document that either 80/20 or 90/10 will apply, to avoid cancellation of tender thus delaying service delivery.

6.4. Invitation for procurement contracts, that the lowest acceptable tender will be used to determine the applicable preference point system; or for an invitation for disposal or income-generating contracts, that the highest acceptable tender will be used to determine the applicable preference point system.

6.5. The application of points system:

6.3.1. Where the tender includes evaluation criteria, the municipality should first determine the bids meeting the set criteria (important to note that the provision of this policy should not form part of the evaluation criteria, rather be included as a condition of tender).

6.3.2. Determine the points scored using the price formula 80 or 90 points system

6.3.3. Determine the specific goals for 20 or 10 preference points system, as outlined in section 2 (d) of the PPPFA. The allocation of the applicable preference points to be determined by each council for each tender and must be set out in the tender document.

6.6. The tendering conditions will stipulate the specific goals, as contemplated in section 2(1)(d)(ii) of the Preferential Procurement Act, be attained.

6.7. A maximum of 20 points (80/20 preference points system) or 10 (90/10 preference points system), will be allocated for specific goals. These goals are:

- (a) contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability;
- (b) local labour and/ or promotion of enterprises located in the municipal area (phased in approach to be applied for other specific goals).

6.8. The policy should not include Pre-qualification goals.

6.9. Any specific goal for which a point may be awarded, must be clearly specified in the invitation to submit a tender.

6.10. A tenderer failing to submit proof of required evidence to claim preferences for other specified goals, which is in line with section 2 (1) (d) (ii) of the Act.

- (I) may only score in terms of the SO/90-point formula for price; and
- (II) scores 0 points out of 10/5 of the relevant specific goals where the supplier or service provider did not stipulate.
- (III)

6.11. The preference points scored by a tenderer must be added to the points scored for price.

6.12. The points scored must be rounded off to the nearest two decimal places.

6.13. The contract must be awarded to the tenderer scoring the highest procurement points

PART 7. PREFERENCE TARGETS AND EMPOWERMENT OBJECTIVES

7.1. Empowerment objectives

7.1.1. As part of the implementation of section 152 of the Constitution, the municipality has systematically institutionalised empowerment incentives for procurements exceeding the specified threshold values, which have formed part of the conditions of tenders, with the view of maximising the rand value benefit for the local community

7.1.2. The determination of the empowerment objectives per tender shall be prepared in collaboration between SCM unit, LED Unit and Line Departmental.

7.1.3. The data to be produced by the preferred service provider as evidence of meeting the empowerment objectives, shall be jointly determined between SCM unit, LED Unit and Line Departmental. The contract owner (Site manager) shall be responsible for active monitoring and approval of achievements of objectives, which will form part of the payment certificates invoices.

7.1.4. The threshold values and types of contracts which empowerment objectives will apply:

TYPE	THRESHOLD VALUE	DEFINITION
Major Contracts	Contract Exceeding R 10 million rand	<ul style="list-style-type: none"> ➤ High contract value ➤ Large scale development ➤ Any bid category (CIDB or General goods and services)

TYPE	THRESHOLD VALUE	DEFINITION
Long term contracts	Contract Exceeding one year	<ul style="list-style-type: none"> ➤ Risks are judged to be acceptable ➤ Medium to high complex works ➤ Any bid category (CIOB or General goods and services)
Micro	Contracts exceeding R 5 million but less than R10 million rand	<ul style="list-style-type: none"> ➤ Risks are judged to be limited or non-existent ➤ Low to medium complexity types of works ➤ Short term project ➤ Any bid category (CIOB or General goods and services)

7.2. Empowerment programs

7.2.1. Through this policy the council can determine its own empowerment programs which will be aimed at community upliftment.

7.2.2. The types of empowerment programs to be determined by council can typically fall within the following areas:

7.2.2.1. CSI- Corporate Social Investment

- a. Corporate social investment (CSI) is defined as contributions (either employee time and/or resources) which bring benefits over and above those directly associated with the Municipal core business activities.
- b. Depending on the principles of fairness and cost-effectiveness, the relevant commodity required and the profile of the supply industry, the Municipality may require that specific CSI contributions be made in line with the Municipal Grant-in-Aid Policy.
- c. The suppliers shall be expected to indicate or provide an outline of socio-economic projects to be implemented through its Corporate Social Responsibility in the Municipal area. Proposed projects must be measurable with specific focus on vulnerable groups. Bidders can suggest or explore the following socio-economic project practices for consideration:
- d.
 1. On the job training and development of staff (Learnerships), particularly for the unemployed or young people including the recruitment of long-term job seekers and handicapped people.

2. Young women / mother's upliftment / leadership programme.
 3. Skills development initiatives (technical and soft skills) must be accredited with recognised institutions.
 4. Youth leadership and empowerment projects.
 5. Early childhood development.
 6. Projects can be in collaboration with local CBO's, NGOs, and relevant institutions.
 7. Business skills and enterprise support including mentoring of local enterprises.
 8. Development of Parks and open spaces.
- e. It is specifically recorded that NO CSI financial contributions will be required or accepted.
- f. The Municipality will adopt a uniform standard in acknowledging, monitoring, and reporting on CSI contributions.

7.2.2.2.Skills transfer

- a. The council shall determine a system for skills transfer of knowledge and expertise to identified municipal staff members where the service provider shall train officials provide evidence.
- b. if the project is community based, the service provider shall train identified community members in operating, maintaining, and securing the asset.
- c. where feasible the municipality should make it a condition of contract that the service provider must train SMME's in business operations, financial aspects of business and compliance aspects of business.

7.2.2.3.Contractor development and Special purpose vehicle projects

- a. Where the municipality has an active contractor development programme, where SMME's are registered, the service provider shall be required to conduct a contractor development programme on behalf of the municipality.
- b. As part of the conditions, the service provider shall be required to give preference to the SMME's in the contractor development incubation programme in pre-determined areas of work.

7.3. Preference targets

7.3.1. The municipality's procurement policy should be a progressive policy which aims to continuously set aspirational targets to achieve in empowering the local community as follows:

POLICY OBJECTIVE	TARGET
Improve market share of local SMME's	➤ The municipality will continuously promote and implement targeted strategies and modalities, in order to improve the local SMME's competitiveness in the market, as guided by section 152 of the Constitution.
Improve the local economic market [local buying]	➤ Bidders awarded bids by the must source the materials within the Municipal area, where possible.

POLICY OBJECTIVE	TARGET
Employment of local seem unskilled workers	➤ In all projects implemented in the Municipal area, the main contractor will source unskilled in the area per Municipal ward and Semi-Skilled labourers within Municipal area
Ensure equitable work Central distribution in the Municipal area.	➤ Develop a rotation mechanism to employ local businesses registered on the Supplier Database for projects below R 200 000, inclusive of, Inclusive of construction related services.
Address identified local socio - economic weakness areas i.e.: (i) Unemployed Youth	➤ The municipality will continuously identify commodities in the demand management plans that will be marked as special purpose vehicles focusing on youth employment. ➤ LED unit will compile and keep a database of the demographics, of the youth and other groups employment status per ward level and Municipal level.

7.3.2. The municipality shall determine a policy implementation strategy which shall detail the specific targets to ensure the above preference targets are met, and the strategy shall be reviewed annually in conjunction with the budget polices and ensuring that these programmes are budgeted for.

7.3.3. To determine which tender conditions will be applicable to a specific tender, the following considerations will apply:

- a) The Municipality must to apply the empowerment goals as per section 2 of PPPFA for allocating preference points within the preference point system applicable to the tender.
- b) The Municipality must determine and record its reasons whether the goods or services for which a tender is to be invited, will be evaluated based on functionality. Apply functionality as per case law best practice.
- c) The Municipality must determine targeting conditions for procurement within the thresholds as directed by Council in 8.1 above and apply such as conditions of tender and/or conditions of contract.
- d) The Municipality must determine whether and what additional objective criteria are applicable to the tender as envisaged in the PPPFA 2(1) (f)
 - i. Objective criteria (2(1)(f) may be included in the invitation to quote or bid, but will not be limited to that which is published; and
 - ii. Objective criteria (2(1)(f)) must not include evaluation criteria used to determine an acceptable tender, and must not include the Specific Goals used to determine the 20 or 10 points.
- e) All attempts should be made to use the labour and materials from residents per ward for projects to the benefit of such specific wards.

7.3.4. The LED and SCM Unit must jointly determine which data to maintain to be able to monitor and report on matters such as local buying, alignment between municipal demographics vis-a-vis SCM spent, and related factors.

PART 8. ALIGNMENT WITH THE PROCUREMENT PROCESS

- 8.1. The Municipal SCM Policy will guide the relevant SCM activities required.
- 8.2. The 'tender format/strategy' as identified in the policy statements and the targets above will be considered and where feasible included in any tender specifications as 'special conditions to tender'

PART 9. DEVIATIONS AND EXEMPTIONS

- 9.1. Any exemption from compliance to this Policy shall be permitted only within the delegatory powers permitted by Council and as prescribed in terms of the MFMA and the PPPF A.

PART 10. ADMINISTRATION OF POLICY

- 10.1. Responsibility
 - 10.1.1. Responsibility for the implementation and administration of the Policy is delegated to the Accounting Officer, who will use the support from the SCM and LED Managers.
 - 10.1.2. The Accounting Officer must ensure that each budget holder assumes responsibility for the implementation of the Policy within his/her area of responsibility and that such responsibility is included in his/her Performance Indicators, if so required.

10.2. LED

- 10.2.1. The Accounting Officer must ensure that the organisational design of the LED Office is appropriately structured, resourced, and capacitated.
- 10.2.2. The data captured by the SCM Unit will be analysed and reported on by the Manager: LED.

10.3. SCMU

- 10.3.1. The SCMU must maintain a database of requests and transactions to develop a trend-analysis and through such a process Identify areas for efficiency and cost-effective improvements, e.g., minimising smaller purchases and maximising term contracts as well as determining strategies for universal commodities.
- 10.3.2. The data relevant to this Policy will be maintained by the SCM Unit as part of its contract register.
- 10.4. Oversight by Council
 - 10.4.1. The Accounting Officer must align its reporting requirements to the Council as per SCM TR6 to also report on progress with the implementation of the Policy.

PART 11. MAINTENANCE

- 11. Criteria for breaking deadlock in scoring
 - 11.1. If two or more tenderers score an equal total number of points, the contract must be awarded to the tenderer that scored the highest points for specific goals.

- 11.2. If two or more tenderers score an equal total number of points, the objective criteria in addition to those contemplated in paragraphs (d) and (e) justify the award to the tenderer that scored the highest points in terms in accordance with section 2(1) (D of the Act.
- 11.3. If two or more tenderers score equal total points in all respects, the award must be decided by the drawing of lots.
- 11.4. Award of contracts to tenderers not scoring highest points**
- a) A contract may be awarded to a tenderer that did not score the highest points only in accordance with section 2(1)(f) of the Act.
- 11.5. Remedies**
- i. If a Municipality is of the view that a tenderer submitted false information regarding a specific goal, it must-
- a) inform the tenderer; accordingly, and
- b) give the tenderer an opportunity to make representations within 14 days as to why the tender may not be disqualified or, if the tender has already been awarded to the tenderer, the contract should not be terminated in whole or in part-
- 11.6. After conceding the representations referred to in par 11 (1)(b), the Municipality may-
- a) if it concludes that such false Information was submitted by the tenderer-
- (i) disqualify the tenderer or terminate the contract in whole or in part; and
- (ii) if applicable, claim damages from the tenderer;

PART 12: IMPLEMENTATION

12.1.This Policy is effective from

12.2.To achieve the above, the following immediate implementation steps are required:

- a. Increased capacity in the Office of the SCM and LED Managers.
- b. Commence with the development of a Municipal Emerging Contractor and Service Provider Development Policy.
- c. Communication with the local community.
- d. Establishment and institutionalisation of the Demand Management Committee.
- e. Development and approval of procurement plans/tender strategies via relevant Demand Management Committee.

PART 13. ANNEXURES

Annexure A

Preference target matrix

POLICY OBJECTIVE	TARGET
Improve market share of local SMME's	<ul style="list-style-type: none">➤ By year 2024 the market-share of local businesses to be at least 30% of all municipal procurement.➤ By year 2025 the market-share of SMME's to be at least 35% of all municipal procurement.
Improve the local economic market [local buying]	<ul style="list-style-type: none">➤ By year 2024 the market-share of local businesses to be at least 40% of all municipal procurement.➤ By year 2025 the market-share of local businesses to be at least 45% of all municipal procurement
Employment of local semi-& unskilled workers	<ul style="list-style-type: none">➤ By year 2024 at least 50% of construction and related sector wage and allowance costs must represent local labour.➤ By year 2025 at least 60% of construction and related sector wage and allowance costs must represent local labour.
Empowerment of local registered indigents	<ul style="list-style-type: none">➤ By year 2027 at least 5% of procurement must be from business that formed co- operatives with indigents.➤ By year 2028 at least 10% of procurement must be from business that formed co-operatives with indigents.
Ensure equitable work distribution in Maluti A Phoung Municipal area.	Develop a rotation mechanism to employ 100% local businesses registered on the Municipality Supplier Database for projects below R 200 ODD, inclusive of construction related services.
Address identified local scoot- economic weakness areas i.e.: 12. Unemployed Youth	<ul style="list-style-type: none">➤ By year 2024 municipal procurement spend to unemployed youth be improved by 10% calculated from data compiled since 2021.

"Annexure B"

Typical points allocation for Specific Goals

The allocation of points for empowerment goals and offers will be done in accordance with section 2 of the PPPFA in the following manner.

a. First determine the empowerment goals allocation (of the 10 and 20 points) for each tender:

- Categories of historically disadvantaged persons such as Black persons (as defined)

- Gender (woman owned enterprises)
- Disability (enterprises owned by disabled persons - the disability must be defined and properly classified)
- Youth enterprises (enterprises owned by persons younger than 35 years)
- Rural based businesses (enterprises located and operated by persons from rural areas)
- Township based businesses (enterprises located and operated by persons in the municipal township)
- Location based (points for locality, etc.)
- Corporate social initiative in the municipal area (based on rand value)

b. Then, where applicable, apply the relevant B-BBEE scorecard or B-BBEE attribute (such as EME or QSE) to the empowerment goal.

For example:

- Enterprises that are at least 51% women-owned (maximum 5 points):
 - o with a valid B-BBEE level 1 EME affidavit: 5 points
 - o with a valid B-BBEE level 2 EME affidavit: 2 points
- Enterprises that are at least 51% owned by disabled persons (maximum 5 points):
 - o with a valid B-BBEE level 1 EME affidavit: 5 points
 - o with a valid B-BBEE level 2 EME affidavit: 2 points
- Enterprises with at least a 51% ownership by Youth (maximum 5 points):
 - o with a B-BBEE level 1 EME affidavit 5 points
 - o with a B-BBEE level 2 EME affidavit: 2 points
- Locality (maximum 5 points):
 - o Head office in the municipality: 5 points
 - o Operational office in the municipality: 2 points

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. wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? (To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).	Yes <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:		
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.

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

CERTIFICATE OF INDEPENDENT BID DETERMANATION

- 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. take all reasonable steps to prevent such abuse;
 - b. reject 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

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of: _____ that:

(Name of Bidder)

- 1 I have read and I understand the contents of this Certificate;
- 2 I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
- 3 I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
- 4 Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
- 5 For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - a. has been requested to submit a bid in response to this bid invitation;
 - b. could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - c. provides the same goods and services as the bidder and/or is in the same line of business as the bidder
- 6 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or 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.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY



Setsing Business Centre
C/O Moremoholo & Motlounj Streets
Phuthaditjhaba
9866

Private Bag X805
Witsieshoek
9870
Tel: 058 718 3700
Fax: 058 713 0459

Enquiries: Supply Chain Management Unit

MUNICIPAL SERVICES, RATES AND TAXES CLEARANCE CERTIFICATE FOR SUPPLY CHAIN MANAGEMENT PURPOSE

The purpose of this form is to obtain prove that municipal services, rates and taxes of the service provider are not more than three months in arrears with the relevant municipality / landlord in the municipal area where the service provider conduct his / her business. **This form is to be completed only if the service provider's rates and taxes are not in arrears for more than three months.**

PART A – to be completed by the relevant municipality in the case where the service provider is the registered owner of the site / owner pays for municipal services / tenant pays for municipal services

OR

PART B – to be completed by the landlord in the case where the service provider is renting the premises / rental paid by tenant include municipal services.

PART A (TO BE COMPLETED BY THE RELEVANT MUNICIPALITY)	
Name of the Municipality:	
Property Physical Address:	
Registered Name:	
Official's Name: _____	Municipality Stamp Here
Signature: _____	

Date: _____

Please tick whether in arrears or up-to-date

Rates and taxes: Up-to-date / in arrears for more than 3 months

Water: Up-to-date / in arrears for more than 3 months

Electricity: Up-to-date / in arrears for more than 3 months

Refuse: Up-to-date / in arrears for more than 3 months

Other services: Up-to-date / in arrears for more than 3 months

NB: If the company address or operate in rural settlement the service provider should attach their electricity purchase pattern. Electricity purchase pattern can be validated once the company purchase electricity in three (03) consecutive months.

PART B (TO BE COMPLETED BY THE LANDLORD)

Name of the landlord:

Property physical address:

Landlord signature:

Date: _____

**Landlord's business stamp here
Or an Affidavit from SAPS and Lease
Agreement. (Compulsory)**

Please tick whether up-to-date or in arrears:

Rental: Up-to-date / in arrears for more than 3 months

Municipal services: Up-to-date / in arrears for more than 3 months

NB: In the event that company is operating on leased premises and the address is not the same as the Company registration both lease agreement and landlord statement of account (not in arrears for more than three months) must be attached.

: If the company address or operate in rural settlement the service provider should attach their electricity purchase pattern. Electricity purchase pattern can be validated once the company purchase electricity in three (03) consecutive months

: In the event the landlord does not have a business stamp an affidavit from SAPS and Lease Agreement must be attached

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

T2.3 CHECKLIST

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

Returnable schedules required only for bid evaluation purposes	Tenderer	Evaluator
Record of Addenda to Bid Document	Tick if submitted	Tick if accepted
Compulsory Enterprise Questionnaire	Tick if submitted	Tick if accepted
Certificate of authority for joint ventures (where applicable)	Tick if submitted	Tick if accepted
Schedule of Subcontractors	Tick if submitted	Tick if accepted
Schedule of Plant and Equipment	Tick if submitted	Tick if accepted
Schedule of the Bidder's Experience	Tick if submitted	Tick if accepted
Proposed Amendments and Qualifications	Tick if submitted	Tick if accepted
MBD 1 – Invitation to BID	Tick if submitted	Tick if accepted
MBD 2 - Tax Clearance Requirements	Tick if submitted	Tick if accepted
MBD 4 - Declaration if Interest	Tick if submitted	Tick if accepted
MDB 5 - Declaration for procurement above R10,0m (excluding VAT)	Tick if submitted	Tick if accepted
MDB 6.1 - Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2022	Tick if submitted	Tick if accepted
MBD 8 - Declaration of Bidder's past Supply Chain Management Practices	Tick if submitted	Tick if accepted
MBD 9 – Certificate of independent BID determination	Tick if submitted	Tick if accepted
Certified copy of Municipal Rates & Taxes clearance certificate	Tick if submitted	Tick if accepted

Other documents required only for bid evaluation purposes	Tenderer	Evaluator
Certificate of Contractor Registration issued by the Construction Industry Development Board (CIDB)	Tick if submitted	Tick if accepted
An original valid Tax Clearance Certificate issued by the South African Revenue Services (the standard tax clearance certificate requirements and application form are available from the consultants)	Tick if submitted	Tick if accepted
Certified copy of Company Registration Certificate	Tick if submitted	Tick if accepted
Proof of registration on the Central Supplier Database (CSD)	Tick if submitted	Tick if accepted
BBBEE Certificate	Tick if submitted	Tick if accepted
Copy of company profile	Tick if submitted	Tick if accepted
Bank Rating Certificate	Tick if submitted	Tick if accepted

Returnable schedules that will be incorporated into the Contract	Tenderer	Evaluator
Preferencing Schedule (Municipal Bidding Document forms)	Tick if submitted	Tick if accepted

Other documents that will be incorporated into the contract	Tenderer	Evaluator
Bidder's Occupational Health and Safety Plan	Tick if submitted	Tick if accepted
Method Statement	Tick if submitted	Tick if accepted
Skills Transfer Plan	Tick if submitted	Tick if accepted

Documents that will be incorporated into the contract	Tenderer	Evaluator
The offer portion of the C1.1 Offer and Acceptance	Tick if submitted	Tick if accepted
C1.2 Contract Data (Part 2)	Tick if submitted	Tick if accepted
C2.2 Bill of Quantities	Tick if submitted	Tick if accepted
Documents that will be incorporated into the contract	Tenderer	Evaluator
C3.2.2 Mechanical Equipment – Alternative offers (Datasheets etc.)	Tick if submitted	Tick if accepted

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR**

C1.1 Form of offer and acceptance

Offer

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

**APPOINTMENT OF A CONTRACTOR: REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR**

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

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

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

.....

.....Rand (in words)

R(in figures)

This offer may be accepted by the Employer by signing the acceptance part of this Form of Offer and Acceptance, and by returning one copy of this document to the Bidder before the end of the period of validity stated in the Bid Data, whereupon the Bidder becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

Signature Date

Name

Capacity

for the Bidder (name and address of organization)

Name and signature of witness

.....

Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Bidder's offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the Bidder's offer shall form an agreement between the Employer and the Bidder upon the terms and conditions contained in this agreement and in the Contract that is the subject of this agreement.

The terms of the Contract, are contained in:

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

Part C2 : Pricing data

Part C3 : Scope of Work

Part C4 : Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the Bid data and any addenda thereto as listed in the bid schedules, as well as any changes to the terms of the offer agreed by the Bidder and the Employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The Bidder shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Employer's Agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

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

Name

Capacity

for the Employer: Maluti-a-Phofung Local Municipality
Private Bag X805
WITSIESHOEK
9870

Name and signature of witness:

.....

Date:

Schedule of Deviations

1. Subject

Details

.....

.....

.....

2. Subject

Details

.....

.....

.....

3. Subject

Details

.....

.....

.....

4. Subject
Details
.....
.....
.....
5. Subject
Details
.....
.....
.....

By the duly authorised representatives signing this agreement, the Employer and the Bidder agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Bid Data and addenda thereto as listed in the Bid Schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Bidder and the Employer during this process of offer and acceptance.

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

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

C1.2 Contract data

The General Conditions of Contract for Construction Works (2015) as published by the South African Institution of Civil Engineering, is applicable to this contract and forms part of Volume 1 of the Contract Document. Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (Tel. 011 805 5947). Volume 2 is the Contract Drawings.

The General Conditions of Contract for Construction Works make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

Each item of data given below is cross-referenced to the clause in the General Conditions of Contract for Construction Works to which it mainly applies.

The variations to the General Conditions of Contract are:

A Retention Guarantee must be furnished for the defects liability period.

The additional clauses to the General Conditions of Contract are:

- 5.12.5 A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the engineer, all progress on an item or items of work on the critical path of the working programme of the contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the contractor shall make provision in his programme of work for an expected delay of "n" working days per month caused by normal rainy weather, for which he will not receive any extension of time, where "n" equals 2 days per month.

Extension of time during working days will be granted to the degree to which actual delays, as defined above, exceed the number of "n" working days as mentioned in the project specifications.

Part 1 : Contract Data completed by the Employer

Clause Contract Data

1.1.1.13 The Defects Liability Period is 12 months.

1.1.1.15 The name of the Employer is Maluti-a-Phofung Local Municipality

1.2.1.2 The address of the Employer is:

Telephone: 058 718 3871/3863

Facsimile: 058 713 0459

Address (physical): Maluti-a-Phofung Local Municipality's offices, Phuthaditjhaba

Address (postal): Private Bag X805, WITSIESHOEK 9870

1.1.1.16 The name of the Employer's Agent is Mphati & Associates (Pty) Ltd

1.2.1.2 The address of the Employer's Agent is:

Telephone: 082 448 3809

Facsimile: N/A

Address (physical): 38 Gedenk Street

BETHLEHEM

9701

Address (postal): P O Box 1631

BETHLEHEM

9700

1.1.1.26 The Pricing Strategy is Re-measurement Contract.

5.8 The special non-working days are public holidays, Saturdays, Sundays and the days on which the contractor grants the majority of his permanent workforce leave around the 16th December and the first Monday of the subsequent year.

3.2.3 The Engineer is required to obtain the specific approval of the Employer before executing any of the following functions or duties:

1. Nominating the Employer's Agent's Representative in terms of clause 3.3.1.
2. Delegation of Employer's Agent's Representative authority in terms of clause 3.3.2
3. Providing consent for the subcontracting part of the contract in terms of clause 4.4.
4. The issuing of further drawings or instructions in terms of clause 5.9.1.
5. The issuing of instructions for dealing with fossils and the like in terms of clause 4.7.
6. Authorizing the Contractor to repair and make good excepted risks in terms of clause 8.2.2.2.
7. The issuing of a variation order in terms of clause 6.3.2.
8. Issuing of instructions to carry out work on a daywork basis in terms of clause 6.4.1.4.
9. Granting permission to work during non-working times in terms of clause 5.8.
10. Suspend the progress of the works in terms of clause 5.11.2.
11. The issuing of an instruction to accelerate progress in terms of clause 5.7.1.
12. The reduction of a penalty for delay in terms of clause 5.13.2.

Clause Contract Data

13. The determination of additional or reduced costs arising from changes in legislation in terms of clause 6.8.4.
14. The giving of a ruling on a contractor's claim in terms of clause 10.1.5.
15. The agreeing of an extension to the 28 period in terms of clause 10.1.5.1.
16. The inclusion of credits in the next payment certificate in terms of clause 10.1.5.2.
17. The agreeing of the adjustment of the sums for general items in terms of clause 6.11.1.

4.4

The works shall be executed in accordance with the conditions described in the Preferential Procurement Policy Framework Act 5 of 2000 and Preferential Procurement Regulations, 2022.

- 5.3.1 The time to deliver the Form of Guarantee within 14 days of the Commencement Date.

The Form of Guarantee is to contain the wording of the document included in C1.3. The liability for the guarantee shall be for 10% of the Contract Price.

- 5.3.2 The time to submit the documentation required before commencement of the Works is 14 day. The Works are to be commenced within 14 days of the Commencement Date.

- 5.6.1 The Works programme is to be delivered within 14 days of the Commencement Date.

- 8.6.1.1.2 The value of the materials supplied by the Employer to be included in the insurance sum is R0-00.

- 8.6.1.1.3 The amount to cover professional fees for repair or reinstatement of damage to the Works to be included in the insurance sum is R0-00.

- 8.6.1.3 The limit of liability insurance is R2 000 000 per claim.

- 8.6.1.5 No additional insurance is required.

- 6.5.1.2.3 The maximum percentage allowance to cover overhead charges is 15%.

- 5.5.1 The Works shall be completed within **12 months**.

- 5.13.1 The penalty for failing to complete the Works is R2 500-00 per calendar day.

- 6.8.2 Contract Price Adjustment Factor is not applicable.

- 6.10.1.5 The percentage advance on materials not yet built into the Permanent Works is 90%.

- 6.10.3 The percentage retention on amounts due to the Contractor is 10%.

- 6.10.3 The limit on retention is 10% of the Contract Price.

Clause	Contract Data
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6.10.3	A Retention Money Guarantee will be entertained.
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6.10.5	The Defects Liability Period is 12 months.
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10.7	Disputes are to be referred for final settlement to arbitration.
------	--

Part 2 : Contract Data provided by the Contractor

Clause Contract Data

1.1.1.9 The name of the Contractor is.

1.2.1.2 The address of the Contractor is:

Physical address:

.....

.....

Postal address:

.....

.....

Telephone: Facsimile:

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY
PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR

C1.3 Form of Guarantee

Bid no. **SCM/BID07/2025/2026** for **PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR**

WHEREAS **Maluti-a-Phofung Local Municipality** (hereinafter referred to as the "Employer") entered into a Contract with:

.....
(hereinafter called "the Contactor")

on the day of20.....

for the **REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR IN MALUTI-A-PHOFUNG LOCAL MUNICIPALITY**

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 execution 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 SCM/BID05/2025/2026 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 SCM/BID05/2025/2026 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 SCM/BID05/2025/2026 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

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR**

C2.1 Pricing Instructions

1. Measurement and payment shall be in accordance with the relevant provisions of Clause 8 of each of the SANS 1200 Standardised Specifications for Civil Engineering Construction referred to in the Scope of Work. The Preliminary and General items shall be measured in accordance with the provisions of SANS 1200-A: General.

2. The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in these Bill of Quantities are as follows:

%	=	percent
h	=	hour
ha	=	hectare
kg	=	kilogram
kℓ	=	kilolitre
km	=	kilometre
kPa	=	kilo Pascal
kW	=	kilo Watt
ℓ	=	litre
m	=	metre
mm	=	millimetre
m ²	=	square metre
m ³	=	cubic metre
MN	=	Mega Newton
MN.m	=	Mega Newton-metre
MPa	=	Mega Pascal
No.	=	number
Prov sum	=	Provisional sum
PC sum	=	Prime Cost sum
R/only	=	Rate only
sum	=	lump sum
t	=	ton (1 000kg)
W/day	=	Work Day

3. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

4. The prices and rates in this 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 work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.
5. It will be assumed that prices included in these 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 bids (refer to www.stanza.org.za or www.iso.org for information on standards)
6. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount bid for such items
7. 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. Any rates found to be unbalanced, could affect the award of the Bid.
8. The quantities set out in these 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.
9. Reasonable compensation will be received where no pay item appears in respect of work required in the Bill of Quantities in terms of the Contract and which is not covered in any other pay item.
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. Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the SANS 1200 Standardised Specifications.

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY
PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR

C2.2 Bill of Quantities

**MALUTI-A-PHOFUNG LOCAL
PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR
BID NO. SCM/BID05/2025/2026**

Section 1

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
A.1		SCHEDULE A: PRELIMINARY AND GENERAL				
	8,3	Scheduled fixed-charge and value related items:				
A.2	8.3.1	Contractual requirements	Sum	1.0		
	8.3.2	Establishment of facilities on the site				
	8.3.2.1	Facilities for Engineer:				
A.3		Name boards	No.	2.0		
A.4		Engineer's office building	Sum	1.0		
	8.3.2.2	Facilities for Contractor:				
A.5		Offices and storage sheds	Sum	1.0		
A.6		Living accommodation	Sum	1.0		
A.7		Ablution and latrine facilities	Sum	1.0		
A.8		Tools and equipment including survey equipment	Sum	1.0		
A.9		"Water supplies, electrical power and communications"	Sum	1.0		
A.10		Access	Sum	1.0		
A.11		Provision for security	Sum	1.0		
A.12	8.3.3	Other fixed-charge obligations	Sum	1.0		
A.13	8.3.4	Removal of site establishment	Sum	1.0		
	8,4	Scheduled time-related items:				
A.14	8.4.1	Contractual requirements	Sum	1.0		
	8.4.2	"Operate and maintain of facilities on site, for the duration of construction, except where otherwise stated:"				
	8.4.2.1	Facilities for Engineer:				
A.15		Operate and maintain office building	Sum	1.0		
	8.4.2.2	Facilities for Contractor:				
A.16		Offices and storage sheds	Sum	1.0		
A.17		Living accommodation	Sum	1.0		
A.18		Ablution and latrine facilities	Sum	1.0		
A.19		Tools and equipment	Sum	1.0		
A.20		Water supplies, electrical power and communications	Sum	1.0		
		C 2-2-2				
A.21		Access	Sum	1.0		
A.22		Security for the duration of the works	Sum	1.0		
A.23	8.4.3	Supervision for the duration of construction	Sum	1.0		
A.24	8.4.4	Company and head office overhead costs for the duration of the contract	Sum	1.0		
	8,5	Sums stated provisionally by the engineer:				
Total Carried Forward						

Bid no.: SCM/BID05/2025/2026
Part C2: Pricing Data
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C.2.2-4

**MALUTI-A-PHOFUNG LOCAL
PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR
BID NO. SCM/BID05/2025/2026**

Section 1

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
A.25		Additional tests required by the Engineer	Prov Sum	1.0	30 000.00	30 000.00
A.26		Charge required by Contractor on sub item above	%	30 000.00		
A.27		Accommodation of the Engineer's Representative	Prov Sum	1.0	90 000.00	90 000.00
A.28		Charge required by Contractor on sub item above	%	90 000.00		
A.29		"Costs encountered by the Engineer (site supervision)"	Prov Sum	1.0	600 000.00	600 000.00
A.30		Charge required by Contractor on sub item above	%	600 000.00		
A.31		"Telephone and communication facilities for the Engineer's Representative"	Prov Sum	1.0	20 000.00	20 000.00
A.32		Charge required by Contractor on sub item above	%	20 000.00		
A.33		Photocopying machine for the Engineer's Office	Prov Sum	1.0	10 000.00	10 000.00
A.34		Charge required by Contractor on sub item above	%	10 000.00		
	8,8	Temporary works:				
A.35	8,5	"Allow for remuneration for Community Liaison Officer"	Prov Sum	1.0	65 000.00	65 000.00
A.36		Overheads, charges and profit and sub item above	%	65 000.00		
	SPEC OHS	Health and Safety :				
A.37	PSA 8.9	Compliance with OHS Act and Regulations	Sum	1.0		
A.38	PSA 8.5	Health and Safety Agent (Engineer)	Prov Sum	1.0	150 000.00	150 000.00
A.39		Overheads, charges and profit on sub item 6.2 above	%	150 000.00		
	OHS 5.2	"Penalty for non-compliance with the Occupational Health and Safety Specification:"				
A.40		a) Fixed penalty per occurrence	No.	1.0		
A.41		b) Time related penalty (per day)	Days	1.0		
	SPEC EM	Environmental Management :				
A.42		"Compliance with Environmental Management Specification"	Sum	1.0		
A.43	PSA 8.5	Environmental Agent (Engineer)	Prov Sum	1.0	150 000.00	150 000.00
A.44		Overheads, charges and profit on sub item 8.2 above	%	150 000.00		
	EM 6.2.3	"Penalty for non-compliance with the Environmental Management Specification:"				
A.45		a) Fixed penalty per occurrence	No.	1.0		
A.46		b) Time related penalty (per day)	Days	1.0		
Total Carried Forward To Summary						

Bid no.: SCM/BID05/2025/2026
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Notice no.: 01/2025/2026

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
1	Section 1
SUBTOTAL	
Add 15% VAT	
Total Carried Forward To Summary Of Schedules	

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR
SECTION B: DAYWORKS

SECTION B

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)	
B.1	PSA 8.7	SECTION B: DAY WORKS					
		Day work (provisional):					
		Labour					
B.2		Artisan	h	40.0			
B.3		Skilled labour	h	40.0			
B.4		Semi-skilled labour	h	40.0			
B.5	PSA 8.7	Unskilled labour	h	70.0			
		Materials					
B.6		Allow for all-inclusive materials actually used	Prov Sum	1.0	250 000.00	250 000.00	
B.7		Charge required by Contractor on item above	%	250 000.00			
B.8		Allow for the training of local labourers	Prov Sum	1.0	50 000.00	50 000.00	
B.9		Charge required by Contractor on item above	%	50 000.00			
		Equipment					
B.10		Case 580F or similar	h	20.0			
B.11		Hitachi Ex 200 or similar	h	10.0			
B.12		Caterpillar 140G or similar	h	10.0			
B.13		6m³ tipper	h	10.0			
B.14		1 ton light delivery vehicle	km	40.0			
B.15		Bomag BW 76S or similar	day	10.0			
B.16		20m³/h water pump	day	10.0			
B.17		250 A DC welder	day	5.0			
B.18		Compressor (breakers and piping included)	day	5.0			

Bid no.: SCM/BID05/2025/2026
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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR**
SECTION B: DAYWORKS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
1	SECTION B
Total Carried Forward To Summary Of Schedules		

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP

STATION INTABAZWE CORRIDOR

SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
C.1		SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)				
		GENERAL SITE WORKS				
	"SANS1200C"	Site clearance:				
C.2	8.3.1	"Clear and grub vegetation and trees of girth up to 1,0m"	m²	500.0		
C.3		Cutting of grass inside pump station perimeter fence	m²	2 000.0		
C.4		Dismantle, remove and dispose of existing concrete palisade fencing	m	195.0		
		"Cleaning of existing pump station, including the following works:"				
C.5		Removal of all damaged equipment, electrical cables etc..	Sum	1.0		
C.6		Dismantle and remove existing transformer door	Sum	1.0		
C.7		"Transport and store equipment confirmed by the Employer at Municipal stores"	Sum	1.0		
C.8		Dispose of materials, equipment etc. at verified disposal site	Sum	1.0		
	PSD 8.6	Empty and clean existing structures:				
C.9		"Remove liquids from structures after treatment of stagnant effluent"	m³	1 000.0		
C.10		Remove grit/sludge from structures and dispose at sludge drying beds	m³	500.0		
C.11		Remove vegetation from structures and dispose at verified disposal site as ordered by the Employer's Agent	m²	185.0		
C.12		Clean (with high pressure water-jet Min. 250 bar inside) of inlet channels to remove all dirt, sludge, other contaminants	m²	350.0		
		SECURITY				
		Fencing and Security:				
C.13		"Supply, deliver, store and install Clear-Vu mesh fence. Rate to include 3.2m T-posts, 2.4high-Security Panels, 500mm Flat wrap (600mm Extension poles & wall fixtures), concrete footings etc.."	m	200.0		
C.14		"Supply, deliver, store and install 2,4m high electric fencing. Rate to include 24 lines, 100mm diameter corner and intermediate galvanised poles 3000mm high, 3000mm High Y Standards@ 3000mm cc, 2.24mm steel wire, energizer, etc.. Staffix or similar approved."	m	200.0		
C.15		Supply, deliver, store and install galvanised electrified steel sliding gate 2,4m high x 4m wide with roller assembly and connection components to electric fencing and manufacturer's specifications. Staffix or similar approved.	No	1.0		
C.16		Supply, deliver, store and install galvanised double leaf swing gate 2.4m high x 4m	No	1.0		
Total Carried Forward						

Bid no.: SCM/BID05/2025/2026
Part C2: Pricing Data
Notice no.: 01/2025/2026

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.17		"Hand excavate trench for access gate roller assembly"	m³	2.0		
C.18		Class 15/19 Mpa mass concrete for access gate footings.	m³	2.0		
		Sums Stated Provisionally by the Engineer:				
C.19		Allow for all-inclusive materials actually used	Prov Sum	1.0	50 000.00	50 000.00
C.20		Charge required by Contractor on the item above	%	50 000.00		
C.21		Security provision for pump station after the completion of the project	Prov Sum	1.0	50 000.00	50 000.00
C.22		Charge required by Contractor on the item above	%	50 000.00		
		INTERCONNECTING PIPEWORK				
	"SANS 1200DB"	Earthworks (pipe trenches):				
	PSDB 8.3.	"Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose"				
		"For pipe diameters from 100 up to and including 300mm:"				
C.23		Up to 1.5 m in depth	m	75.0		
C.24		Over 1.5 m up to 2.0 m in depth	m	75.0		
C.25		Over 2.0 m up to 3.0 m in depth	m	75.0		
C.26		Over 3.0 m up to 4.0 m in depth	m	50.0		
	PSDB 8.3.2	Extra over for item B2.5.2				
C.27		Hard rock excavation	m³	100.0		
C.28		Excavate and dispose of unsuitable material from trench bottom	m³	100.0		
	"SANS 1200LB"	Bedding (pipes):				
	PSLB 8.2.2	Provision of bedding from commercial sources:				
C.29		Selected granular material	m³	25.0		
	"SANS 1200LD"	Sewers				
	"SANS 1200LD 8.2.1"	Supply, lay, joint, bed and test for flexible pipes uPVC Maincore 400kPa hoop stiffness pipes with Z-lock or similar approved sewer couplings:				
C.30		a) 200 mm Ø sewer pipeline	m	100.0		
C.31		a) 250 mm Ø sewer pipeline	m	100.0		
C.32		a) 315 mm Ø sewer pipeline	m	100.0		
		PUMP STATION SUMP:				
	SANS 1200C	Site clearance:				
Total Carried Forward						

Bid no.: SCM/BID05/2025/2026
Part C2: Pricing Data
Notice no.: 01/2025/2026

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.33		Demolish, stockpile and remove the existing pump station sump (carting away measured elsewhere)Demolish rate to include the removal of:a. Concrete walls (irrespective of depth)b.Floor slabs (irrespective of depth)	m ²	30.0		
C.34		Dispose of materials, equipment etc at verified disposal site within a 10km radius from site	Sum	1.0		
	SANS 1200 D	Earthworks:				
C.35	8.3.3	Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose	m ³	215.0		
		Extra over item above for:				
C.36		Hard rock excavation	m ³	65.0		
C.37		Hand excavation	m ³	45.0		
C.38	8.3.7	Additional lateral support for depth of excavations between 2.0m and 4.0m	Sum	1.0		
C.39	8.3.9	Importation of G5 materials from commercial sources and compacted to 93% MOD ASSHTO	m ³	65.0		
	"SANS 1200G"	Concrete work:				
	8.2	Formwork:				
	PSG 8.2.1	Rough formwork :				
C.40		Floor slab	m ²	10.0		
	8.2.2	Smooth formwork :				
		Plane vertical:				
C.41		To walls	m ²	150.0		
	8.2.6	Box out holes/form voids:				
C.42	8.2.6 d)	Large, other than circular, of area over 0.1m ² and up to including 1m ²	No	3.0		
	8.3	Reinforcement:				
		Mild tensile steel reinforcement:				
C.43		R10	t	5.0		
		High tensile steel reinforcement:				
C.44		Y12	t	12.0		
	PSG 8.4	Concrete:				
C.45	8.4.2	Blinding layer: Class 15/19 - 50mm in thickness	m ²	25.0		
	8.4.3	Structural concrete: Class 30/19:				
C.46		Floor slabs up to 200mm thick	m ³	12.0		
C.47		Walls up to 200mm tick	m ³	25.0		
	8.4.4 a)	Wood-floated finish:				
Total Carried Forward						

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SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.48	PSG 8.4.4	Outside of structure (walls)	m ²	75.0		
	8.4.4 b)	Steel-floated finish:				
C.49	PSG 8.4.4	Inside of structure (Floors)	m ²	25.0		
C.50		Inside of structure (Walls)	m ²	75.0		
C.51	PSG.8.4.4	Top of structural walls	m ²	10.0		
	PSG 8.5	Joints:				
C.52		""Construct expansion joints for slabs spec:a.Mapei PVC Water stop (200mm wide)b. Mapei Mapeflex PU35 CR Sealant (10mm thick)c. Casting of 10mm softboard for spacing between pours""	m	125.0		
C.53	PSG 8.2.7	Chamfers (25 x25 mm), only on exposed edges.	m	30.0		
		"PUMP STATION SUCTION AND DELIVERY PIPEWORK"				
	"SANS1200C"	Site clearance:				
C.54		""Demolish, stockpile and remove the existing brick walls (carting away measured elsewhere)Demolish rate to include the removal of:a. Brick walls (irrespective of depth)""	m ²	15.0		
C.55		Dispose of materials, equipment etc. at verified disposal site within a 10km radius from site	Sum	1.0		
	"SANS 1200G"	Concrete work:				
	8,2	Formwork:				
	8.2.2	Smooth formwork :				
		Plane vertical:				
C.56		To walls	m ²	40.0		
	8.2.6	Box out holes/form voids:				
C.57	8.2.6 d)	Large, other than circular, of area over 0.1m ² and up to including 1m ²	No	4.0		
	8,3	Reinforcement:				
C.58		R10	t	3.0		
C.59		Y12	t	5.0		
	8.4.3	Structural concrete: Class 25/19:				
	8.4.4 b)	Steel-floated finish:				
	PSG 8.5	Joints:				
C.60		Allow for all-inclusive materials actually used	Prov Sum	1.0	25 000.00	25 000.00
C.61		Charge required by Contractor on the item above	%	25 000.00		
Total Carried Forward						

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SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.62		"Complete supply, manufacturing, corrosion protection (Hot-dipped galvanized) and installation of structural steel gantry:"				
C.62		IPEAA 160 I-section column, including end/base plates, chemical anchors & bolts	t	0.0		
C.63		IPEAA 160 I-section beam, including end/cleat plates & bolts	t	0.0		
C.64		Fibreglass Access Ladder (Dynarail or similar approved), without safety cage installed in valve chamber (length = 4.0-5.0m)	No	1.0		
C.65		1.2m high Fibreglass safety hand rails (Fibregrate or similar approved)	m	50.0		
C.66		"19x102x25mm deep Fibreglass moulded grating, complete with cast in EZ Embedment Angle to cover openings (Fibregrate or similar approved)."	m²	20.0		
	"SANS 1200D"	Earthworks				
C.67		For strip foundations not deeper than 1.0m	m³	15.0		
		Extra over for carting away materials:				
C.68		Backfilling to trenches, holes etc..	m³	5.0		
C.69		Under floors, steps, paving's, etc..	m³	20.0		
C.70		"Under floors, etc... including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming"	m²	40.0		
	"SANS1200G"	Concrete Works				
		For strip foundations:				
C.71		Surface beds on waterproofing	m³	5.0		
		Steel Float Finish:				
		"Expansion joints with 10mm softboard between vertical concrete and brick surfaces"				
		Reinforcement:				
		Welded mesh:				
		MASONARY				
C.72		One brick walls in foundations	m²	25.0		
		Superstructure:				
C.73		Half brick walls	m	20.0		
C.74		One brick walls	m	110.0		
C.75		Extra over 110mm Wide sill set sloping and slightly projecting	m	5.0		
C.76		"Brick reinforcement 75mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)"	m	50.0		
Total Carried Forward						

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SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.77		"Prefabricated pre-stressed concrete lintels, 110 x75mm Lintels in lengths not exceeding 3m"	m	25.0		
		FACE BRICKWORK				
C.78		Extra over brickwork for face brickwork in foundations (Provisional)	m²	15.0		
C.79		"Extra over 110mm Wide sill set sloping and slightly projecting"	m	5.0		
		"One layer of 375 micron ""Consol Plastics BrikgripDPC"" or other approved embossed damp proof course"				
		"One layer of 250 micron ""Consol PlasticsGunplus USB Green"" or other approved waterproof sheeting sealed at laps with ""GunplusPressure Sensitive Tape"" or other approved"				
		"PROFILED METAL SHEETING AND ACCESSORIES"				
C.80		Roof covering with 10 degrees pitch	m²	75.0		
		"SAFTHERM FOIL 201FR" reflective aluminium foil based insulation				
		CARPENTRY AND JOINERY				
		Plate nailed timber roof truss construction, Sawn softwood				
		Labour and Profit on roof construction				
C.81		Two coats carbolineum on sawn timbers	m²	10.0		
		Nutec-cement pressed board				
		DOORS, ETC..				
C.82		Door 813 x 2032mm high with 10 x 40mm concealed hardwood edge faced both sides with commercial veneer	No	5.0		
		SUSPENDED CEILINGS				
C.83		"Extra over ceiling for 600 x 600mm trap door of 38 x 38mm wrought softwood rebated framing with one 38 x 38mm sawn softwood crossbrander covered with ceiling board and fitted flush in opening"	No	3.0		
		""Everite"" Nu-Cornice plain 75 polystyrene cove cornice (Code:605-450) overall size 55 x 55mm high, fixed to wall and ceiling using Nu-Cornicewater based adhesive, leaving 2mm vertical joints between sections. All vertical joints to be sealed with Nu-Cornice adhesive prior to painting. All in accordance with manufacturer'recommendations."				
C.84		Nu-Cornice overall size 55 x 55mm high Plain 75 polystyrene cornice	m	55.0		
		IRONMONGERY				
		LOCKS, HANDLES, ETC..				
C.85		Provide for Lock, Handles, Etc. to timber doors with and including labour, for three doors	Prov Sum	1.0	2 500.00	2 500.00
Total Carried Forward						

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SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.86		BATHROOM FITTINGS Provide for Bathroom Fittings with and including labour, for two bathroom	Prov Sum	1.0	2 500.00	2 500.00
		METALWORK				
		PRESSED STEEL DOOR FRAMES				
C.87		"1,2mm thick mild steel double rebated frame suitable for half brick walls with three 102 x 76mm steel butt hinges per door leaf, supplied with adjustable striking plate, fixing lugs and rubber buffers to lock jamb"	No	3.0		
C.88		Frame for single door size 900 x 2100mm high	No	3.0		
		"1,2mm thick mild steel double rebated frame suitable for one brick walls with three 102 x76mm steel butt hinges per door leaf, supplied with adjustable striking plate, fixing lugs and rubber buffers to lock jamb"				
C.89		Frame for single door size 900 x 2100mm high	No	3.0		
		STEEL WINDOWS, DOORS, ETC.				
		Standard industrial windows				
C.90		Window type NE1, 533 x 769mm high with and including glass to windows	No	3.0		
C.91		Window type NE4, 1511 x 654mm high with and including glass to windows	No	3.0		
		PLASTERING				
		SCREEDS (Grano on concrete)				
C.92		15mm Thick on floors and landings	m²	35.0		
		INTERNAL PLASTER				
C.93		Cement plaster with gypsum finish on brickwork, On walls	m²	155.0		
C.94		On narrow widths	m²	5.0		
		PLUMBING AND DRAINAGE				
		SANITARY FITTINGS				
C.95		""Hibiscus (Code 7050)"" white porcelain basin with single tap hole bolted to wall with two 8mm bolts (Code 8446Z0) complete with 32mm diameter chromium plated waste outlet, plug and chain"	No	3.0		
C.96		""Hibiscus Code 772600"" white vitreous china close coupled 90 degree outlet pan with matching cistern (Code 710531) complete with lid, brass fittings, heavy duty solid white double flap seat"	No	3.0		
		TRAPS, ETC.. "Marley"				
C.97		40mm Deep seal "P" or "S" trap	No	3.0		
		TAPS, VALVES, ETC.. "Cobra"				
C.98		15mm Star 128/15 chromium plated under tile stop taps	No	5.0		
Total Carried Forward						

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SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.99		""Cobra Watertight"" Demand push button pillar tap 15mm with raised nose (Code: KM2-102). With cold indices. 1/2"" BSP male inlet and flanged backnut."	No	3.0		
		PAINTWORK				
		PAINTWORK, ETC.. TO NEW WORK				
		""ON FLOATED Plaster Prepare and apply one coat """"Dulux Durafill 100 plaster primer, one coat universal undercoat and two coats """"Dulux Wash and Wear"""" silk paint strictly according to manufacturer's specification"""				
C.100		On internal walls	m²	155.0		
		"ON PLASTER Board Prepare and apply two coats Maxicoat paint strictly according to manufacturer's specification and architects approval"				
C.101		On plasterboard ceilings	m²	35.0		
		""ON FIBRE-Cement Prepare and apply one coat""""Dulux Trade (Code: T1011) plaster primer, one coat universal undercoat and two coats """"Dulux Weatherguard Fine Textured (Code: D20)"""" acrylic paint, first coat thinned down 10% by volume with water strictly according to manufacturer's specification"""				
C.102		On fascia's and barge boards	m²	25.0		
		""ON Metal Spot priming defects in pre-primed surfaces with zinc chromate primer and applying one coat """"Dulux Universal"""" undercoat and two coats """"Dulux Gloss Enamel"""" enamel alkaline paint on steel strictly according to manufacturer's specification"""				
C.103		On door frames, etc..	m²	5.0		
C.104		On window frames, etc..	m²	10.0		
		"ON WOOD Sand down to a smooth and even surface and apply two coats ""Wood Varnish"" varnish strictly according to manufacturer's specification "				
C.105		On doors	m²	20.0		
		PROVISIONAL SUMS				
C.106		Provision for Small electrical works	Prov Sum	1.0	25 000.00	25 000.00
C.107		Charge required by Contractor on the item above	%	25 000.00		
C.108		Small plumbing works	Prov Sum	1.0	25 000.00	25 000.00
C.109		Charge required by Contractor on the item above	%	25 000.00		
	PB 8	Roofs and Structural:				
C.110	8.2.12	"Supply, deliver and install roof sheeting: Specification: 0.5MM Safintra Turdeck IBR roof sheeting Rain Forest green"	m²	22.0		
C.111		"Supply, deliver and install 175 x 50 x 20 x 2mm Lip Channels"	m	65.0		
Total Carried Forward						

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SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
C.112		Supply, deliver and install 75 x 75mm square tubing	m	18.0		
C.113		Supply, deliver and install 275 x 275 x 5mm base plate	No	5.0		
C.114		"Supply, deliver and install 3mm thick plate cut at 45° to support roof"	No	8.0		
	"SANS 1200D"	Earthworks:				
C.115	8.3.3	Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose	m³	10.0		
		Extra over item above for:				
C.116		Hand excavation	m³	10.0		
	PB	Building work refurbishment:				
C.117		Interior Walls a) Pressure wash outside walls before any refurbishment work commence; b) Sand down all structure walls, including pillars & beams; c) Remove all loose paint from structure; d) Apply exterior paint primer (to be confirmed by supplier); e) Apply 2 coats of white exterior paint (Emulsion paint)	m²	50.0		
C.118		Concrete Floors and 1m above floor level a) Pressure wash floors before any refurbishment work commence; b) Sand down existing epoxy and material; c) Remove loose particles; d) Apply epoxy primer (to be confirmed by supplier) e) Apply 3 layers of industrial epoxy paint (Sikagard)	m²	15.0		
C.119		Exterior Walls a) Pressure wash outside walls before any refurbishment work commence; b) Sand down all structure walls, including pillars & beams; c) Remove all loose paint from structure; d) Apply exterior paint primer (to be confirmed by supplier); e) Apply 2 coats of white exterior paint (Emulsion paint)	m²	50.0		
	PB 8.2.1	Brickwork:				
C.120		Remedying existing expansion / articulation joints in bricks walls.	m	20.0		
C.121		Building of 220 mm inner and outer walls, both faces face brick	m²	15.0		
		External Plaster				
C.122		Cement plaster with gypsum finish on brickwork, On walls	m²	50.0		
	PB 8.2.17	Doors:				
C.123		Supply, deliver and install type DVA Transformer door, including frame and fasteners	No	1.0		
	"SANS 1200G"	Concrete works:				
Total Carried Forward						

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SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SECTION C

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
		Closing of voids in existing concrete walls, for voids 2.0m from the floor:				
	8,2	Formwork				
C.124	8.2.2	Smooth formwork, for vertical walls	m ²	15.0		
	8.3.1	High-Tensile steel:				
C.125		Y10 dowels (Length of 500mm), including SIKA Anchorfix or similar approved	No	5.0		
	8,7	Grouting				
C.126		Non-shrinkable grout (SIKA or similar approved)	m ³			
		Cutting into existing concrete roof for the installation of ventilators:				
C.127		"Cutting of concrete roof slabs for thickness of 100-250mm"	m ²			
C.128		610mm Tornado Roof Ventilator, including anchor bolts, sealing material etc.	No	2.0		
		Sums Stated Provisionally by the Engineer:				
C.129		Allow for all-inclusive materials actually used	Prov Sum	1.0	750 000.00	750 000.00
C.130		Charge required by Contractor on the item above	%	750 000.00		
		Gritt Collecting Manhole				
C.131		Cast 20/19 MPa concrete to floor and cover slabs.	m ³	6.0		
		Smooth formwork				
C.132		To sides of roof slab	m ²	3.0		
		Narrow Widths				
C.133		Vertical sides of foundations up to 300mm high	m	25.0		
		Steel reinforcing				
C.134		R8	t	1.0		
C.135		Y12	t	1.0		
C.136		"230 mm thick brick wall with brick force every 3rd layer, inside plastered with 15mm thick screed"	m ²	25.0		
C.137	PSC 3.4.2.4	"Mavrick Trading Type 9E Domestic Cover and Frame or Similar approved"	No.	1.0		
C.138		Gritt collecting basket as per typical detail complete with all cables and attachments	No.	1.0		
C.139		Supply and install IPE 160 I-beams gantry including all fasteners as per typical detail. Rate to include 2 coats red oxide.	No.	1.0		
C.140		Supply 1.5 ton capacity mobile rolling block and tackle	Prov Sum	1.0	15 000.00	15 000.00
C.141		"Overheads, charges and profit on sub-item Cabove"	%	15 000.00		
Total Carried Forward						

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C.2.2-19

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STATION INTABAZWE CORRIDOR**

SECTION C: CIVIL REFURBISHMENT (CORRIDOR SEWER PUMP STATION)

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
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Total Carried Forward To Summary Of Schedules		_____

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR
SECTION D**

Section 1

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
D.1		SECTION D - MECHANICAL & ELECTRICAL (CORRIDOR SEWER PUMP STATION)				
D.2		Prepare G.A (General Arrangement) drawings for new pipework, actual dimensions to be confirmed on site	Sum	1.0		
		SUPPLY, DELIVER AND STORE				
		"New pipework (pipework only) a) Coating - Hot Dipped Galvanizing b) Coating thickness - N/A c) Sandblasting in-accordance with SANS d) QCP documentation to be provided on coating and welds."				
D.3		ø150mm	m	20.0		
D.4		ø200mm	m	20.0		
		Flanges for new pipework a) Flange Drilling -1600/3				
D.5		ø150mm	No.	8.0		
D.6		ø200mm	No.	8.0		
		"Jointing Kits a) Bolts 7 Nuts - Grade 8.8 HDG. b) Gasket - Klinger C4400 or similar approved				
D.7		ø150mm	No.	8.0		
D.8		ø200mm	No.	8.0		
		Pipe supports (up to 2.0m high)				
D.9		ø150mm	No.	2.0		
D.10		ø200mm	No.	2.0		
		Special Fittings				
D.11		ø150 - 250mm Bellmouth, 500mm in length, one side flanged	No.	2.0		
D.12		ø150mm 90° Standard Long Radius Bend, both sides flanged	No.	2.0		
D.13		ø200mm 90° Standard Long Radius Bend, both sides flanged	No.	2.0		
D.14		"ø150mm Flanged Adapter, Connection Steel to Steel (Long Barrel)"	No.	2.0		
D.15		"ø200mm Flanged Adapter, Connection Steel to Steel (Long Barrel)"	No.	2.0		
D.16		"Submersible Pumpa) PENTAX DB150G b) 1700 watt - 50Hz c) 230 Vd) Duty point: 24/min flow @ 5.6m head"	No.	1.0		
		"Lifting Equipment Elephant Manual Chain Blocks a) Model KII - 1.6 b) 2,5Ton lift capacity"				
D.17		All pipework and associated fittings	Sum	1.0		
		Installation and Commissioning				
D.18		Submersible Pump	Sum	1.0		
Total Carried Forward						

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Section 1

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STATION INTABAZWE CORRIDOR**
SECTION D

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
1	Section 1
Total Carried Forward To Summary Of Schedules		_____

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

SECTION E

SECTION E

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
E.1		SECTION E: CIVIL REFURBISHMENT (INTABAZWE SEWER PUMP STATION)				
		GENERAL SITE WORKS				
	"SANS1200C"	Site clearance:				
E.2	8.3.1	"Clear and grub vegetation and trees of girth up to 1,0m"	m ²	525.0		
E.3		Cutting of grass inside pump station perimeter fence	m ²	1 800.0		
E.4		Dismantle, remove and dispose of existing concrete palisade fencing	m	183.0		
		"Cleaning of existing pump station, including the following works:"				
E.5		Removal of all damaged equipment, electrical cables etc.	Sum	1.0		
E.6		Dismantle and remove existing transformer door	Sum	1.0		
E.7		"Transport and store equipment confirmed by the Employer at Municipal stores"	Sum	1.0		
E.8		Dispose of materials, equipment etc at verified disposal site	Sum	1.0		
	PSD 8.6	Empty and clean existing structures:				
E.9		"Remove liquids from structures after treatment of stagnant effluent"	m ³	950.0		
E.10		Remove grit/sludge from structures and dispose at sludge drying beds	m ³	525.0		
E.11		Remove vegetation from structures and dispose at verified disposal site as ordered by the Employer's Agent	m ²	200.0		
E.12		Clean (with high pressure water-jet Min. 250 bar inside) of inlet channels to remove all dirt, sludge, other contaminants	m ²	325.0		
		SECURITY				
		Fencing and Security:				
E.13		"Supply, deliver, store and install 2,4m high electric fencing. Rate to include 24 lines, 100mm diameter corner and intermediate galvanised poles 3000mm high, 3000mm High Y Standards@ 3000mm cc, 2.24mm steel wire, energizer, etc. Staffix or similar approved."	m	200.0		
E.14		Supply, deliver, store and install galvanised electrified steel sliding gate 2,4m high x 4m wide with roller assembly and connection components to electric fencing and manufacturer's specifications. Staffix or similar approved.	No	1.0		
E.15		Supply, deliver, store and install galvanised double leaf swing gate 2.4m high x 4m	No	1.0		
E.16		"Hand excavate trench for access gate roller assembly"	m ³	2.0		
Total Carried Forward						

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR
SECTION E**

SECTION E

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
E.17		Class 15/19 MPa mass concrete for access gate footings.	m³	2.0		
		Sums Stated Provisionally by the Engineer:				
E.18		Allow for all-inclusive materials actually used	Prov Sum	1.0	50 000.00	50 000.00
E.19		Charge required by Contractor on the item above	%	50 000.00		
E.20		Security provision for pump station after the completion of the project	Prov Sum	1.0	50 000.00	50 000.00
E.21		Charge required by Contractor on the item above	%	50 000.00		
		INTERCONNECTING PIPEWORK				
	SANS 1200DB	Earthworks (pipe trenches):				
	PSDB 8.3.	"Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose"				
		"For pipe diameters from 150 up to and including 400mm:"				
E.22		Up to 1.5 m in depth	m	75.0		
E.23		Over 1.5 m up to 2.0 m in depth	m	75.0		
E.24		Over 2.0 m up to 3.0 m in depth	m	75.0		
E.25		Over 3.0 m up to 4.0 m in depth	m	50.0		
	PSDB 8.3.2	Extra over for item B2.5.2				
E.26		Hard rock excavation	m³	100.0		
E.27		Excavate and dispose of unsuitable material from trench bottom	m³	100.0		
	SANS 1200 LB	Bedding (pipes):				
	PSLB 8.2.2	Provision of bedding from commercial sources:				
E.28		Selected granular material	m³	25.0		
	"SANS 1200LD"	Sewers				
	"SANS 1200LD 8.2.1"	Supply, lay, joint, bed and test for flexible pipes uPVC Maincore 400kPa hoop stiffness pipes with Z-lock or similar approved sewer couplings:				
E.29		a) 200 mm Ø sewer pipeline	m	75.0		
E.30		a) 250 mm Ø sewer pipeline	m	75.0		
E.31		a) 315 mm Ø sewer pipeline	m	75.0		
E.32		a) 400 mm Ø sewer pipeline	m	75.0		
		PUMP STATION SUMP:				
		"PUMP STATION SUCTION AND DELIVERY PIPEWORK"				
Total Carried Forward						

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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR
SECTION E**

SECTION E

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
	"SANS1200C"	Site clearance:				
E.33		""Demolish, stockpile and remove the existing brick walls (carting away measured elsewhere)Demolish rate to include the removal of:a. Brick walls (irrespective of depth)""	m²	15.0		
E.34		Dispose of materials, equipment etc at verified disposal site within a 10km radius from site	Sum	1.0		
	SANS 1200 G	Concrete work:				
	8,2	Formwork:				
	8.2.2	Smooth formwork :				
		Plane vertical:				
E.35		To walls	m²	40.0		
	8.2.6	Box out holes/form voids:				
E.36	8.2.6 d)	Large, other than circular, of area over 0.1m² and up to including 1m²	No	4.0		
	8,3	Reinforcement:				
E.37		R10	t	1.5		
E.38		Y12	t	2.0		
	8.4.3	Structural concrete: Class 25/19:				
	8.4.4 b)	Steel-floated finish:				
	PSG 8.5	Joints:				
E.39		Allow for all-inclusive materials actually used	Prov Sum	1.0	15 000.00	15 000.00
E.40		Charge required by Contractor on the item above	%	15 000.00		
E.41		Allow for load testing and refurbishment works required on Gantry and lifting equipment	Prov Sum	1.0	75 000.00	75 000.00
E.42		Charge required by Contractor on the item above	%	75 000.00		
E.43		Fibreglass Access Ladder (Dynarail or similar approved), without safety cage installed in valve chamber (length = 4.0-5.0m)	No	1.0		
E.44		1.2m high Fibreglass safety hand rails (Fibregrate or similar approved)	m	50.0		
E.45		"19x102x25mm deep Fibreglass moulded grating,complete with cast in EZ Embedment Angle to cover openings (Fibregrate or similar approved)."	m²	20.0		
		PROVISIONAL SUMS				
E.46		Provision for Small electrical works	Prov Sum	1.0	20 000.00	20 000.00
E.47		Charge required by Contractor on the item above	%	20 000.00		
E.48		Small plumbing works	Prov Sum	1.0	25 000.00	25 000.00
Total Carried Forward						

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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR
SECTION E**

SECTION E

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
E.49		Charge required by Contractor on the item above	%	25 000.00		
	PB 8	Roofs and Structural:				
E.50	8.2.12	"Supply, deliver and install roof sheeting:Specification:0.5MM Safintra Turdeck IBR roof sheeting Rain Forest green"	m²	22.0		
E.51		"Supply, deliver and install 175 x 50 x 20 x 2mm Lip Channels"	m	65.0		
E.52		Supply, deliver and install 75 x 75mm square tubing	m	18.0		
E.53		Supply, deliver and install 275 x 275 x 5mm base plate	No	5.0		
E.54		"Supply, deliver and install 3mm thick plate cut at45° to support roof"	No	8.0		
	SANS 1200 D	Earthworks:				
E.55	8.3.3	Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose	m³	10.0		
		Extra over item above for:				
E.56		Hand excavation	m³	10.0		
	PB	Building work refurbishment:				
E.57		"Interior Wallsa) Pressure wash outside walls before any refurbishment work commence;b) Sand down all structure walls, including pillars & beams;c) Remove all loose paint from structure;d) Apply exterior paint primer (to be confirmed by supplier);e) Apply 2 coats of white exterior paint (Emulsion paint)"	m²	200.0		
E.58		Concrete Floors and 1m above floor level)a)Pressure wash floors before any refurbishment work commence;b) Sand down existing epoxy and material;c) Remove loose particles;d) Apply epoxy primer (to be confirmed by supplier)e) Apply 3 layers of industrial epoxy paint (Sikagard)"	m²	75.0		
		"Door and Window Frames				
		a) Sand down door and window frames;				
		b) Remove loose paint;				
		c) Apply paint primer (to be confirmed by supplier);				
E.59		d) Apply 2 coats of Enamel Paint (Plascon Enamel or similar approved)"	No	10.0		
		"Roofs				
		a) Pressure wash roofs before any refurbishment work commence;				
		b) Sand down existing roof material;				
		c) Remove loose paint;				
		d) Apply paint primer (to be confirmed by supplier)				
E.60		e) Apply 2 coats of exterior roof paint (Dulux roof guard or similar approved)"	m²	75.0		
Total Carried Forward						

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STATION INTABAZWE CORRIDOR
SECTION E**

SECTION E

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
E.61		"Steel Doors (Double doors)a) Pressure wash steel doors before any refurbishment work commence;b) Sand down existing doors;c) Remove loose paint;d) Apply paint primer (to be confirmed by supplier)e) Apply 2 coats of true black metal matt enamel (Dulux or similar approved)"	No	3.0		
	PB 8.2.1	Brickwork:				
E.62		Remedying existing expansion / articulation joints in bricks walls.	m	20.0		
E.63		Building of 220 mm inner and outer walls, both faces face brick	m²	15.0		
		External Plaster				
E.64		Cement plaster with gypsum finish on brickwork, On walls	m²	50.0		
	PB 8.2.17	Doors:				
E.65		Supply, deliver and install type DVA Transformer door, including frame and fasteners	No	1.0		
	"SANS 1200G"	Concrete works:				
		Closing of voids in existing concrete walls, for voids 2.0m from the floor:				
	8,2	Formwork				
E.66	8.2.2	Smooth formwork, for vertical walls	m²	15.0		
	8.3.1	High-Tensile steel:				
E.67		Y10 dowels (Length of 500mm), including SIKA Anchorfix or similar approved	No	5.0		
	8,7	Grouting				
E.68		Non-shrinkable grout (SIKA or similar approved)	m³			
		Cutting into existing concrete roof for the installation of ventilators:				
E.69		"Cutting of concrete roof slabs for thickness of 100-250mm"	m²			
E.70		610mm Tornado Roof Ventilator, including anchor bolts, sealing material etc.	No	2.0		
		Sums Stated Provisionally by the Engineer:				
E.71		Allow for all-inclusive materials actually used	Prov Sum	1.0	750 000.00	750 000.00
E.72		Charge required by Contractor on the item above	%	750 000.00		
		Gritt Collecting Manhole				
E.73		Cast 20/19 MPa concrete to floor and cover slabs.	m³	6.0		
		Smooth formwork				
E.74		To sides of roof slab	m²	3.0		
Total Carried Forward						

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STATION INTABAZWE CORRIDOR
SECTION E**

SECTION E

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
		Narrow Widths				
E.75		Vertical sides of foundations up to 300mm high	m	25.0		
		Steel reinforcing				
E.76		R8	t	1.0		
E.77		Y12	t	1.0		
E.78		"230 mm thick brick wall with brick force every 33rd layer, inside plastered with 15mm thick screed"	m²	25.0		
E.79	PSC 3.4.2.4	"Mavrick Trading Type 9E Domestic Cover and Frame or Similar approved"	No.	1.0		
E.80		Grit collecting basket as per typical detail complete with all cables and attachments	No.	1.0		
E.81		Supply and install IPE 160 I-beams gantry including all fasteners as per typical detail. Rate to include 2 coats red oxide.	No.	1.0		
E.82		Supply 1.5 ton capacity mobile rolling block and tackle	Prov Sum	1.0	15 000.00	15 000.00
E.83		"Overheads, charges and profit on sub-item Above"	%	15 000.00		
E.84		Supply and install step irons to all grit manholes	No	15.0		
		Restricted excavations				
E.85		"Excavate in all materials for Grit collecting manholes and use for backfilling or embankments, or dispose:"	m³	40.0		
		Extra over item above				
E.86		Hard rock excavation.	m³	10.0		
E.87		Hand excavations in all materials	m³	75.0		
		Extra over item above				
E.88		Hard rock excavation	m³	15.0		
		Oxidation pond				
E.89		Remove liquids from structures and pump to inlet works	m³	5 650.0		
E.90		Remove grit/sludge from structures and dispose at sludge drying beds	m³	1 900.0		
E.91		Remove vegetation from structures and dispose at verified disposal site as ordered by the Employer's Agent	m²	1 250.0		
Total Carried Forward To Summary						

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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR**
SECTION E

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
1	SECTION E
Total Carried Forward To Summary Of Schedules		

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR**
SCHEDULE F

Section 1

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
F.1		SCHEDULE F - MECHANICAL AND ELECTRICAL (INTABAZWE SEWER PUMP STATION)				
F.2		Prepare G.A (General Arrangement) drawings for new pipework, actual dimensions to be confirmed on site	Sum	1.0		
		PIPEWORK:				
		De-install of existing pipework for all diameters up to including:				
F.3		400mm	m	60.0		
		Confirm integrity of existing pipework:				
		High pressure sand blasting of all existing pipework (including flanges)				
		For the following diameters:				
F.4		400mm	m	60.0		
F.5		Complete Non-destructive testing (NDT) on all existing pipework	Sum	1.0		
		Re-coating of pipework (COPON KSIR 88 - 250 MICRON or similar approved)				
		For the following diameters:				
F.6		400mm	m	60.0		
		""Replacement Jointing Kits a) Bolts & Nuts - Grade 8.8 HDG.b) Gasket - Klinger C4400 or similar approved""				
		For following flanges (SANS 1123, Grade 8.8 Bolts and Nuts, Drilling 1600/3):				
F.7		400mm	m	300.0		
		Provisional items				
F.8		Replacement of existing pipework, profit to be included item	Prov Sum	1.0	100 000.00	100 000.00
		Special Fittings				
F.9		ø400mm 90° bend 815 mm, both sides flanged	No.	2.0		
F.10		ø400mm pipe 1700 mm, both sides flanged	No.	1.0		
F.11		ø400mm 45° bend 405 mm, both sides flanged	No.	1.0		
F.12		ø400mm pipe 800 mm, both sides flanged	No.	1.0		
		C 2-2-40				
F.13		ø400 sweep tee, 815 mm c to f and 1 215 mm, both sides flanged	No.	1.0		
F.14		ø400 Viking Johnson or similar flange adaptor to suit 400 mm diameter uPVC Class 12 pipes	No.	2.0		
F.15		ø400 Blank flange	No.	1.0		
		Pump No. 1, 2 & 3:				
F.16		De-install existing pumps	No.	3.0		
Total Carried Forward						

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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR
SCHEDULE F**

Section 1

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (RAND)
Brought Forward						
F.17		Transport to Agent/Manufactures workshop for conditional assessment and back to storeroom of Municipality	Sum	1.0		
F.18		Carry out required refurbishment works on pump sets (This will be done on the Employer's Agent instruction)	Prov Sum	1.0	1 000 000.00	1 000 000.00
F.19		De-install existing valves	No.	3.0		
F.20		Transport to Agent/Manufactures workshop for conditional assessment and back to storeroom of Municipality	Sum	1.0		
F.21		Carry out the required refurbishment works on valves (This will be done on the Employer's Agent instruction)	Prov Sum	1.0	120 000.00	120 000.00
F.22		Delivery of Valves	No.	3.0		
F.23		Installation of the valves	No.	3.0		
		Lifting Equipment				
F.24		"Elephant Manual Chain Blocks a) Model KII - 1.6 b) 2,5Ton lift capacity"	No.	1.0		
F.25		All pipework and associated fittings	Sum	1.0		
		Installation and Commissioning				
F.26		Submersible Pump	Sum	1.0		
F.27		Pump sets	No.	2.0		
		Sums Stated Provisionally by the Engineer:				
F.28		Provision for bulk electrical connection	Prov Sum	1.0	150 000.00	150 000.00
F.29		Charge required by Contractor on sub item above	%	150 000.00		
F.30		"Provision for the procurement and installation of MCC panels and associated works"	Prov Sum	1.0	1 000 000.00	1 000 000.00
F.31		Charge required by Contractor on sub item above	%	1 000 000.00		
F.32		Provision for the procurement and installation of backup generator	Prov Sum	1.0	200 000.00	200 000.00
F.33		Charge required by Contractor on sub item above	%	200 000.00		
		PUMPING EQUIPMENT				
F.34		Allow for operation of the plant supplied under this Section for a period of 72 hours, during which time the operators shall also be trained in the operation and control of the plant, only after successfully commissioning of the equipment	Sum	1.0		
F.35		Allow for the cost of returning to site if ordered to carry out tests excluding visits required for the successful operation of the plant (per trip)	Sum	1.0		
		Allow for health and safety measures, plan and safety file for this Section of the contract				
F.36		Allow for off-site storage of plant supplied under this Section of the contract, if and when ordered by the Engineer (per day at R /day for 100 days)	Sum	1.0		
Total Carried Forward						

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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR**
SCHEDULE F

Section 1

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**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP
STATION INTABAZWE CORRIDOR**
SCHEDULE F

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
1	Section 1
Total Carried Forward To Summary Of Schedules		_____

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY
 PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
 SEWER PUMP STATION INTABAZWE CORRIDOR
 BID NO. SCM/BID05/2025/2026

Schedule	Description	Amount
A	PRELIMINARY AND GENERAL	
B	DAYWORKS	
C	CIVIL REFURBISHMENT (Corridor PS)	
D	MECHANICAL AND ELECTRICAL (Corridor PS)	
E	CIVIL REFURBISHMENT (Intabazwe PS)	
F	MECHANICAL AND ELECTRICAL (Intabazwe PS)	
	SUB-TOTAL	
	PLUS: 10% CONTINGENCIES	
	SUB-TOTAL	
	PLUS:15% VALUE ADDED TAX	
	TOTAL CARRIED FORWARD TO SUMMARY PAGE	

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY
PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR

C3 Scope of work

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PART	HEADING	PAGE NO.
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C3.2	Variations to Specifications	C 3-2-1
C3.3	Drawings	C 3-3-1
C3.4	HIV/AIDS requirements	C 3-4-1
C3.5	Occupational Health and Safety	C 3-5-1
C3.6	Environmental	C 3-6-1
C3.7	Management of the Works	C 3-7-1

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C3.1 Description of the works

CONTENTS

PART	HEADING	PAGE NO.
C3.1.1	Employer's objectives	C3-1-2
C3.1.2	Location of the Works	C3-1-2
C3.1.3	Extent of the Works	C3-1-2
C3.1.4	Procurement	C3-1-7

C3.1.1 Employer's objectives

The employer's objectives are:

- To upgrade two sewer pump stations to ensure effective operation and maintenance of the pump stations.
- Installation of a rising main
- Refurbishment of the oxidation ponds
- To provide work opportunities to the community of Intabazwe by delivering public infrastructure using labour-intensive methods for labour-intensive works.
- To promote local BBEEE in the project area.
- To provide skills training to some community members as part of capacity building.
- To improve the health and hygiene of the community.

C3.1.2 Location of the works

The proposed project is located in various towns within the Maluti-a-Phofung Local Municipality. The Municipality is situated in the Eastern Free State, with the Municipal offices located in Phuthaditjhaba. The urban areas in the Maluti-a-Phofung Local Municipality include Qwaqwa, Harrismith, Kestell and Tshiame.

Maluti-a-Phofung Local Municipality is an administrative area in the Thabo Mofutsanyana District Municipality of the Free State Province of South Africa.

C3.1.3 Extent of the works

The Project Specifications form an integral part of the contract documentation, and it supplements the Standard Specifications.

The Standard Specifications which form part of this Contract covers work associated with general infrastructure projects, and may therefore cover items not specifically applicable to this particular contract.

The description of the work contained in this section is merely an outline of the Scope of Works, but does not limit the work to be carried out under this Contract. Approximate quantities for each type of activity to be carried out under the Contract are listed in the Schedule of Quantities bound in this volume.

(a) General description of the Works

The work to be done for the upgrading and refurbishing of the Intabazwe Corridor sewer pump station.

(b) Detailed description of the Works

The upgrading of the Intabazwe corridor sewer pump station will consist of the following works, but not limited to:

- Install new electrical supply (transformer) and related electrical equipment, including lighting protection;
- Access road
- Refurbishment of two existing pump station buildings
- Refurbishment of existing guard houses and ablution facilities
- Supply and installation of new electric motors
- Installation of four new pumps
- Supply and installation of new electrical panels, including cabling
- Construct a generator rooms for the installation of new standby generators
- General cleaning of pump station (including emergency dam, sump, screens, etc.)
- Installation of security system for protection
- Compilation and provision of operation and maintenance plans.

c) Programme

The Contractor's programme shall be submitted in a bar chart format (Microsoft Projects or similar), in electronic and hard copy formats.

The Contractor's programme shall include:

- (i) All construction activities with comprehensive and sufficient detail to assess construction progress and manage and control financial issues.
- (ii) It must indicate coherent planning to enable the Engineer to perform required and necessary actions, e.g. to issue notifications, to obtain permissions, etc.
- (iii) Indicate critical path activities and their dependencies
- (iv) Include key flags and dates in respect of work to be carried out by others
- (v) Indicate key dates in respect of information required from others, including the Engineer, local authorities, and other contractors and sub-contractors working in the area.

If any significant change to the critical path occurs, the Contractor shall, as soon as possible, notify the Engineer thereof in writing. If requested in writing by the Engineer a revised construction programme shall be submitted within 7 days.

(d) Water and power supply and other services

The Contractor shall make his own arrangement and pay all installation and consumption charges for the supply of water, electrical power and other services required.

(e) Camps and depot

The Contractor shall make his own arrangements with the local authority with regards to the location of a site for his temporary camp for offices, stores, workshops and for accommodation and housing of his personnel.

(f) Local labour

The Contractor shall endeavour to maximise the employment of local labour.

With the assistance of the Infrastructure Portfolio Committee of the Maluti-a-Phofung Local Municipality and local ward committees, and a Project Steering Committee (PSC) will be established. The PSC will appointment a Community Liaison Officer (CLO) that will be employed by the Contractor for the duration of the Contract.

The CLO will assist the Contractor with local labour issues, including employment conditions, remuneration, performance monitoring, etc.

(g) Labour-intensive construction

Preference must be given to labour-intensive construction methods. Items such as restricted excavations, trimming of excavations, trench excavations, excavations for pipeline structures, laying and connecting of pipes, backfilling and similar tasks shall be carried out by hand.

(h) Training of local labour

The Contractor shall provide in-service training for labourers recruited from the local community. The training shall cover semi-skilled labour activities such as erection of shuttering, placing of concrete, construction of gabion structures and stone pitching, laying of segmented paving blocks, etc.

The cost of such training will be regarded to have been included in the bid rates for the relevant type of work.

(i) Sanitary conditions

Adequate ablution facilities must be provided along the entire extent of the Site of the Works. This includes toilets, hand wash basins, toilet paper, soap, etc. The Contractor must ensure that his personnel and labour force are properly informed and (if necessary) educated about general personal hygiene and the use of ablution facilities. Unhygienic conditions, habits and behaviour that may cause contamination on any part of the Works or surrounding areas are strictly prohibited.

The Contractor shall ensure that sanitary conditions acceptable to the Engineer prevail on site through the contract period, and that all his workers are aware of, and comply with this condition.

(j) Liaison between contractors

The Contractor must liaise with other contractors that may be working in the vicinity or along the extent of the site, and ensure that there is communication and co-operation at all times to avoid any disputes.

This requirement includes issues such as sharing of access roads, borrow areas, storage space, water sources, waste or dumping areas, etc.

(k) Extension of time

For the purposes of calculating an extension of time due to climatic conditions in terms of clause 5.12.2 of the General Conditions of Contract, the number of days in excess of the number of working days anticipated to be lost due to climatic conditions shown in table below shall be taken into account:

ANTICIPATED DAYS LOST DUE TO INCLEMENT WEATHER CONDITIONS

MONTH	Expected number of working days lost as result of inclement weather
January	3
February	3
March	3
April	3
May	3
June	3
July	3
August	3
September	3
October	3
November	3
December	3
TOTAL	36

The following climatic conditions can be classified as inclement weather conditions:

- a. Cold weather conditions,
- b. Windy conditions,
- c. Misty conditions,
- d. Excessive dust storms, and
- e. Rainy conditions (more than 10 mm rain per day).

The Engineer will certify a day lost due to the above climatic conditions or inclement weather conditions only if:

- a. no work on the critical path (delay in critical path) according to the latest approved programme for completion of the works could be carried out during that specific working day; or if
- b. only 30% or less of the work force and plant planned for that specific day, could work.

The extension of time as a result of inclement weather and/or abnormal climatic conditions will be calculated monthly as being equal to the absolute value of the number of days certified by the Engineer as lost due to climatic conditions, less the number of days as indicated in above table. The total extension of time for the contract will be the sum of the monthly extensions. Extension of time for portions of a month shall be calculated pro-rata.

If approved extensions of time extend the completion date beyond the start of the Contractor's holiday in December, the holiday period shall not be considered as working days, as defined in the Contract Data. Any remaining extension of time at this date shall be calculated from the first statutory working day in January the following year, provided that the contractor has shown in his programme that he intends to close during the traditional Christmas / New Year break.

C3.1.4 Preferential Procurement Regulations

The works shall be executed in accordance with the conditions described in the Preferential Procurement Policy Framework Act 5 of 2000 and Preferential Procurement Regulations, 2022.

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
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C3.2 Variations to specifications

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PART	HEADING	PAGE NO.
C3.2.1	Project Specifications	C 3-1-1
C3.2.2	Particular Specifications	C 3-2-1

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
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C3.2.1 Project Specifications

PS CIVIL PROJECT SPECIFICATIONS

C3.4.1 APPLICABLE SANS 2001 OR SANS 1200 STANDARDS FOR CONSTRUCTION WORKS

Where reference is made to the standard specifications in the contract document, it shall mean the Standardization Specifications for Civil Engineering Construction (SANS 1200), as published by the South African Bureau of Standards.

The Standard Specifications might not cover all the different types of work included in the Contract. The general requirements for portions of the Works not covered by the Standard Specifications are described in the Particular Specifications under section C.3.4.3.

The clauses under section C.3.4.3 are numbered "PS" followed by a letter and a number corresponding to the number of the relevant clause in the Standard Specifications. New clauses not covered by clauses in the Standard Specifications, if included here, are also designated "PS" followed by a letter and a number. These numbers follow on the last clause number used in the relevant sections of the Standard Specifications.

C3.4.2 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS

For the purpose of this Contract, the latest issues of the following Standard Specifications for Civil Engineering Construction, applicable at the date of tender advertisement, shall apply.

CIVIL AND STRUCTURAL ENGINEERING

SANS 1200 A	:	General
SANS 1200 AB	:	Employer's Agent's Office
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 GA	:	Concrete (Small Works)
SANS 1200 GB	:	Concrete (Ordinary building)
SANS 1200 HA	:	Structural steelwork
SANS 1200 HB	:	Cladding and sheeting
SANS 1200 L	:	Medium Pressure Pipelines
SANS 1200 LB	:	Bedding (Pipes)
SANS 1200 LD	:	Sewers
SANS 1200 LK	:	Manufacture and supply of valves
SANS 1200 MJ	:	Segmented paving
SANS 1200 MK	:	Kerbing and Channelling

PARTICULAR SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

Should any requirement of section C.3.4.3 conflict with any requirement of the Standardised Specifications then the requirements of section C.3.4.3 shall prevail.

The term "project specifications" appearing in any of the SANS 1200 Standardised Specifications must be replaced with the terms "scope of work".

PSA GENERAL (SANS 1200A)

PSA 3 MATERIALS

PSA 3.1 Quality

All materials to be used for the completion of the works must comply with the applicable standards and requirements of the South African Bureau of Standards or SANS, and bear the SABS/SANS quality mark.

The contractor must compile a full quality assurance plan and submit it to the Employer for approval before construction commences.

The plan must include the following:

- Setting out of works
- Construction programme
- Laying of pipes to lines and levels
- Bedding and backfilling to specifications
- Compaction to specifications
- Testing of pipelines
- Quality of sand and stone for concrete
- Method and control over accurate batching of concrete
- Fixing of reinforcing and control over cover
- Curing of concrete
- Concrete cube test
- Quality and accuracy of shuttering within the specified tolerances
- Competencies of staff responsible for day-to-day quality assurance

The Contractor will be required to keep full records of the results of his quality assurance programme on site.

PSA 3.3 Delay due to supply of materials

The Contractor shall ensure that the work is not delayed, due to the lack of materials on the site of the Works, by placing orders with suppliers for the required materials timeously.

PSA 3.4 Ordering of materials

The quantities set out in the schedule of quantities have been determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The Contractor shall therefore, verify the quantities before ordering materials of any kind.

No liability or responsibility whatsoever shall be attached to the Employer for materials ordered by the Contractor except if they have been ordered in accordance with written confirmation issued by the Employers Agent.

PSA 4 Plant

PSA 4.2 Contractor's office, stores and services

The Contractor's site agent or representative must be contactable at all times by phone. Should use be made of radio and/or cellular-phone, these must be operational at all times with sufficient back-up batteries or recharging facilities.

Security of the Contractor's camp and construction site will be the Contractor's own responsibility, and no additional payment will be made if additional security measures (crime prevention, etc.) need to be employed during the contract period.

The Contractor shall make his own arrangements for housing his employees and transporting them to and from the site. The Contractor is responsible in all respects for the housing and transporting of his employees and for the arrangement thereof, and no extension of time due to any delays resulting from this will be granted. No personnel will be allowed to reside on the site. Only night watchmen may be on the site after hours."

PSA 4.3 Hand tools

The Contractor shall provide and maintain all hand tools required for the execution of the Works and all such costs shall be deemed to be included in the tendered rates and no separate payment will be made for it.

PSA 4.4 Medical facilities and safety equipment

The Contractor shall provide a First Aid cabinet fully equipped and maintained with the minimum contents as listed in the Annexure (Regulation 3) to the General Safety Regulations of the Occupational Health and Safety Act (Act 85 of 1993), to deal with accidents and ailments which are likely to occur during the construction period.

The Contractor shall provide personal safety equipment and facilities as required by Regulation 2 of the General Safety Regulations of the Occupational Health and Safety Act (Act 85 of 1993).

The Contractor shall designate his Safety Officer and Qualified First Aider. The Contractor shall give copies of the minutes of the site safety meetings to the Engineer.

PSA 5 CONSTRUCTION

PSA 5.4 Protection of overhead and underground services

Replace the heading and contents of Sub-clause 5.4 with the following:

“PSC 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 contact and notify the following service providers:

Telkom	Mr S Rampeta	058 713 3550 / 081 401 5158
Eskom	Mr L Mofokeng	079 584 5999
Department of Roads and Police	Mrs B Manco	066 473 2677 / 078 956 3075

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 Employer's Agent, 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 Employer's Agent 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 Employer's Agent, 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 sub-clauses 4.4 and 5.1.2.2 of SABS 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 Employer's Agent 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 Employer's Agent 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 Employer's Agent the Drawings as aforesaid. These costs shall be deemed included in the Contractor's other BID rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Employer's Agent 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 Employer's Agent, 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 sub-clause 5.9 of SABS 1200 DB should be observed. In other areas, compaction to 90% modified AASHTO density is required.

PSA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Employer's Agent, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Employer's Agent, 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 Employer's Agent, 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.

Before the commencement of any excavation the Contractor shall confirm the name and telephone number of the relevant officials directly concerned with the known or suspected services, shall acquaint himself with the position of the control points of the services and shall have readily available the equipment necessary to shut-off and isolate any such service. The Contractor shall liaise with the relevant authorities or controlling bodies for the necessary temporary closure of any services during construction.

PSA 5.7 Safety

Replace the contents of Sub-clause 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; and

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

The Employer and the Employer's Agent 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 Employer's Agent's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Employer's Agent'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 Employer's Agent shall, in accordance with the provisions of Clause 9.2 (GCC 2015) of the Conditions of Contract, be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Employer's Agent, 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 Employer's Agent 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 9.2.1.3.6 (GCC 2015) 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 Employer's Agent to act in terms of Clause 9.2.1.3.6 (GCC 2015) 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 (GCC 2015)."

PSA 7 TESTING

PSA 7.2 Approved laboratories

Replace the contents of Sub-clause 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 Employer's Agent 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 Employer's Agent;

- (c) Any testing laboratory established and operated on the Site by or on behalf of the Employer or the Employer's Agent;
- (d) Any other laboratory that the Employer's Agent approves in his absolute discretion."

PSA 8 MESASUREMENT AND PAYMENT

PSA 8.1 Measurement

PSA 8.1.1 Method of measurement, all sections

In the second line of Sub-clause 8.1.1, after the words "standardized specification or in" add:

"the measurement and payment of the standard specification, particular specification or".

PSA 8.1.2 Preliminary and General item or section

PSA 8.1.2.2 Contents

Replace the contents of this sub-clause 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 Bid 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;
- erection, maintenance and removal of temporary fencing and barricades;
- dealing with water (Sub-clause 5.5);
- access to works (Sub-clause 5.8); and
- providing and maintaining the fire-fighting equipment, as well as training the work teams in their use;
- any other items deemed necessary by the Contractor."

PSA 8.2 Payment

PSA 8.2.2 Time-related items

Replace the contents of Sub-clause 8.2.2 with the following:

"Subject to the provisions of Sub-clauses 8.2.3 and 8.2.4, payment under item 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum for the item by the 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."

Notwithstanding the stipulation of Sub-clause 8.2.2, an approved extension of time will only entitle the Contractor to payment in terms of Clause 5.12 of GCC 2015.

PSA 8.3 Scheduled fixed-charge and value-related items

PSA 8.3.1 Contractual requirements

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

PSA 8.3.1 Preliminary and general charges Unit: sum

The sums shall include full compensation for all preliminary and general charges as described in Sub-clause PSA 8.1.2.2.

Payment for "operation and maintenance of facilities for the Employer's Agent", in accordance with Sub-clause 8.4.2.1 will not be authorized by the Employer's Agent until the name board has been erected and approved.

PSA 8.3.2 Value-related preliminary and general charges
Unit: sum

The sums tendered shall include full compensation for all value-related preliminary and general charges as described in Sub-clause PSA 8.1.2.2."

PSA 8.4 Schedule of time-related items

Replace the contents of Sub-clause 8.4 with the following:

PSA 8.4.1 Time-related preliminary and general charges Unit: sum

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

PSA 8.4.5 Other Time-related Obligations

PSA 8.4.5.1 Provision of Security Personnel Unit: Sum

This item shall cover the cost of providing such security personnel the Contractor deems appropriate, taking cognizance of the location of the site and the historical record of incidents of crime in the area.

PSA 8.4.6 Compensation in terms of Clause 5.12.2.4 of the General Conditions of Contract – 2015 and Clause 9.1.4 of the Contract Data, for delays incurred:

PSA 8.4.6.1 Plant Unit: Sum per working day

PSA 8.4.6.2 Labour Unit: Sum per working day

PSA 8.4.6.3 Supervision Unit: Sum per working day

PSA 8.4.6.4 Other services, facilities etc. not covered by (a), (b) and (c) Unit: Sum per working day

The sum tendered for each item shall cover the full and final standing cost per day of delaying the specified resource or facility and no additional compensation shall apply, notwithstanding any provisions to the contrary in the contract documents, or in respect of any extension of time granted in relation to the circumstances described in Clauses 5.12.2.4, 9.1.1 and 9.1.2 of the General Conditions of Contract - 2015.

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

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

The amount by which compensation for delays is adjusted shall be subject to the contract price adjustment formula as defined in the General Conditions of Contract - 2015.

This payment item shall only apply to delays which in the opinion of the Employer's Agent are due to the circumstances described in Clauses 5.12.2.4, 9.1.1 and 9.1.2 of the General Conditions of Contract - 2015.

The cost of delays incurred for all other circumstances shall be treated as provided for in the General Conditions of Contract -2015.

The provision of this clause shall in no way prejudice the rights of either the Employer or the Contractor to terminate the contract in terms of the provisions in clause 9 of the General Conditions of Contract - 2015.

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

PSA 8.4.6.1 Standing Time / Delays Due to Community Disruption *

(a) Plant Unit: Sum per working day

(b) Labour Unit: Sum per working day

(c) Supervision

Unit: Sum per working day

(d) Other services, facilities etc. not covered by (a),
(b) and (c)

Unit: Sum per working day

The sum tendered for each item shall cover the full and final standing cost per day of delaying the specified resource or facility and no additional compensation shall apply, notwithstanding any provisions to the contrary in the contract documents, or in respect of any extension of time granted in relation to the circumstances. This payment item shall only apply to delays which in the opinion of the Employer's Agent are due to the circumstances described in Clauses 5.12.2.4 resulting from community disruptions.

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

Payment for partial standing of any of the scheduled resources for a day or part thereof, or the standing of a complete resource for a part day, will be made pro-rata in proportion to an appropriate factor assessed by the Employer's Agent. The amount by which compensation for delays is adjusted shall be subject to the contract price adjustment.

The cost of delays incurred for all other circumstances shall be treated as provided for in the General Conditions of Contract 2015.

The provision of this clause shall in no way prejudice the rights of either the Employer or the Contractor to terminate the contract in terms of the provisions in clause 9 of the General Conditions of Contract 2015.

PSA 8.5 Sums stated provisionally by the Employer's Agent

Amend penultimate sentence of Sub-clause 8.5 to read:

"The percentage rate for (b)(2) above shall cover the Contractor's overheads, charges and profit on the work covered by the sums provisionally stated for (b)(1) above. Payment will be made on the basis of the sums actually paid for such work, exclusive of VAT."

PSA 8.7 Daywork

A provisional amount is included in the daywork schedule for materials, equipment and labour. Daywork will only be used upon specific instruction by the Employer's Agent.

In addition to the abovementioned amounts, provision is made for a mark-up to be used during the execution of daywork. Payment shall be regarded as full compensation for overheads, charges and profit and transport of the materials to be used when executing daywork.

Where daywork have been instructed by the Employer's Agent the returns must be submitted by fax or in person for signature of approval within 24 hours of the end of the working day on which the work was executed. Daywork returns shall be submitted on approved forms.

Add the following items:

PSA 8.9 Compliance with OHS Act and Regulations (including the construction regulations 2014) Unit: sum

The bid sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations (7 February 2014) at all times for the full duration of the Contract, as described in C3.6.1 (for CIDB document format). The successful bidder shall provide the Employer's Agent with a complete breakdown of this bid sum, including risk assessment, health and safety plan, etc. The bid sum shall include a permanent, competent Health and Safety Officer on site.

This sum will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance."

PSA 8.11 Testing of Materials and Workmanship Unit: No.

When instructed to do so by the Employer's Agent, the Contractor shall arrange with an approved SANAS laboratory to carry out various tests on materials or elements submitted by the contractor for testing. Tests shall be carried out strictly in accordance with the relevant SANS specification. The Employer's Agent will be afforded open access to the laboratory concerned and will be allowed to inspect the laboratory's premises and methods of testing, if so desired.

The rates submitted shall include for the full cost of the test, including all transport costs, sampling and storing.

PSA 8.12 Compliance with requirements of the Environmental Management Plan (EMP) Unit: Sum

The contractor shall comply with the requirements of the Environmental Management Plan when relevant. The contractor shall tender the lump sums in the Bill of Quantities to cover his initial obligations in respect to the Environmental Regulations. The tendered sums shall include full compensation to the Contractor for compliance with all the requirements of the Environmental Regulations at all times for the full duration of the Assignment.

The sums as listed will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance. Compliance will be monitored by an Environmental Control Officer through regular audits."

PSAB EMPLOYER'S AGENT'S OFFICE (SANS 1200AB)

PSAB 1 NAME BOARDS (Clause 3.1)

Two contract notice boards conforming to the standard requirements of the SA Association of Consulting Employer's Agent and indicated on drawing 162-101 must be supplied and erected at positions to be indicated by the Employer's Agent for the duration of the Contract.

PSAB 2 OFFICE BUILDING (Clause 3.2)

A prime cost item has been allowed in the Schedule of Quantities to cover all costs associated with the provision of office facilities for the Employer's Agent's Representative.

Two offices shall be provided and furnished for the Employer's Agent's Representatives and maintained for the duration of the Contract. The office facilities shall be furnished as per SABS 1200 AB, as amended below:

The offices shall consist of a room with a floor area of at least 20m² with ceiling height of at least 2,5m.

All offices and other facilities shall be weatherproof with wood board floors that are at least 150mm above the ground, with ceilings, a lockable door, and two opening windows of 3m² glazed.

Each office shall be well ventilated and insulated as to provide comfortable working conditions.

The internal finishing of the office shall include:

- (a) 1 x desk minimum size 1,5m x 0,9m and one lockable drawer;
- (b) 1 x high stool;
- (c) 2 x office chairs;
- (d) 1 x white board mounted to the wall and a set of white board markers;
- (e) 1 x lockable upright steel cabinet with three shelves;
- (f) 1 x steel filing cabinet with four drawers;
- (g) racks for hanging contract drawings;
- (h) louvre blinds for each window;
- (i) 2 x 15A plug points;
- (j) 1 x 1,2m double fluorescent lighting;
- (k) 1 x acceptable model air conditioner, capable of maintaining a room temperature between 16°C and 22°C;
- (l) 1 x hand wash basin with plug, soap dish and cold-water tap;
- (m) Kitchenette in accordance with the standards specified for offices;
- (n) 1 x new digital camera; and
- (o) 1 x complete toilet assembly with toilet paper holder for the exclusive use of the Employer's Agent as specified in the Project Specifications.

The internal finishing of the office shall include:

- (a) 1 x 12-seat conference table;
- (b) 12 x conference table chairs;
- (c) 1 x serving table with top size 1,5m x 0,9m;
- (d) louvre blinds for each window;
- (e) 2 x 15A plug points;
- (f) 1 x 1,2m double fluorescent lighting; and
- (g) 1 x acceptable model air conditioner, capable of maintaining a room temperature between 16°C and 22°C.

Upon completion of the Works ownership of all buildings, furnishings and equipment specified shall revert to the Contractor who shall remove it from Site.

PSAB 3 ACCOMODATION

A prime cost item has been allowed in the Schedule of Quantities to cover all costs associated with the provision of accommodation for the Employer's Agent's Representative.

PSAB 4 TRANSPORTATION

A prime cost item has been allowed in the Schedule of Quantities to cover all costs associated with the provision of transportation for the Employer's Agent's Representative.

PSAB 5 TELEPHONE AND COMMUNICATION

A prime cost item has been allowed in the Schedule of Quantities to cover all costs associated with the provision of communication for the Employer's Agent's Representative.

PSAB 6 PHOTOCOPYING MACHINE AND PERSONAL COMPUTER

A prime cost item has been allowed in the Schedule of Quantities to cover all costs associated with the provision of a photocopying machine and personal computer for the Employer's Agent's Representative.

PSAB 8 SURVEY ASSISTANT (Clause 6.5)

One suitably experienced survey assistant shall be made available for the sole use of the Employer's Agent's Representative for the duration of the Contract.

The survey assistant may also be required to do other administrative tasks for the Employer's Agent's Representative.

The Contractor shall be responsible for transport costs of the survey assistant and the Community Liaison Officer for the duration of the Contract.

PSAB 9 SURVEY EQUIPMENT

The survey equipment listed below shall be made available and be maintained in good working condition for the exclusive use of the Employer's Agent's Representative for the duration of the Contract. Payment will be made as provided for the Time Related Items included Schedule 1.

- (a) 1 x automatic level with tripod and leather carry case (Zeiss N1-2 or equivalent)
- (b) 1 x nylon-coated steel tape 100m long and 10mm wide
- (c) 1 x 5m long steel tape
- (d) 1 x 5m long 3-piece telescopic survey staves (double-faced metric) complete with angle bracket level
- (e) 1 x "Rabone" type steel tape 50m long and 13mm wide
- (f) 1 x 100m long 50kg breaking strength fish line
- (g) 1 x 1,0m long spirit level
- (h) 1 x 3,0m aluminum straight level
- (i) 5 x red and white ranging rods
- (j) 2 x tripod holders for ranging rods.

PSAB 10 CARPORTS

The Contractor shall provide and maintain two carports with waterproof roofing for the exclusive use of the Employer's Agent's Representative for the duration of the Contract. The full extent of the area under the carport shall be covered with a 100mm layer of 19mm crushed stone aggregate.

PSAB 11 FEATURES REQUIRING SPECIAL ATTENTION

PSAB 11.1 Surveying

The Contractor must employ or appoint a competent Engineering surveyor to set out the Works, and he must ensure that the specified surveying details and tolerances are adhered to.

The control points available for the setting out of the Works are indicated on the drawings. These control points can be used in conjunction with any other trigonometric beacon registered with the Surveyor General to fix positions. Only the control points provided by the Employer's Agent may be used for the setting out of levels.

The Works must be set out in accordance with the tolerances in SABS 1200 LD, with the exception that the slopes on pipe inverts may not be less than 95% of the specified slopes.

No beacons, reference pegs, corner pegs, etc. may be disturbed or removed without prior consent from the Employer's Agent.

A provisional sum has been provided in Item 1.3.1.15 in the Schedule of Quantities to cover reimbursement to the Contractor for payments made to an Engineering surveyor for setting out and other surveying work.

PSAB 11.2 Existing services

The Contractor must take all precautions against damaging existing services along the pipeline route or adjacent properties.

The locations of all known existing services are shown on the Drawings. The Contractor will be held responsible for any damage to these services during the execution of the Works. Damaged services must immediately be reported to the relevant authorities, and repaired to the satisfaction of the authority and the Employer's Agent. The repair work must be executed immediately.

All information pertaining to existing services is provided in good faith but with no guarantees.

PSAB 11.3 Contractor's representative

The Contractor must appoint a designated and competent person as his representative for the duration of the contract at the official site handover, in terms of LAW 6 (1983): Law on Machinery and Occupational Safety Act.

PSC SITE CLEARANCE (SABS 1200 C)

PSC 3 MATERIALS

PSC 3.1 Disposal of material

Substitute the first sentence of C 3.1 with the following:

An area for the disposal of material obtained from clearing and grubbing, demolition of manholes, dismantling and removal of pipes shall be disposed of site to the nearest municipal dumping site. The use of the disposal area must be confirmed with the Employer prior to disposal.

PSC 5 CONSTRUCTION

PSC 5.1 Area to be cleared and grubbed

Substitute the first sentence of C 5.1 with the following:

Clearing and grubbing shall only be done in areas as instructed in writing by the Engineer. Clearing and grubbing of pipe and cable routes shall be limited to a 3 m wide strip.

The Contractor may proceed with clearing and grubbing after hand-over of the site.

Substitute the last paragraph with the following:

The Contractor shall program his work in such a manner that re-clearing will not be necessary. The cost of reclearing shall be borne by the Contractor.

Where suitable topsoil exists within the limits of the area to be excavated, the Contractor shall remove the topsoil to an average depth of 150 mm together with any veld grasses and other similar vegetation as directed by the Engineer. The topsoil shall be transported and deposited in temporary stockpiles.

PSC 5.5 Reclearing of vegetation

Add the following:

"When areas have to be recleared on the written instructions of the Employer's Agent, 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 5.6 Conservation of topsoil

Replace the contents of Sub-clause 5.6 with the following:

PSC 5.6 Conservation of topsoil

All suitable topsoil removed shall be conserved as specified in Sub-clause 5.2.1.2 of SANS 1200 D and spread as specified in Subclause 5.2.4.2."

PSC 5.2 Cutting of trees

Trees outside the area to be excavated for the new structures must be left standing and undamaged, except when otherwise ordered, in writing, by the Engineer.

A penalty of R2000-00 per tree for trees damaged and/or removed will be charged.

PSC 5.9 Existing fence

The fences around the site shall not be removed and shall be repaired immediately after damage to them has occurred.

The Contractor is strongly advised to make sketches and, where applicable, take photographs of existing fences before they are removed to avoid, as far as possible, arguments that may arise between himself and the property owner as to the quality of the re-erected fences.

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.2.2 Separate items shall be scheduled for the removal of trees where the stumps are to be left in place.

PSC 8.2.7 Demolition, removal and disposal of pipelines Unit: m

DELETE FROM THE SUBCLAUSE THE WORDS: "but not the cost of excavation and backfilling"

ADD TO SUBCLAUSE:

"Including the cost of removal of rubble to an approved spoil site, backfilling any excavations and compacting to 90% modified AASHTO density"

PSD EARTHWORKS (SANS 1200D)

PSD 2 INTERPRETATIONS

PS D 2.3 Definitions

Add the following to D 2.3:

Sand (cohesionless and non-cohesive)

For the purpose of the compaction requirements, a non-plastic material of which not less than 95 % by mass passes a sieve of nominal aperture size 4,75 mm, and not more than 10 % passes a sieve of nominal aperture size 0,075 mm.

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 Employer's Agent 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 Employer's Agent in good time shall entitle the Employer's Agent to reclassify, at his discretion, such excavated material."

PSD 3.1.2 Classes of Excavation

Add the following to D 3.1.2:

Under this contract soft and intermediate excavation shall be classified together as soft excavation, and hard rock and boulder excavation, where boulders are larger than 1 m³, shall be classified together as hard rock excavation. Boulders smaller than 1 m³ shall be classified together with soft excavation.

Rock shall be defined as material that requires blasting in order to be excavated.

PSD 3.3 Selection

PSD 3.3.1 General

Substitute the second paragraph of D 3.3.1 with the following:

The Contractor shall deal in such a way with materials from all excavations for structures and pipe trenches to ensure that usable material is not contaminated with unsuitable material. If usable material is contaminated, such contaminated

material shall be removed and replaced with material of standard at least equal to the in situ usable material, all at the Contractor's expense. No additional payment shall be made in respect of this, and all relevant costs shall be deemed to be included in the tendered rates.

Add the following to D 3:

PSD 3.4 Subsoil drains

A subsoil drain consisting of 110 mm or 160 mm diameter perforated or slotted uPVC pipes, or M100 or M150 diameter geopipes in a bed of 19 mm stone or no fines concrete, all as specified and shown in the drawings, shall be installed where shown on the drawings. The pipes shall be connected with approved couplings and a gradient as shown in the drawings.

PSD 3.4.1 Material for Subsoil Drainage

PSD 3.4.1.1 Pipes

Pipes for subsoil drainage shall be uPVC pipes complying with the requirements of SANS 791, but shall be perforated or slotted.

The size of perforations in perforated pipes shall in all cases be 8 mm in diameter $\pm 1,5$ mm and the number of perforations per metre shall be not less than 26 for 110 mm pipes and 52 for 160 mm pipes. Perforations shall be spaced in two rows for 110 mm pipes and in three rows for 160 mm pipes.

Slotted pipes shall have a slot width of 8 mm $\pm 1,5$ mm. The arrangement of slots shall be subject to the Engineer's approval, but the total slot area shall be not less than that presented for perforations.

Pipes without slots or perforations required for conveying ground water from the subsoil drainage proper to the point of discharge, shall be uPVC pipes as specified above.

PSD 3.4.2 Crushed Stone

Crushed stone in subsoil drains shall be 19 mm single-sized stone complying with the grading requirements of stone for concrete in SANS 1083.

PSD 3.4.3 Geotextile Blanket

The geotextile blanket around subsoil drains shall be a nonwoven, continuous filament, needle punched, polyester geotextile equal to Kaytech Bidim A2.

PSD 3.4.4 Sand

Sand in subsoil drains shall comply with the requirements of PSD 2.3.

PSD 4 PLANT

Add the following to D 4:

PSD 4.5 Avoiding quagmire conditions

In order to prevent quagmire conditions occurring in the excavations, relatively static plant such as back-actors shall be used combined with hand trimming to complete the excavation to final level. Should the Contractor allow quagmire conditions to develop, he shall, at his own expense, take such steps to rectify the conditions as the Engineer may order.

PSD 5 CONSTRUCTION

PSD 5.1 Precautions

PSD 5.1.1.1 Barricading and lighting

REPLACE "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" WITH "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

PSD 5.1.1.2 Safeguarding of excavations

REPLACE "Machinery and Occupational Safety Act" WITH "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

PSD 5.1.1.3 Explosives

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

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

- (a) The Employer's Agent may prohibit the use of explosives in cases where, in his opinion, the risk of injury to persons or damage to property or to adjoining structures is too high. Such action by the Employer's Agent does not entitle the Contractor to additional payment for having to resort to less economical methods of construction. Blasting in built up residential area will not be allowed.
- (b) The Employer's Agent's prior written approval shall be obtained for each and every blasting operation. This approval may be withheld if the Contractor does not use explosives responsibly and carefully.
- (c) The Contractor shall comply fully with the requirements of the Explosives Act, 1997 (Act No 83 of 1997) and all other legislation and regulations as may be applicable to blasting and the use of explosives.
- (d) Before blasting is undertaken, the Contractor shall satisfy the Employer's Agent that he has established whether or not the insurers concerned require pre- and post-blasting inspections of buildings and structures within a certain radius of the proposed blasting.

- (e) Should such inspections be required, the Contractor shall, together with the Employer's Agent and the insurer, examine and measure the buildings, houses or structures in the vicinity of the proposed blasting site and establish and record, together with the owner, lessee or occupier, the extent of any existing cracking or damage before blasting operations commence.
- (f) When there is a possibility of damage to power and telephone lines or any other services or property, the Contractor shall adapt his method of blasting and the size of the charges and shall use adequate protective measures (e.g., cover-blasting) to reduce the risk of damage.
- (g) All accidents, injury to persons and animals and damage to property shall be reported to the Employer's Agent in detail and in writing as soon as is practicable.
- (h) The Employer's Agent shall be given 24 hours' notice by the Contractor before each blasting operation is carried out.
- (i) When blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits. The Contractor shall make good, at his own expense, any additional excavation necessitated by the shattering of rock in excess of any overbreak allowances specified in the Project Specifications or given on any Drawing.

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

PSD 5.1.1.4 Barricading of Trenches (New Sub-Clause 5.1.1.4)

Add new Sub-Clause 5.1.1.4:

The Engineer may request that trenches must be barricaded due to reasons that he sees fit. The barricade will be at least 1,2 metres high and the distance between wire strands will not exceed 200 mm if a wire fence is erected. If a barricade net is erected the openings in the net will not exceed 100 x 100 mm. The barricade (net or wire fence) will be supported at distances not greater than 1 metres with suitable sturdy supports.

After completion of the work(s) the barricades must be removed completely and no barricading material may be left on site. The barricade will be erected on both sides of the trench with a minimum distance of 5 metres and a maximum distance of 10 metres from the side of the trench.

PSD 5.1.2 Existing Services

PSD 5.1.2.2 Detection, location and exposure

Add the following to D 5.1.2.2:

The requirements of PS A 5.4 shall apply mutatis mutandis.

If existing services are not shown on the drawings but the existence thereof can be reasonably expected, the Contractor shall, in conjunction with all relevant authorities, determine the exact path and location of such services before the commencement of construction. After locating the exact position of services, whether indicated on the drawings or not, such services shall be deemed to be known services and the Contractor shall be liable for all costs and subsequent costs arising from the damage thereof as a result of the Contractor's activities. These services must also be indicated on the "Record" drawings.

PSD 5.1.2.3 Protection of cables

Substitute "estimated position" in the second sentence of D 5.1.2.3 with "actual or exposed position".

PSD 5.1.4 Nuisance

PSD 5.1.4.1 Dust Nuisance

Add the following to D 5.1.4.1:

The Contractor is responsible for dust control and is liable for all claims that may result from dust nuisance on all parts of the site and at all times from the date of handing over of the site to the completion date of the contract. No payment regarding the above-mentioned will be made and all costs shall be deemed to be covered by the tendered rates.

PSD 5.2 Methods and procedures

PSD 5.2.1.2 Conservation of topsoil

Add the following to D 5.2.1.2:

Removal of topsoil shall only occur in areas as approved by the Engineer. The topsoil shall be conserved for use elsewhere.

Topsoil shall be deposited from the excavations and stockpiled separately in temporary stockpiles. In order to conserve the bacteriological life in the topsoil the storage heaps, strips or layers shall not exceed 1,5 m in total depth.

PSD 5.2.2 Excavation: Add or Amend the Following Sub-Clauses

PSD 5.2.2.1 Excavations for general earthworks and for structures

Add the following to D 5.2.2.1:

To the maximum extent possible all suitable materials excavated shall be used in the construction of the works. Such materials shall be selected from the

unsuitable materials and stockpiled separately in temporary stockpiles on sites to be negotiated by the Contractor and approved by the Engineer.

The assessment of the quantity of suitable material to be stockpiled for filling shall be the responsibility of the Contractor entirely and any deficit shall be made good by the Contractor without cost to Rand Water. The balance of the suitable material for filling which is assessed as surplus to the requirements of the work may be removed from the sites as excavations proceed.

Strip foundations and encasement of pipes shall be cast directly against excavated surfaces.

Materials under foundations and floors of structures, which are regarded by the Engineer as unsuitable for the bearing of such structures shall be removed to the depths and widths, ordered. The excavated voids shall then be filled with sand compacted to 100 % of MAASHTO density, to the underside of such foundation or floors, unless a soil cement mixture in terms of PS D 5.2.3.2 is ordered by the Engineer.

PSD 5.2.2.3 Disposal

Substitute the second sentence of D 5.2.2.3 with the following:

All surplus material, which is suitable for fill, shall be transported to an open site, to be designated by the Engineer, spread and compacted as fill.

All material unsuitable for fill shall be transported to the municipal dumping site, 8km from the site, or a designated spoil area within a freehaul distance of 1 500 m of the site boundaries.

PSD 5.2.2.4 Excavation limits for payment purposes

For measurement and payment purposes, the limits of the excavations for structures shall be as shown on the Drawings.

Where no excavation limits are shown on the Drawings and the Engineer has decided that formwork has to be provided to the sides of a concrete member, the limits of the excavation for measurement and payment purposes shall be the vertical planes 0,5m outside the perimeter of the concrete member for which the formwork is to be provided at the founding level as shown on the Drawings.

PSD 5.2.3.1 Embankments

Add the following to D 5.2.3.1:

Embankments of ponds and terraces shall be constructed of approved material from excavations and shall be compacted to 95 % (100 % for sand) of MAASHTO density, in layers not exceeding 150 mm in depth.

PSD 5.2.3.2 Backfilling of trenches and backfilling against structures

Add the following to D 5.2.3.2:

Unless otherwise authorised by the Engineer no backfilling or filling against structures shall commence until the concrete has been in place for at least 14 days.

Backfilling around structures shall be compacted to 95 % (100 % for sand) of MAASHTO density.

When specified or ordered by the Engineer the backfilling against structures shall be done using a mixture of soil cement. The mixture shall contain 5 % cement and just sufficient water for it to be placed and compacted like ordinary backfilling material.

Backfilling of all pipe trenches and around structures shall be performed in 150mm thick layers with material approved by the Engineer, each layer shall be compacted to 93% Modified AASHTO maximum dry density at optimum moisture content with sufficient water added uniformly to ensure that the specified density will be achieved for each layer. Each layer shall be completed before the next is added. Backfilling is not measured separately but is included in the tariff for the chambers. All over-excavation must be backfilled by the Contractor with mass concrete of the specified grade at his own cost. Where such over-excavation has been ordered by the Engineer, the backfilling with concrete will be measured and paid separately.

Add the following to D5.2.3:

PSD 5.2.3.3 Filling under floors

Filling under the floors of buildings shall be done with sand from commercial sources, compacted to 100 % of MAASHTO density.

PSD 5.2.4 Finishing

PSD 5.2.4.1 Final grading

Add the following to D 5.2.4.1:

Terraces shall be trimmed to an even grade of 1 in 2.

PSD 5.2.4.2 Top soiling

Add the following to D 5.2.4.2:

Topsoil shall be placed on the sides and on the tops of embankments and other terraces where no paving is specified, or in areas where directed by the Engineer.

PSD 5.2.4.3 Grass or other vegetation

Add the following to D 5.2.4.3:

Planting shall be carried out at the earliest convenient stage of the construction and shall be arranged to suit the seasonal weather conditions. Undue humps and hollows shall be smoothed out before planting is commenced.

(a) Grassing

Stools or runners of "Kikuyu" or other grass approved by the Engineer shall be planted by forming trenches 75 mm deep at 300 mm intervals along lines at right angles to the direction of maximum slope, laying the stools or runners at intervals not exceeding 150 mm along the trenches and closing the trenches in such a way to cover the grass entirely. After planting the surface shall be lightly rolled with a hand roller with a maximum mass of 150 kg.

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 bid rate for item 8.3.3 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. No backfilling of structures is to be done before a leak test, if required, has been successfully passed. Rates for excavation are inclusive of the backfilling and compaction around structures."

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

"Where excavations have been carried out 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 Employer's Agent may direct that over-excavation be backfilled with weak concrete if there is a danger of settlement or differential settlement of the foundations."

PSD 5.2.5 Transport for earthworks

Replace the contents of Sub-clause 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 rates and prices for the excavation of the materials. No separate compensation shall apply for the transportation of excavated materials."

PSD 5.2.6 Removal of Unsuitable Material

The provision of SANS 1200 DM: Earthworks (Roads) clause DM 5.2.3.2 shall apply mutatis mutandis.

PSD 5.2.7 Dewatering of foundation excavations

Over and above his general obligations in regard to dealing with water as specified in SANS 1200 A, the Contractor shall deal with and dispose of all water so as to ensure that the Works are kept sufficiently dry at all times so that they can be properly executed, and he shall protect them against flood damage.

For this purpose, the Contractor shall provide sufficient pumps, pipes and other equipment that may be necessary. Where necessary, the Contractor shall construct temporary berms, culverts and channels to drain away the water, but in order to limit such work as far as possible, the permanent drainage provided in the Contract shall be constructed at the earliest opportunity as may be practicable. The only allowance for permanent drainage under this contract is a 100 mm thick layer of NF19 concrete with drainage pipes as shown on the drawings. Payment for dealing with water shall be included in the Contractor's rates for preliminary and general charges, except in so far as special provision for dealing with water may be made elsewhere in the Specifications.

PSD 5.2.8 Setting out of excavations

The Contractor shall set out the excavations accurately in accordance with the drawings and data supplied by the Engineer.

The Contractor shall provide, erect, set to line and level and maintain approved substantial working profiles on the perimeter of excavations and along the length of the trench at changes of grade and direction. Each working profile shall be fitted with a horizontal crossbar set at a predetermined height above the designed excavation profiles to which excavations are to be carried out and have setting marks, which will define the local setting out lines and the centre line of the trench. Where required by the Engineer the Contractor shall provide a working profile with the crossbar extending across the full width of the trench. A working profile shall remain in position during all stages of the excavations until the concrete is placed or the pipe is laid past the chainage of the working profile.

The Contractor shall provide sets of boning rods, templates and piano wire, for the sole use of the Engineer, for checking the profiles of the excavations. The Contractor shall also provide, set and level all the pegs required to transfer lines and levels to the excavation floor in order to control the preparation of the prescribed profiles.

Excavation will be required to expose existing pipelines to allow the installation of the drainage line. In exposing existing pipelines, the Contractor shall excavate by machine, or by hand, if necessary, around and under the pipelines taking care to avoid damage to the bitumen, cement mortar or epoxy coated pipes. Any damage caused to pipe coatings during excavations will be made good by the contractor and any costs so incurred will be for the contractors' expense.

The Contractor shall provide and use equipment and machinery of adequate capacity and suitable type and quality for the efficient and expeditious execution of the work.

PSD 5.2.9 Overbreak and over excavation

It is to be expected that during excavations material will be removed from below the prescribed profiles. In the cases where the excavation floor is formed of materials classified as Rock the additional depth will for purposes of this contract be termed overbreak and can be expected to vary according to the nature of the rock, the jointing planes, the extent of weathering of the rock, the methods and procedures used in the blasting of the rock and the expertise of the personnel undertaking the blasting. In the case where the excavation floor is formed in

materials classified as Soft, the additional depth will for purposes of this contract be termed over excavation.

PSD 5.2.10 Safety of excavations

Excavations shall be undertaken in a safe manner in compliance with the regulations promulgated under the Occupational Health and Safety Act (Act 85 of 1993) or any amendment thereof. Safety precautions to be observed by the Contractor shall include the sloping, stepping or benching or shoring, timbering or otherwise supporting the sides of the excavations or any other provision as stipulated in Regulation 13 of the aforesaid act, with which the Contractor declares himself to be conversant.

The shoring method adopted shall be compatible with the excavating, backfilling and construction method and shall not restrict the installation and construction.

Shores shall be designed to withstand the earth pressures exerted upon them from the side of the excavation, which shall include the superimposed loading of construction and pipe laying equipment.

The Engineer may call upon the Contractor to timber the sides of the excavation at any point, without cost to the client that he may consider in any way dangerous. Such timbering shall be left in place until the completion of the work at the point affected.

Timbering shall consist of open planning, walings and substantial struts and shall be carried out in a workmanlike manner and to the satisfaction of the Engineer. The Contractor shall allow for the removal of timbering immediately prior to backfilling or on the instructions of the Engineer.

PSD 5.2.11 Maintaining the sides of the excavations

Maintaining the sides of the excavations in a safe condition shall at all times be the sole responsibility of the Contractor. No under-cutting of the sides will be allowed.

PSD 5.2.12 Protection of work

The Contractor shall provide, at his own expense, all measures necessary for the protection of the excavations during the progress of the work, shall be solely responsible for securing, lighting and watching all places dangerous to traffic, persons, animals or property, and shall be liable for all claims arising therefrom. The excavations shall be maintained until the structures are completed and backfilled. Should the sides fall in, or any debris or water accumulate in the excavations due to any cause the excavation shall be cleaned out and any damage arising therefrom made good by the Contractor at his own cost as directed by the Engineer.

PSD 5.2.13 Material for filling

All material used in the filling beneath structures, behind walls, for formation of terraces and embankments and backfilling of pipes shall be suitable material as defined in the following clause.

Suitable material for filling beneath structures, behind walls, formation of terraces and embankments etc. and for stage wall backfill in drainpipe trenches shall comprise loose, fine soil or powdered soft shales which on excavation, handling and compaction break down into a soil like texture and shall have the characteristics of a sandy silt or clayey sand material with a plasticity index not exceeding 15. The fill shall contain no oukrip or materials deleterious to concrete and shall be free of pebbles, stones and fragments of shattered rock with maximum dimensions exceeding 50 mm. The material used shall have a uniform moisture content and be free from roots and deleterious proportions of organic matter. The material shall not be too wet for practical drying to the required moisture content. Alternatively, where instructed by the Engineer, loose fine soil with a plasticity index exceeding 15 shall be used as suitable material for filling beneath structures and behind walls in association with cement or lime stabilization.

Suitable material for drainpipe bed and for stage I backfilling in drainpipe trenches shall comprise loose, fine soil or powdered soft shales, which on which on excavation, handling and compaction break down into a soil like texture and shall have the characteristics of a sandy silt or clayey sand material with a plasticity index not exceeding 15. The fill shall contain no oukrip or materials deleterious to bitumen wrapped steel pipes and shall be free of pebbles, stones and fragments of shattered rock with maximum dimensions exceeding 10 mm. The material used shall have a uniform moisture content and be free from roots and deleterious proportions of organic matter. The material shall not be too wet for practical drying to the required moisture content

Suitable material for use in road subbase and base layers in drainage pipeline trench at road crossings shall comprise selected graded crushed stone Class G1 as specified in terms of TRH14 – Guidelines for Road Construction Materials.

PSD 5.2.14 Source of materials

Unless authorized by the Engineer, suitable material shall be selected from materials excavated under the contract.

If insufficient suitable material for filling is available for selection from the excavations the Contractor shall with the approval of the Engineer, supplement the available suitable material for filling by importing suitable material approved by the Engineer. The Contractor shall negotiate for, obtain, load and transport to site the supplementary requirements for filling.

PSD 5.2.15 Compaction of in situ material

Where required the in-situ material at the excavation profile or at the surface exposed after the removal of unsuitable foundation material shall be compacted to 93% (ninety-three percent) of the Modified AASHTO to a depth of at least 150 mm below the exposed surface.

Compaction shall be carried out between optimum moisture content and optimum moisture content plus 2% (two percent). Density testing of the compacted in situ material shall be carried out in accordance with Clause E17.

PSD 5.2.16 Filling topsoil

After the backfilling of the excavations has been completed to the subsoil surface the topsoil shall be returned to the upper 300 mm layer, from which it was removed

to restore the natural ground surface. The topsoil shall be evenly spread and lightly compacted to leave the upper ground surface in a neat and tidy condition as near as may be to the original condition encountered before excavation commenced or to such details for the embankments as are indicated on the drawings.

PSD 8 MEASUREMENT AND PAYMENT

PS D 8.1 Basic Principles

Add the following to D 8.1:

The rates for excavation shall also cover the cost of dealing with any stormwater or subsurface water, which may appear in the excavations.

PSD 8.3 Scheduled items

PS D 8.3.2 Bulk Excavation

Add the following sub items to D 8.3.2:

- (a) Extra-over 8.3.2(a) for soil cement backfilling where specifically required by the Engineer (percentage of cement indicated) Unit: m³

The tendered rate for sub item PS D 8.3.2(c) shall be additional to the rates tendered for D 8.3.2(a) and shall cover the cost of all incidentals required for the complete backfilling with soil cement as specified. The rate shall also include for the trimming and compacting of the excavation before placement of soilcrete.

- (b) Excavate and dispose of unsuitable material from excavation bottom Unit: m³

The rate shall cover the cost of complying with all the precautions required in terms of D 5.1 in addition to the cost of excavation of the additional depth in any material and the disposal of the unsuitable material as specified in PS D 5.2.2.3.

- (c) Extra-over 8.3.2(a) for trimming and compacting terraces Unit: m²

The rate includes for the trimming and compacting of horizontal and sloping sides of the terraces before topsoil and grass is placed, including for the removal of large stones and rubble to form a uniform surface.

PSD 8.3.3 Restricted Excavation

Add the following sub items to D8.3.3

Restricted excavation shall be limited to those excavations detailed on the drawings or as agreed to by the Engineer as being restricted.

- (c) Extra-over 8.3.3(a) for soil cement backfilling (percentage of cement indicated) Unit: m³

The tendered rate for sub-item PSD 8.3.3(c) shall be additional to the rates tendered for D 8.3.3(a) and shall cover the cost of all incidentals required for the complete backfilling with soil cement as specified. The rate shall also include for the trimming and compacting of the excavation before placement of soilcrete.

- (d) Excavate and dispose of unsuitable material from excavation bottom Unit: m³

The rate shall cover the cost of complying with all the precautions required in terms of D 5.1 in addition to the cost of excavation of the additional depth in any material and the disposal of the unsuitable material as specified in PSD 5.2.2.3.

- (e) Extra-over 8.3.3(a) for trimming and compacting terraces Unit: m²

The rate includes for the trimming and compacting of horizontal and sloping sides of the terraces before topsoil and grass is placed, including for the removal of large stones and building rubble to form a uniform surface.

PSD 8.3.5 Extra excavation in all materials to provide working space around structures

Delete this sub clause and refer to sub clause PSD 5.2.2.4

PSD 8.3.8.1 c) Excavate by hand in soft material to expose existing service Unit: m³

Add the following to D 8.3.8.1(c):

Excavation by hand to expose existing services shall only be measured and paid for if so, ordered in writing by the Engineer. After the excavation of trial holes to determine the exact position and depth of existing services, at intervals as required by the Engineer, the excavation to a level of 300 mm above such services shall be measured and paid for as normal excavation, independent of the depth of such excavation. Only excavation within 300 mm of the existing services will be measured and paid for as excavation by hand and then only if ordered in writing by the Engineer. The rate shall also include the backfilling of the excavations and compaction thereof.

Add the following items in Sub-clause 8.3:

PSD 8.3.15 Extra over 8.3.3 for disposing of spoil material on a site provided by the Contractor and approved by the Employer's Agent Unit: m³

The unit of measurement shall be the cubic metre measured in accordance with Sub-clause 8.2 of SANS 1200 D of surplus and/or unsuitable material disposed of, on the instruction of the Employer's Agent, at a spoil site or spoil sites provided by the Contractor and approved by the Employer's Agent.

The rate shall include full compensation for the additional cost of providing a spoil site or other means of disposing of surplus spoil material, for transporting the

material regardless of the distance involved, for acceptance charges for such material and for all other incidental costs to dispose of the spoil material."

PSD 8.4 Subsoil drains and dewatering of excavations

PSD 8.4.1 Pipes in Subsoil Drains

(a) Perforated or slotted uPVC pipes complete with couplings (state size)
Unit:m

(b) uPVC fitting (state size and type of fitting) Unit: No

The rate shall cover the cost of supplying and installing the pipe or fitting in a stone bed or no-fines concrete, as indicated on the drawings.

PSD 8.4.2 Crushed stone in subsoil drains Unit: m³

The rate shall cover the cost of supplying, transporting irrespective of the distance and placing the stone in the subsoil drain, as indicated on the drawings.

PSD 8.4.3 Geotextile blanket in subsoil drains Unit: m²

The rate shall cover the cost of supplying the geotextile blanket and of placing it in the subsoil drain, as indicated on the drawings.

PSD 8.5 Dewatering of foundation excavations lump sum

Dewatering will be paid for as a lump sum for each structure or series of structures scheduled separately in the Schedule of Quantities. The lump sum shall be paid on a pro rata basis as the work progresses.

The tendered lump sum shall include full compensation for all work and operations required for keeping the excavations dewatered and dry and for the removal of silt and mud from the exposed concrete surfaces, all as specified in Sub-Clause PSD 5.2.7 of this section.

PSD 8.6 Empty and clean existing structures

The rate shall include all pumps, hoses etc. required to pump out liquids and sludge contained in an existing structure as well as the removal of sludge and sand remaining after the liquid has been pumped out.

Liquids and solids shall be pumped to other structures within a distance as specified while solids that cannot be pumped shall be loaded, transported and deposited at a suitable location within the freehaul distance or further as specified.

No electrical connection (electricity) will be available on site and the contractor must make his own provisions.

The unit of measurement shall be the cubic metre (m³) of liquid and sludge originally contained in the structure to be emptied.

Separate items are scheduled as follows:

- | | | |
|-----|--|-----------|
| (a) | Pumping of water/sludge mixture to other structures within a distance of 500 metres | Unit : m3 |
| (b) | Pumping of water/sludge mixture to other structures within a distance of 500 metres | Unit : m3 |
| (c) | Removal of non-pumpable water/sludge/soil mixture within the freehaul distance of 1.5 km | Unit : m3 |

PSDB EARTHWORKS (Pipe trenches) (SANS 1200 DB)

PSDB 1 SCOPE

Add the following to DB 1.1:

This specification also covers the excavation for cable trenches.

PSDB 2.2 Application

Substitute "pipe trenches" with "pipe and cable trenches" in DB 2.2.

PSDB 2.3 Definitions (Sub-Clause 2.3)

Add the following:

Topsoil

Topsoil is defined for the purpose of this Contract as the upper layer of soft material with a depth not exceeding 300mm below the natural ground surface in which veld or cultivated grass is growing.

Before proceeding with the bulk excavation, the Contractor shall strip the topsoil over the width of the pipe trench and place it in stockpiles, heaps or layers separate from other excavated material for later replacement in the upper layer of the backfilled trench. In order to conserve the bacteriological life in the topsoil, the storage heaps, strips or layers shall not exceed 1,5m in height.

After the backfilling of the trench has been completed to within 300mm of the natural ground level, the topsoil shall be returned to the upper 300mm layer from which it was removed. The topsoil shall be evenly spread and lightly compacted to leave the upper ground surface in a neat and tidy condition as near as possible to the original condition encountered before excavation commenced.

No topsoil shall be transported from the area from which it was excavated.

PSDB 3 MATERIALS

PSC 3.1 Classification for excavation purposes

PSC 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 Employer's Agent 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 Employer's Agent in good time shall entitle the Employer's Agent to reclassify, at his discretion, such excavated material."

PSDB 3.5 Backfill materials

- (a) Substitute "from trenches" in DB 3.5(a) with "from trenches or excavations for structures".

Add the following paragraphs to Sub-clause 3.5:

- "(c) 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 38mm 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 4 PLANT

PSDB 4.1 Excavation equipment

Add the following to DB 4.1:

All excavations exceeding the specified widths, shall be backfilled with approved selected material. No payment shall be made for this, and all relevant costs shall be deemed to be included in the tendered rates.

PSDB 5 CONSTRUCTION

PSDB 5.1 Precautions

PSDB 5.1.2 Stormwater, seepage and dewatering of excavations

Substitute DB 5.1.2 with the following:

The costs of dealing with water shall be deemed to be included in the tendered rates for excavation and no additional payment shall be made in this respect.

Add the following to DB 5.1:

PSDB 5.1.5 Hand Excavation

Certain trenches will have to be excavated by hand, because of limited access and space. The Contractor is to ensure that all excavation done by hand is in strict accordance with the requirements of the Occupational Health and Safety Act.

PSDB 5.2 Minimum base widths specified

Substitute paragraph (b) of DB 5.2 with the following:

The minimum base width for pipes of external diameter not exceeding 125 mm shall be 600 mm plus the nominal diameter of the pipes, irrespective of the depth at which they are laid, except for subsurface drains where the width shall be 400 mm.

The minimum base width for electric cable trenches shall be 300 mm. Where more than one cable is installed in the same trench, the base width shall become 300 mm plus the distance specified between cables. The minimum distance between cables shall be 50 mm.

PSDB 5.5 Trench bottom

Substitute "90 %" in the second paragraph of DB 5.5 with "93 % (100 % for sand)".

PSDB 5.6 Backfilling

PSDB 5.6.2 Material for backfilling

Substitute "from trench excavations" in the first paragraph of DB 5.6.2 with "from excavations for trenches and structures.

Add the following to DB 5.6.2:

Where pipe trenches cross a road the selected fill blanket specified in PS LB 3.2 shall be brought up to the bottom of the subbase.

PSDB 5.6.3 Disposal of soft excavation material

Add the following to DB 5.6.3:

The provisions of PS D 5.2.2.3 shall apply mutatis mutandis.

PSDB 5.7 Compaction

PSDB 5.7.2 Areas subject to traffic loads

Substitute "98 %" in DB 5.7.2 with "100 %".

Add the following to DB 5.7.2:

Sand backfilling shall be compared to 100 % of MAASHTO density.

Add the following:

PSDB 5.11 Unstable trench bottom

The Employer's Agent 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 platform for placing of the pipe bedding and laying the pipe in certain sections of the trenches. The stone layer shall consist of 19 mm single-sized crushed stone, and shall have a specified thickness of 150 mm over the specified minimum base width.

Should the material in the trench bottom or the bedding material be of such a nature that it can penetrate the stone layer, the Employer's Agent may instruct the Contractor to enclose the stone layer completely within a geotextile filter blanket (Kaymat U14 or equal approved), which shall have overlaps of at least 200 mm."

PSDB 5.12 Cleaning up as work proceeds

The Contractor shall complete all backfilling, trimming, levelling and cleaning up of the Site as work proceeds. This work shall not lag by more than 300m behind the pipe laying team

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1 BASIC PRINCIPLES

Delete "along the route of the pipeline" in DB 8.1.1.

Add the following to DB 8.1.2(b):

The depth of electric cable trenches is as indicated on the relevant drawings.

PSDB 8.2 Computation of quantities

PSDB 8.2.4 Shoring

Add the following to DB 8.2.4:

Shoring will only be measured and paid for if written approval is given by the Engineer before it is installed.

PSDB 8.3 Scheduled items

PSDB 8.3.2 Excavation

Unit: m

Add the following to DB 8.3.2:

Only lengths that have been completed and backfilled will be measured for payment. Payment will be made in two instalments, 80% at completion of the excavation and backfilling and the final 20% after final approval, which will take account of surface finishing, disposal of all unused material and acceptance of all test results including welding tests and hydraulic testing of the pipe as specified.

The rates tendered for excavation shall include backfilling at any point or points as the Engineer may direct and the disposal of surplus and unsuitable material at a site found by the Contractor. The rates shall also include the cost of selective excavation. The tendered rates shall also include full compensation for the provision of all labour, plant and equipment for shoring measures required.

The rate shall also cover the cost of dealing with any stormwater or subsurface water, which may appear in the trenches.

Add the following sub item:

(d) Excavate by hand in soft material to expose existing service Unit: m³

The provisions of sub clause PS D 8.3.8.1(c) shall apply mutatis mutandis.

(e) Excavations and backfill by hand Unit: m³

The provisions of sub clause DB 8.3.2(a) shall apply mutatis mutandis.

PSDB 8.3.5 Existing services that intersect or adjoin a pipe trench

PSDB 8.3.5 a) Services that intersect a trench Unit: No

Add the following to DB 8.3.5(a):

Existing services with a depth of cover exceeding 300 mm, measured from the bottom of excavation to the top of the existing service shall not be measured and paid for.

The rate shall also cover the cost of the following:

- (a) Sufficient photo's being taken of existing services and submitted to the Engineer before they are being crossed, if there is a possibility of a difference of opinion over the condition of these services.
- (b) Repair of damaged services to its original condition.
- (c) If such a service is removed, replacement thereof.

PSDB 8.3.5 b) Services that adjoin a trench Unit: No or m

Add the following to DB 8.3.5 (b):

The unit "number" will only be used for services such as poles and trees.

No payment will be made for overhead services that do not rest directly on the ground except where allowance is made for this in the schedule of quantities.

Existing services that rest directly on the ground e.g., poles, trees, walls and structures are handled in the same way as underground services, but the axis of the service will be determined as follows:

The vertical axis is defined as the nearest side or corner of the existing structure to the excavation, measured at the point where the structure and natural ground level intersect.

The horizontal axis will be at the point where the structure and the natural ground level intersect. In this instance, where the excavation falls above the 45° line but within 1,0 meter horizontally from the structure, the service will also be measured as adjoining.

If the structure, according to the above-mentioned, does not qualify as an adjoining service but the foundation of the structure is such that if a 45° line drawn from the nearest bottom corner thereof cuts through the excavation, the structure will be measured as an adjoining service **if approved by the Engineer**.

There will be distinguished between existing trunk services and existing erf connection.

PSDB 8.3.6.2 Extra-over DB 8.3.6.1 for imported material**Unit: m³**

The quantity will be calculated according to the actual volume of material placed in the final position according to the specified dimensions.

The rate is an “extra-over” Item DB 8.3.6.1 and includes all costs of supplying and placing of imported material in the final position with material from commercial sources.

PSDB 8.3.8 Pipe trenches crossing existing gravel roads**Unit: m³**

The rate shall cover the cost to backfill the trenches with sand, stabilise with 5 %, by volume, with cement and compact to 100 % MAASHTO density.

PSDB 8.3.9 Removal of Existing Pipes to dispose (New Sub-Clause 8.3.8)

- (a) Excavate in all materials to expose pipes, remove pipes from site and dispose thereof Unit: m
- (b) Excavate in all materials to expose valves, fittings and specials declared unusable, remove from site and dispose thereof Unit: No

Demolishing and disposal of any existing asbestos cement pipes shall be in accordance with the Asbestos Regulations 2001 under the Occupational Health and Safety Act no 85 of 1993.

For pipes, the unit of measurement shall be the linear metre of each type and diameter of pipe removed from the site in accordance with PSDB 5.13, measured in plain view long the centreline of the pipeline, without deduction for specials, junction boxes, manholes, valve chambers and the like as may be encountered. Separate items shall be scheduled for each different type and diameter of pipe.

For specials, the unit of measurement shall be the number of specials declared unusable by the Engineer in accordance with sub-clause PSDB 5.13, irrespective of the type or diameter of the special.

The tendered rates shall be all-inclusive and include for excavating in accordance with PSDB 5.13 to expose the pipe to 100mm below its bottom, as well as for excavating around junction boxes, manholes, valve chambers and the like. The rate shall also include the backfilling of the excavated material after all pipes and specials have been removed from the trench and compacting to 90% MOD AASHTO density. Material required from other necessary excavations on site, borrow pits or commercial sources as instructed by the Engineer to make up deficiency in backfill material will be measured and paid for under Sub-Clause 8.3.3.1 of SANS 1200 DB, but the compaction thereof to 90% MOD AASHTO density will be included in this rate.

The tendered rates shall further be fully inclusive for cutting or uncoupling the individual pipes and specials, all additional excavation as may be necessary to facilitate the insertion of lifting slings or the utilization of other lifting equipment, the provision and utilization of all such lifting equipment as may be necessary (e.g., cranes), for lifting the pipes and specials out of the trench. The tendered rates shall further include for the demolition and removal from the trench of all associated pipeline structures as may be encountered, such as junction boxes, inlet and outlet structures, valve chambers, anchor blocks and the like, and the loading and

removal of the pipes, specials and debris to spoil at an approved spoil site, including the full transport cost.

PSDB 8.3.10 Removal of Existing Pipes and Specials to re-use (New Sub-Clause 8.3.9)

- (a) Excavate in all materials to expose pipes, remove pipes from site and deliver to Municipal store yard Unit: m
- (b) Excavate in all materials to expose valves, fittings and specials, remove from site and deliver to Municipal store yard Unit: No

Demolishing and disposal of any existing asbestos cement pipes shall be in accordance with the Asbestos Regulations 2001 under the Occupational Health and Safety Act no 85 of 1993.

For pipes, the unit of measurement shall be the linear metre of each type and diameter of pipe removed from the site and delivered to the Municipal store yard in accordance with PSDB 5.13, measured in plain view long the centreline of the pipeline, without deduction for specials, junction boxes, manholes, valve chambers and the like as may be encountered. Separate items shall be scheduled for each different type and diameter of pipe.

For specials, the unit of measurement shall be the number of specials declared re-usable by the Engineer in accordance with sub-clause PSDB 5.13, irrespective of the type or diameter of the special, delivered to the Rand Water store yard.

The tendered rates shall be all-inclusive and include for excavating in accordance with PSDB 5.13 to expose the pipe to 100mm below its bottom, as well as for excavating around junction boxes, manholes, valve chambers and the like. The rate shall also include the backfilling of the excavated material after all pipes and specials have been removed from the trench and compacting to 90% MOD AASHTO density. Material required from other necessary excavations on site, borrow pits or commercial sources as instructed by the Engineer required to make up deficiency in backfill material will be measured and paid for under Sub-Clause 8.3.3.1 of SANS 1200 DB, but the compaction thereof to 90% MOD AASHTO density will be included in this rate.

The tendered rates shall further be fully inclusive for cutting or uncoupling the individual pipes and specials, all additional excavation as may be necessary to facilitate the insertion of lifting slings or the utilization of other lifting equipment, the provision and utilization of all such lifting equipment as may be necessary (e.g., cranes), for lifting the pipes and specials out of the trench. The tendered rate shall be fully inclusive for loading the pipes at the side of the trench, transporting to and off-loading at the specified Municipal store yard location and carefully stacking separately according to the type, class and diameter of the pipes and specials, including the full transport cost.

The tendered rates shall further include for the demolition and removal from the trench of all associated pipeline structures as may be encountered, such as junction boxes, inlet and outlet structures, valve chambers, anchor blocks and the like, loading and removal to spoil at an approved spoil site, including the full transport cost.

PSDM EARTHWORKS (ROADS, SUBGRADE) (SANS 120 DB)

PSDM 3 MATERIALS

PSDM 3.1 Classification for excavation purposes

Add the following to DM 3.1:

The requirements of PS D 3.1.2 shall apply mutatis mutandis.

All in situ pavement material shall be classified as soft material for excavation purposes.

PSDM 3.2 Classification for placing purposes

PSDM 3.2.3 Selected Layers

Substitute DM 3.2.3 with the following:

All imported material underlying the subbase or base of the final road prism, whichever may be applicable, that does not comply with the requirements for lower selected layer or upper selected layer in the respective depth categories, shall be removed and replaced with material complying with the requirements of selected layers, all at the Contractor's expense.

PSDM 5 CONSTRUCTION

PSDM 5.1 Precautions

PSDM 5.1.1 Safety, Existing Services, Stormwater, Etc. And Nuisance

Add the following to DM 5.1.1:

The requirements of PS A 5.4 shall apply mutatis mutandis.

PSDM 5.2 Methods and procedures

PSDM 5.2.2.3 b) Cut to spoil

Substitute DM 5.2.2.3(b) with the following:

The requirements of PS D 5.2.2.3 shall apply mutatis mutandis.

PSDM 5.2.2.4 Temporary stockpiling of materials

Add the following to DM 5.2.2.4:

The Contractor shall program the works in such a manner that suitable excavated material shall, if practically possible, be placed directly in the appropriate position to ensure that temporary stockpiling is limited to an absolute minimum. No payment shall be made for the temporary stockpiling of material where such

material is to be used for backfilling of pipe trenches, except when so ordered in writing by the Engineer.

PSDM 5.2.3 Treatment of roadbed

PSDM 5.2.3.3 Treatment of roadbed

- (a) Preparation and compaction of roadbed

Substitute the first paragraph of DM 5.2.3.3(a) with the following:

The roadbed shall be scarified to a depth of 150 mm, watered, shaped and compacted to 90 % of MAASHTO density (100 % for sand), except where otherwise ordered by the Engineer.

In clay areas only excavation and shaping to the correct level will be necessary.

PSDM 6 TOLERANCES

PSDM 6.5 Dimensions and level control

The Contractor shall submit to the Engineer, in a form acceptable to the Engineer, records of dimension and level control, prior to requesting the Engineer to carry out any routine inspections.

PSDM 7 TESTING

PSDM 7.3 Routine inspection and testing

Substitute DM 7.3.2 with the following:

No density shall be less than the specified minimum density for the relevant layer.

The cost of all routine testing done by the Engineer, and of which the results do not comply with the specified minimum requirement for the material, shall be borne by the Contractor and will be subtracted from the monthly payment certificates.

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.3 Scheduled items

PSDM 8.3.3 Preparation of roadbed

Substitute DM 8.3.3(b)(1) and (2) with the following:

- (b) Preparation of in situ roadbed in:

- 1) Intermediate material
- 2) Hard rock material

Unit : m³
Unit : m³

PSDM 8.3.4 Cut to Fill, Borrow to Fill

Unit: m³

Substitute "90 %" in DB 8.3.4 with "90 % (100 % for sand)" and "road prism" with "road prism and borrow pits".

PSDM 8.3.7 Cut to Spoil or Stockpile from

Unit : m³

Add the following to DM 8.3.7:

Payment for temporary stockpiling shall be made under DM 8.3.11, only if so, instructed in writing by the Engineer.

PSDM 8.3.12 Overhaul

Unit : m³ or m³.km

Substitute DM 8.3.12 with the following:

The provisions of Clause D 8.3.6 shall apply mutatis mutandis.

PSG CONCRETE (Structural) (SANS 1200G)

PSG 3 MATERIAL

PSG 3.2 Cement

PSG 3.2.1 Applicable specifications

Substitute G 3.2.1 with the following:

Only Ordinary Portland Cement (OPC) and Pulverised Fuel Ash (P.F.A.) shall be used in all concrete for this Contract. No other types of cement (e.g. Rapid Hardening cement, PBFC or Milled Granulated Blast furnace Slag) shall be permitted.

Pulverised Fuel Ash (PFA) shall comply with the following specifications:

- (a) PFA shall be obtained from only one Power Station, from which the PFA has been approved for use in concrete by the SANS.
- (b) All PFA shall comply with the requirements of SANS 1466.1988.

Pulverised Fuel Ash (PFA) shall be used as partial replacement of the Ordinary Portland Cement (OPC) in concrete. The maximum percentage by mass of PFA shall be 33% of the total cementitious material in the concrete, which is defined as the total mass of OPC and PFA, and shall be mixed before delivery to site.

The PFA/OPC Mix shall be stored in the same manner as that specified for OPC. When handled in bulk and stored in silos, the PFA/OPC mix shall require increased silo capacity, more efficient filters and aeration compared to OPC.

PSG 3.2.3 Storage of Cement

Add the following to G 3.2.3:

Separate storage facilities shall be provided for the various types of cement specified. Cement which is stored on the Site shall be kept under a cover that provides adequate protection against moisture and other factors that may aggravate deterioration.

Where the cement is supplied in bags, the bags shall be closely and neatly stacked to a height not exceeding 12 bags, and they shall be so arranged that they can be used in the order in which they were delivered to the Site. Different brands and/or types of the same brand shall be stored separately.

The storage of cement in bulk in silos or similar containers shall be permitted, provided that the cement drawn for use is measured by mass and not by volume.

Consignments of cement shall be used in the same sequence as that in which they are delivered to site. No cement shall be used which has been stored on site for a longer period than 6 (six) weeks. All cement so stored for a longer period than 6 (six) weeks, all cement damaged in any way, and all cement which does not comply with the specification, shall be removed immediately and permanently from the site.

PSG 3.4 Aggregates

PSG 3.4.1 Applicable specifications

Add the following to G 3.4.1:

Fine Aggregate

Fine aggregate shall be clean, coarse, sharp drift, pit or river sand entirely free from vegetable or any other foreign matter and shall be in accordance with SANS 1083 (latest edition). It shall be screened and washed if directed by the Engineer. No dump or crusher sand shall be used.

Samples of fine aggregate proposed to be used are to be submitted to and approved by the Engineer.

Fine aggregate shall be stored on a concrete surface and washed sand shall be allowed to drain for at least 24 (twenty-four) hours before use. The Engineer may require the Contractor to test the sand daily (or more frequently if necessary) for moisture content, impurities and grading before use. Water demand shall not exceed 195 l/m.

Coarse aggregate

Coarse aggregate for concrete shall be hard, non-friable quartzite or other suitable rock, in accordance with SANS 1083 (latest edition) crushed and screened to the specified sizes, of good shape, clean and free from dust.

The maximum size of aggregate shall be 25 mm in floor and walls and 19 mm in roof slab.

Coarse aggregate containing more than 19% (nineteen percent) shale will not be accepted.

Samples of coarse aggregate proposed to be used shall be submitted to and approved by the Engineer. Any broken stone delivered to the site which contains 5% more flaky and/or 10% more elongated particles than the approved sample will be condemned and shall be removed from the site. Voids ratio shall not exceed 47% (forty-seven percent).

PSG 3.5.2 Air-entraining agents

Substitute G 3.5.2 with the following:

Air-entraining agents shall not be used in concrete.

PSG 4 PLANT

PSG 4.5.2 Finish

Add the following to G 4.5.2:

All external corners shall be chamfered by the fixing of fillet strips into the corners of the formwork to form 20 mm x 20 mm chamfers, all at no extra payment.

PSG 4.5.3 Ties

Add the following to G 4.5.3:

Permanent metal ties shall have a minimum concrete cover of 40 mm after formwork has been removed.

Tie holes shall be filled with an approved expansive cementitious grout similar to "Durabed" of ABE. The product shall be prepared to a non-slump consistency, but where no cracking occurs when pressed into a firm ball. Trial mixes shall be made to arrive at the required working consistency.

PSG 5 CONSTRUCTION

PSG 5.1 Reinforcement

PSG 5.1.3 Cover

Substitute G 5.1.3 with the following:

The cover of concrete over reinforcement, unless otherwise indicated on the drawings, shall in no case be less than 40 mm.

PSG 5.2.1 Classification of Finishes

Add the following to G 5.2.1:

The following surface conditions are required on the various portions of the finished concrete:

(a) Rough

Concealed surfaces and surfaces more than 150 mm below final ground level.

(b) Smooth

All surface finishes not classified as "rough" in paragraph (a) shall be classified as "smooth". All exposed arises (i.e. where the angle between adjacent sides is 110° or less) unless otherwise indicated on the drawings, shall be chamfered 20 mm x 20 mm by means of triangular fillets fixed to the formwork.

(c) Special smooth, repaired and rubbed

This shall be for formed surfaces of structures prominently exposed to public view where appearance is of special importance. Formwork shall only be of approved plywood, approved commercial form board or smooth tongue-and-groove boards,

except that in certain cases such as for pre-cast units permission may be granted to use steel formwork provided that sufficient vibration is used. After defects have been repaired, as described in paragraph (e), all ridges, nail marks and other projections shall be removed with carborundum stone. After the treatment the surface shall then be kept continuously wet for 10 days after which period of additional curing it shall be allowed to approach surface dryness immediately prior to treatment by sack rubbing in order to secure a degree of suction most favourable for obtaining good bond. A soft mortar consisting of one part cement and two parts sand passing the 1,18 mm sieve shall be thoroughly rubbed over the entire exposed surface with clean hessian, completely filling all pits and irregularities. The mortar consistency shall be that of thick cream. At a sufficient interval after the sack rubbing to prevent smearing, but before the mortar hardens, most of the excess mortar shall be removed by rubbing with clean hessian. After the mortar has set for several hours, curing shall be resumed and continued for at least two (2) days. The surface shall then be allowed to become surface dry and in this condition well sanded with no. 2 sandpaper.

(d) Exposed arises

All exposed arises (i.e. where the angle between adjacent sides is 110° or less) unless otherwise indicated on the drawings, shall be chamfered 20 mm x 20 mm by means of triangular fillets fixed to the formwork.

(e) Repair of concrete

Immediately after the removal of the formwork, the Engineer shall inspect the concrete for defects. Skilled workmen only shall perform all repairs of such defects, by approved methods and to the satisfaction of the Engineer and at the expense of the Contractor.

Repairs shall be carried out as soon as practicable after the removal of the formwork and in any case not longer than twenty four (24) hours after exposure. Concrete that is damaged from any cause and concrete that is honeycombed, fractured or otherwise defective, and concrete which, because of excessive surface depressions must be excavated and built up to bring the surface to the prescribed lines, shall be removed and replaced with mortar or concrete as hereinafter specified or as otherwise directed by the Engineer.

Concrete filling generally of the same class as the damaged concrete shall be used for holes extending entirely through concrete sections and of such a size as will accept concrete and for holes in mass concrete greater in area than 0,1 m² and deeper than 100 mm and for holes in reinforced concrete which are greater in area than 0,15 m² and which extend beyond the reinforcing. Mortar filling composed of sand and cement in the same proportions as used for the concrete and of a consistency such as will make the mortar sufficiently plastic to be easily placed, shall be used for all other imperfections.

A filling shall be bonded tightly to the surface of the area being repaired and shall be bound and free from shrinkage, cracks and hollow areas after the filling has been cured and dried. Curing of repaired areas shall be performed in such a manner and for such periods as the Engineer may direct.

Particular care shall be exercised to ensure that the colour of the repair work shall match as nearly as possible to the colour of the surrounding concrete. No

cement washing or plastering shall be carried out except on the written instruction of the Engineer.

PSG 5.2.2 Preparation of formwork

Add the following to this Sub-Clause:

The joints between continuous formwork elements shall be closely butted and, where necessary, if undue leakage is expected, the joints shall be caulked, taped or packed with a sealing gasket, all at no extra payment. Paper, cloth or similar materials shall not be used for this purpose.

PSG 5.2.5 Removal of formwork

In Table 2 of G 5.2.5.2, substitute "Portland cement and Portland cement 15" in columns 2, 3 and 4 with "CEM 1 Portland cement, delete columns 5 to 10.

PSG 5.4 Pipes and conduits

Add the following to G 5.4:

All pipes and specials, which must be installed in the floors and walls of structures, shall be embedded in the concrete during the casting of such concrete. No holes shall be left for the later installation of pipes and specials, without the written approval of the Engineer.

Where such holes have been approved by the Engineer, the Contractor shall be responsible for the grouting-in of such pipes or specials with an approved expansive cementitious grout as specified in PS G 4.5.3, regardless of whether or not these have been supplied by himself. The Contractor shall provide a smooth, dense and waterproof finish around the pipes or specials.

The clear space between pipes of any kind embedded in reinforced concrete and the clear space between such pipes and reinforcement shall at any point be not less than –

- (a) 40 mm, or
- (b) 5 mm plus the maximum size of coarse aggregate, whichever is the greater.

PSG 5.5 Concrete

PSG 5.5.1.2 Consistency

Add the following under Sub-Clause 5.5.1.2(a):

The slump for concrete to be used in water retaining structures shall not be less than 30 mm and not more than 60 mm.

PSG 5.5.1.3 Workability

Add the following to this Sub-Clause:

The concrete mix to be used in water retaining structures shall have a water/cement ratio not exceeding 0,5.

PSG 5.5.1.5 Durability

Substitute G 5.5.1.5 with the following:

Concrete shall be so proportioned to ensure that the water/cement ratio does not exceed 0,5 and, to ensure workability, water-reducing admixtures of approved manufacture shall be used in preference to increase the cement content.

PSG 5.5.1.7 Strength concrete

Add the following to G 5.5.1.7:

The concrete mix shall be designed by a specialist organization. No concrete shall be placed until the Contractor's concrete mix design has been approved by the Engineer. The concrete shall have a minimum cement content of 420kg/m³. The Contractor shall submit to the Engineer a statement of the mix proportion proposed, together with a report from the specialist organization, showing the 28-day concrete strength obtained when using the material proposed for the work. The cost of the concrete mix design shall be borne by the Contractor and shall be deemed to be included in the rates for concrete work.

Admixtures may be used to increase the workability of the concrete but only with the express approval of the Engineer and when the details of the active ingredients of the admixture and their effects are supplied to the Engineer for approval before use. No additives likely to impair low permeability of the concrete will be approved. Calcium chloride or admixtures containing chlorides may not be used in concrete for water retaining structures. Other admixtures and constituents may only be used with the approval of, or as specified by the Engineer.

The grade of strength concrete and the maximum nominal size of coarse aggregate for each portion of the works, unless otherwise indicated on the drawings, shall be as follows:

(a)	Mass concrete under floors and foundations	20 MPa/19 mm
(b)	Blinding layers	20 MPa/19 mm
(c)	Encasing of pipes	20 MPa/19 mm
(d)	Strip foundations	20 MPa/19 mm
(e)	Benching and screeds	20 MPa/10 mm
(f)	All Reinforced concrete	35 MPa/19 mm
(g)	All water retaining concrete	35 MPa/19 mm

PSG 5.5.7 Construction Joints

Add the following to G 5.5.7.1:

Construction joints shall be limited to the minimum and shall only be made in positions as shown on the drawings or in positions as specifically approved by the Engineer. Construction joints between tank bottoms, floors, or wall bases, and the walls standing on them shall not be made flush with the supporting surface, but shall be made in the wall 150 mm above the base. The 150 mm high

riser wall shall be cast as an integral part of the bottom, floor or base, i.e., the concrete in the riser shall be deposited simultaneously with the concrete in the bottom, floor or base adjacent to it. Where there is a fillet at the bottom of a wall, the construction joint shall be made 150 mm above the fillet.

A PVC waterstop without centre bulb shall be installed at all construction joints in walls of water retaining structures. The size of the waterstops shall be 150 mm in walls thinner than 200 mm and 200 mm in walls of 200 mm thickness and more, or as indicated on the drawings.

PSG 5.5.7.4 Expansion joints

Expansion joints shall be formed in positions and in accordance with details as shown on the drawings. All expansion joints shall be formed with an approved closed cell polyethylene fill material with a density of not less than 100 kg/m³, or as otherwise specified. Joint sealers shall consist of a two-component polyurethane sealing compound complying with SANS 1077. Rearguard S-type PVC water stops with centre bulbs shall be installed under floors and Hydrofoil PVC water stops with centre bulbs in walls, as shown on the drawings.

All sealants, fill material and waterstops shall be installed strictly in accordance with the specification of the manufacturers and to the satisfaction of the Engineer. The sealant shall be installed in one operation and jointing to already hardened sealant will not be permitted.

All expansion joints shall be provided with approved bond breaker tape between the fill material and the sealant.

PSG 5.5.7.4.1 Filled Joints

Filled joints shall be accurately formed to the dimensions shown and with the filler material specified on the Drawings. The filler shall be secured in position so that it will not be displaced during or after concreting if the filler is to remain permanently in the joint.

Wherever polystyrene or a similar material which is susceptible to damage is used to form joints, it shall be lined with a hard surface on the side to be concreted. The hard surface shall be sufficiently resilient to ensure that the joint and surfaces can be formed free from defects.

PSG 5.5.7.4.2 Sealing of Joints

(a) General

Sealed joints shall be made watertight over the full length of the joints, unless otherwise permitted by the Engineer, and the joint dimensions shall be as shown on the Drawings.

(b) Preparation of joints

The reaming of joints by sawing or other means shall be undertaken when edge spalling or ravelling can be avoided and shall be subject to the Engineer's approval. After removal of the temporary filler material or the breaking-out of the excess concrete, the inside faces of the joint shall be wire-brushed or grit-blasted to remove all laitance and contaminants. Thereafter the joint shall be cleaned

and blown out with compressed air to remove all traces of dust. Solvents shall not be used for removing contaminants from concrete and porous surfaces.

Care shall be taken to ensure that primers or adhesives are applied only to surfaces that are absolutely dry. The primer or adhesive shall be applied strictly in accordance with the manufacturer's instructions. Unless otherwise specified, the primer shall be applied within the temperature range of 10°C to 40°C and the sealant shall be applied after the curing period of the primer and within the period during which the primer remains active.

(c) Sealants

Sealants shall be applied strictly in accordance with the manufacturer's instructions by a person skilled in the use of the particular type of sealant. The trapping of air and the formation of voids in the sealant shall be avoided. The sealant shall be finished to a neat appearance flush with the edges of the concrete or to the specified depth.

Thermoplastic hot-poured sealants shall not be poured into the joints when the temperature of the joint is below 10°C. The safe heating temperature shall not exceed the specified pouring temperature by more than 10°C.

Two-part thermosetting chemically curing sealants shall not be applied after expiry of the specified potlife period, which shall commence once the base and activator of the sealant have been combined.

(d) Waterstops

General requirements

The waterstops shall be supplied in unjointed standard production lengths. Site jointing shall be limited to the absolute minimum. Where lengths in excess of the standard production lengths are required, such longer lengths shall preferably be factory jointed.

At intersections, transitions and abrupt changes of direction, factory-moulded watertight junction pieces shall be used so that any site jointing can be restricted to simple joints. When a waterstop with a centre bulb is intersected, the centre bulb shall be continuous throughout the intersection irrespective of the make-up of the intersection.

Plasticized, flexible PVC waterstops shall be manufactured from high-quality virgin material and shall not contain any scrap or reclaimed material. The waterstops shall be light coloured so as to reduce heat absorption when exposed to sunlight.

The waterstops shall be precision moulded or extruded to the required cross-sectional profile, they shall be free from porosity or other imperfections, and shall be provided with eyelets so that they can be securely fixed to prevent displacement during concreting.

All joints shall be butt-jointed hot-welded joints. Where joints cannot be factory made, Site joints shall be made in accordance with the manufacturer's instructions with equipment prescribed or supplied by the manufacturer and approved by the Engineer.

PSG 5.5.9 Adverse Weather Conditions

Add the following to G 5.5.9.1:

No material having a temperature of below 5 °C shall be used for concrete, and no concrete shall be deposited when the ground or air temperature is below 2 °C. Furthermore, if the air or ground temperature is likely to fall below 2 °C within 12 (twelve) hours after depositing of concrete, no concreting shall be done without the written consent of the Engineer. If such consent is given the Contractor shall heat the aggregate stockpiles and mixing water, and defrost the formwork and reinforcement.

PSG 5.5.10 Concrete Surfaces

Add the following to G 5.5.10.1:

Concrete surfaces under screeds, granolithic floor finishes or benching, and surfaces of strip foundations and footings shall be brought up to a plane, uniform surface with a suitable screed board.

Add the following to G 5.5.10:

PSG 5.5.10.4 Wood-floated finish

Where wood floating is specified or scheduled, the surface shall first be given a finish as specified in G 5.5.10.1 and after the concrete has hardened sufficiently, it shall be floated to a uniform surface free from trowel marks. The screeded surface shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screed marks.

PSG 5.5.10.5 Steel-floated finish

Where steel floating is specified or scheduled, the surface shall be treated as specified in PS G 5.5.10.4 except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screeded surface shall be steel-trowelled under firm pressure to produce a dense, smooth, uniform surface free from trowel marks.

PSG 5.5.11 Watertight Concrete

Add the following to G 5.5.11:

All structures shall be deemed to be water retaining, unless otherwise specified.

PSG 5.5.11.1 Requirements and tests for water tightness of structures

The completed structure shall be watertight, and the quality and finish of the work shall be such that no after-treatment of the work such as plastering or cement wash is necessary to ensure compliance with this requirement.

The works will not be certified complete until the structures enumerated in PS G 5.5.11 has been proved by testing to be watertight.

Upon completion of construction and when so agreed by the Engineer, the structure shall be filled by the gradual admission of water until the water level reaches the designed maximum level. The water level shall then be carefully

noted and recorded by the Engineer in relation to a fixed benchmark, and the structure shall be allowed to remain filled for a period of 2 (two) weeks or such longer time as may be required to permit complete saturation of the concrete. During this period, readings will be taken by the Engineer and the results so obtained will be available for the information of the Contractor.

At the end of this period more water shall be added, if necessary, to bring the water level back to the designed maximum level and the water shall be left undisturbed for a period of at least 4 (four) days during which time the level shall again be recorded by the Engineer at regular intervals. The structure shall be considered to be watertight if the drop in water level does not exceed 6 mm in 96 (ninety-six) hours in the case of a roofed structure and if no leakage is apparent.

The acceptable drop in level in the case of an unroofed structure shall be such that it allows for normal evaporation during the time of the test.

If appreciable leakage is evident at any stage of the filling or testing or if, in the opinion of the Engineer, the degree of water tightness is unsatisfactory, the Contractor shall, when so ordered by the Engineer, discontinue the test immediately and at his own expense take approved steps to rectify the work. The work of rectification shall be continued assiduously until, on repetition of the test procedure, a satisfactory test result is obtained and the degree of water tightness is acceptable.

Backfilling around structures shall not commence until a satisfactory test result has been obtained.

The Engineer shall have the right to retest the structure before the expiry of the defects liability period and the results of these tests will be made available to the Contractor. If these tests indicate to the Engineer that the degree of water tightness is unsatisfactory, the Engineer (before issuing the final certificate) will be entitled to order the Contractor to rectify the work at his own expense in such a manner as will cause least interruption of the water supply to consumers and will ensure that the degree of water tightness of the structure is satisfactory.

PSG 5.5.13 Grouting

Add the following to this Sub-Clause:

PSG 5.5.13.1 Materials

- (a) Water. Water for grout shall comply with the requirements given in Sub-Clause 3.3 of SANS 1200 G.
- (b) Aggregates. Notwithstanding the requirements of Sub-Clause 3.4.1 of SANS 1200 G, the grading of fine aggregate (sand) and coarse aggregate (stone or pea gravel) shall conform to the gradings given in Tables 1 and 2, respectively, below.
- (c) Cement. Cement shall be ordinary Portland cement complying with SANS 471.
- (d) Admixtures. Admixtures shall comply with the requirements of Sub-Clause 3.5 of SANS 1200 G and shall have a proven record of satisfactory performance under conditions encountered in the Republic of South Africa.
- (e) Proprietary grouting materials. Unless otherwise approved by the Engineer, proprietary grouting materials shall be obtained ready mixed in sealed pockets as supplied by the manufacturers.

TABLE 1 - SAND		TABLE 2 - STONE OR PEA GRAVEL	
1	2	1	2
Test sieve nominal aperture size, mm	% Passing (by mass)	Test sieve nominal aperture size, mm	% Passing (by mass)
9,75	100	9,5	100
4,75	95 - 100	4,74	95 - 100
1,18	45 - 65	2,36	0 - 5
0,3 (300 µm)	5 - 15		
0,15(150 µm)	0 - 5		

PSG 5.5.13.2 Preparation and procedures

- (a) Before a machine or structural bedplate is placed on the concrete the following steps shall be carried out:
 1. All defective concrete, laitance, dirt, oil, grease, and loose material shall be removed from the concrete foundation by bush-hammering, chipping, or other means until sound clean concrete is obtained. The surface of the foundation shall be scabbled, but shall not be so rough as to interfere with proper placing of the grout. All foundation bolt sleeves shall be cut out, or cut off flush if the sleeves cannot be removed. The top of the foundation shall be re-shaped if necessary.
 2. The underside of each steel base, particularly in the bearing areas, shall be cleaned and any burrs and ragged edges removed before the base is placed in its final location.
 3. All holding-down bolt sleeves shall be thoroughly cleaned of any materials that may prevent the grout from flowing freely to the bottom of the bolt sockets.
- (b) The base shall be properly aligned and levelled and shall be maintained in that position during grouting.
- (c) After the machine or structural bedplate has been placed the following precautions shall be observed:
 1. Shimming shall be kept to a minimum. Steel plates shall be used for packing and shall be ground to the required thickness, where necessary.
 2. Before grouting is started all loose dirt, oil, grease, and other foreign matter on the surface of the foundation, the undersides of bedplates, and in the bolt holes shall be removed by means of compressed air or other approved means. The surface of the foundation slab shall be thoroughly saturated with clean water, and all free water shall be removed from the surface and the bolt holes just before the grout is placed.
 3. Grouting shall not be carried out until the alignment of all units to be grouted has been checked and approved by the Engineer.
 4. Special care shall be taken with grouting in hot or cold weather to ensure proper setting and gain of strength and, in the case of proprietary grouting materials, by having ice or hot water available, as

the case may be, in accordance with the instructions of the manufacturer. Enclosures shall be provided for the grout such that, until it has set, its temperature will be in the range 15-27°C.

Shields to protect the grout from the sun and from hot winds shall be provided by the Contractor when so ordered.

PSG 5.5.13.3 Formwork

Formwork for grouting shall comply with the applicable requirements of Sub-Clause 5.2 of SANS 1200 G. Forms shall be caulked where necessary. Adequate clearance between forms and bedplates shall be provided to enable the grout to be worked into place.

PSG 5.5.13.4 Mixing (all free-flowing grouts except epoxy grouts).

The grout shall be mixed to a homogeneous uniform mixture and delivered ready for placing at a temperature between 15°C and 25°C.

The materials and water shall be mixed in a mortar mixer for at least 3 min. or, in the case of small jobs only, shall be thoroughly mixed by hand, the entire mass being turned over enough times to ensure even distribution of its components.

The mixing shall be done as close as possible to the place(s) where the grout is placed. No more grout shall be mixed at any one time than can be placed in a period of 20 min. After the grout has been mixed it shall not be retempered by the addition of water.

PSG 5.5.13.5 Grouting (all free-flowing grouts except epoxy grouts)

The grout shall be placed quickly and continuously to avoid the undesirable effects of over-working. (These effects are segregation, bleeding, and breaking-down of initial set). The method of placement shall be subject to approval. The means of placing the grout shall be such that the grout will completely fill the space to be grouted, will be thoroughly compacted, will be free of air pockets, and will have evenly distributed contact over an area in excess of 80% or, in the case of expanding grout, 95% of the bearing area of the item to be supported.

Wherever practicable, grout shall be placed from one side only and where this is not practicable, care shall be taken to ensure that any entrapped air is released.

After the grout has taken its initial set,

- (a) the forms shall be removed;
- (b) excess grout shall be so cut away as to leave a smooth and neatly finished job;
- (c) except where the grout is intended to provide resistance to side thrust, all edges shall be trimmed at 45° to the vertical, from the bottom edge of the bedplate; and
- (d) all excess grout on or about the bedplates shall be removed.

Damage to paintwork, if any, shall be repaired within 24 hours. Packing plates, shims, and other levelling devices shall remain in position.

PSG 5.5.13.6 Dry-packed grout (standard dry sand and cement grout)

Dry-packed grout shall have a minimum compressive strength at 28 d of 20 MPa. The quantity of water added after placing shall be kept to a minimum consistent with placing conditions, and the cement, sand and, where applicable, pea gravel proportions by mass shall be as follows:

- (a) Where the clearance between bedplate and foundation is 25 mm or less: 1 part of Portland cement and 2 parts of sand;
- (b) Where the clearance exceeds 25 mm: 1 part of Portland cement, 1 part of sand, and 1 part of pea gravel.

Dry-packed grout shall be rammed by means of tamping rods against formwork placed along three sides of the bedplate.

PSG 5.5.13.7 Non-shrink grout with metallic aggregate

The manufacturer's instructions shall be observed when non-shrink grout with metallic aggregate is used.

Where the clearance between the bedplate and the foundation is less than 50 mm a sand-based mix shall be used. Where the clearance exceeds 50 mm the Engineer may order a mix with a base of sand plus pea gravel to be used.

PSG 5.5.13.8 Expanding grout with powdered aluminium additive

The manufacturer's instructions shall be observed when an expanding grout with powdered aluminium additive is used. Where the clearance between the bedplate and the foundation is less than 25 mm, a sand-based mix shall be used.

Where the clearance exceeds 25 mm the Engineer may order mix with a base of sand plus pea gravel to be used.

Each batch shall be mixed for at least 6 min. after the powdered aluminium has been added. Where a ready-mixed grout is used, the powdered aluminium shall be added at the placing site and the batch mixed as specified in PSG 9.4. Grout shall be placed within 45 min. after the addition of the powdered aluminium.

The Contractor shall not use powdered aluminium additive when the ambient temperature is below 5°C.

PSG 5.5.13.9 Epoxy grout (epoxy mortar type only)

The manufacturer's instructions shall be observed when an epoxy grout is used.

PSG 5.5.13.10 Testing (Clause 7)

The Contractor shall, where so ordered, carry out a site test for each grouting procedure and each grouting gang to be used. The tests shall be carried out on a

dummy bedplate similar in configuration to that which is to be grouted, but not exceeding 1 m in area unless otherwise ordered.

When the dummy bedplate is dismantled, the underside shall show a minimum grout contact area of 80% with reasonably even distribution of the grout over the surface grouted except that, in the case of expanding grout, the minimum grout contact area shall be 95%. The test shall show evidence of good workmanship and materials and the results shall be to the satisfaction of the Engineer.

The Contractor shall, when so ordered, make standard test cubes from various grout mixtures and subject them to compression tests to determine whether the specified strength has been achieved. Test procedures shall comply with the relevant requirements of Sub-Clause 7.2.1 to 7.2.3(f) SANS 1200 G.

PSG 5.6 Screed in circular sedimentation tanks

No screeding of circular sedimentation tank floors shall be allowed unless agreed to by the Engineer. In this case, the contractor shall consult with the Mechanical Contractor, before application of the screed, to obtain advice on the use of the scraper mechanism for a smooth finish to the screed.

PSG 5.8 No-fines concrete

PSG 5.8.1 Materials

Cement shall be CEM II.

Water and aggregate shall comply with the requirements of G 3.3 and G 3.4.

Each size of aggregate shall be a single size aggregate graded in accordance with SANS 1083.

PSG 5.8.2 Classes of no-fines concrete

No-fines concrete shall be classified by the prefix NF and the size of aggregate to be used. Class NF 19 means a no-fines concrete with a 19 mm nominal size aggregate.

The volume of aggregate per 50 kg of cement for each class of concrete shall be as follows:

CLASS	AGGREGATE PER 50 kg CEMENT
NF 38	0,33m ³
NF 19	0,30m ³
NF 13	0,27m ³

PSG 5.8.3 Batching and mixing

Cement shall be measured by mass or in full pockets of 50 kg each and aggregate shall be measured by volume in approved measuring boxes or barrows.

The aggregate shall be moist or wetted before the cement is added. Where drum mixers are used, about 20 % of the water shall be poured into the drum before the aggregate and cement are loaded. The mixing time in the drum shall be about 45 to 50 seconds.

The quantity of water added shall be just sufficient to form a smooth grout which will adhere to and completely coat each and every particle of aggregate, and which is just wet enough to ensure that, at points of contact of aggregate, the grout will run together to form a small fillet to bond the aggregate together. The mix shall contain no more than 20 litres of water for every 50 kg of cement.

Mixing shall be done in an approved batch-type mechanical mixer, but small quantities may be hand mixed.

PSG 5.8.4 Placing

No-fines concrete shall be placed in accordance with the procedure approved by the Engineer. It shall be placed in its final position within 15 minutes of having been mixed.

The concrete shall be worked sufficiently to ensure that it will completely fill the space to be concreted and that adjacent aggregate particles are in contact with one another. Excessive tamping shall be avoided and the concrete shall not in any circumstances be vibrated.

PSG 5.8.5 Protection

All no-fines concrete shall be protected from the elements and loss of moisture. Protection against loss of moisture shall be accomplished by one or more of the following methods

- (a) Retaining formwork in place;
- (b) Covering exposed surfaces with sacking or other approved material kept continuously wet;
- (c) Covering exposed surfaces with plastic sheeting.

No-fines concrete placed during cold weather shall be adequately protected against frost for at least three (3) days.

PSG 5.9 Joining new concrete to existing

Where partial demolition is required for extension work to existing structures, the contact face shall be cut to predetermined line and level, and any loose and fragmented material shall be removed, and projecting steel cleaned and bent as directed by the Engineer. Where partial demolition is not required but extension work only, the contact surface shall be scabbled and cleaned of all dirt and loose particles.

If dowels are required, they shall be installed in holes drilled into the existing structure, in accordance with the details shown on the drawings, and secured by means of an approved type of epoxy bonding compound such as Epidermix 372 or similar.

Fresh concrete shall be bonded to the old concrete with an approved type of epoxy bonding compound, such as Epidermix 344 or similar.

PSG 6 TOLERANCES

PSG 6.2.2 Concrete Surfaces

Add the following to G 6.2.2:

The top surface of the circular sedimentation tank walls shall be finished to Degree of Accuracy I in G 6.2.3(d)7, but there shall be no abrupt changes in the continuous surface. Deviations shall be measured as set out in G 6.1.2(a).

PSG 8 MEASUREMENT AND PAYMENT

PSG 8.1 Measurement and rates

PSG 8.1.1 Formwork

Delete "or the plan size of the excavation where additional excavation is provided to facilitate erection of forms" in the first sentence of PS G 8.1.3.1(c).

Delete the following in G 8.1.1.3(c):

"and for different prop heights for beams and slabs".

PSG 8.1.3 Concrete

Delete "or the plan size of the excavation where additional excavation is provided to facilitate erection of forms" in the first sentence of PS G 8.1.3.1(c).

Add the following to PS G 8.1.3.1(d):

Strip foundations and encasement of pipes shall be cast directly against the sides and bottoms of excavations. No payment shall be made for additional concrete in over-break.

Delete the full stop at the end of G 8.1.3.3(a) and add the following:

"And special steps necessary before depositing concrete during cold weather, as prescribed in PS G 5.5.9".

PSG 8.2 Scheduled formwork items

PSG 8.2.5 Narrow Widths

Unit: m

Substitute G 8.2.5 with the following:

Narrow widths of formwork shall not be measured separately, but shall be included in G 8.2.1 and G 8.2.2, as applicable, unless a specific item has been allowed for in the schedule of quantities.

Add the following to G 8.2:

PSG 8.2.7 Chamfers exceeding 20 mm x 20 mm, grooves and rebates Unit: m

The size of chamfers, or the width and depth in the case of grooves and rebates, is stated.

PSG 8.4 Scheduled concrete items

PSG 8.4.4 Unformed Surface Finishes Unit: m²

Add the following to G 8.4.4:

The concrete surface finishes under screeds, granolithic finishes or benching as prescribed in PS G 5.5.10 shall not be measured separately. The rates for the related concrete items shall also cover the cost of these surface finishes.

PSG 8.4.7 Concrete complete with formwork and/or trowel finish Sum or m³

The rate shall cover the cost of the provision of concrete (made from ordinary Portland cement, unless otherwise scheduled), mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints, striking-off or levelling as applicable, trowelling and curing and repairing where necessary, together with the cost of all parts of formwork in contact with the concrete and the necessary bearers, struts, and other supports, plus the layout and plant necessary to erect and strike such formwork.

PSG 8.5 Joints Unit: m

Add the following to G 8.5:

Only construction joints with PVC waterstops shall be measured separately. The cost of all other construction joints shall be deemed to be included in the rates for the relevant concrete items.

The cost of all construction and expansion joints shall include formwork, joint filler and sealer as well as waterstops where applicable.

PSG 8.7 Grouting

Add the following pay items:

(a) Grouting in of equipment supplied and installed by the Plant Supplier

- | | |
|---|-------------------------------------|
| (i) using non-shrink grout (state type) | Unit: Cubic metre (m ³) |
| (ii) using dry-packed grout | Unit: Cubic metre (m ³) |

The unit of measurement shall be the cubic metre of completed grouting.

The tendered rate shall include full compensation for supplying of all materials, mixing, applying and finishing to a steel-float surface finish after installation of the Plant.

Add the following pay items:

PSG 8.9 Test structure for watertightness Unit: Sum

The rate shall cover the cost of all equipment and labour necessary to test the structure for water tightness as described in PS G 5.5.11.1, including the supply of water and filling such structure.

No additional payment will be made for re-testing the structure for water tightness after the repair of leaks.

PSG 8.10 Building pipes into concrete work and grouting pipes installed by the mechanical contractor Unit: No

The rate shall cover the cost of forming the opening for the pipe, scabbling, cleaning and preparing the concrete surface, providing an approved non-shrink epoxy grout, placing and ramming of it solidly into all voids, formwork and finishing to a smooth watertight surface.

PSG 8.12 Join new concrete to existing

(a) Partial demolition (describe) Unit: Sum

(b) Scabbling of existing surface Unit: m²

(c) Steel dowels Unit: No

The rate for (a) shall cover the cost of partial demolition as described, and of exposing, cleaning, cutting and bending the existing reinforcement, as well as repairing the concrete surface that is to be retained and disposing of waste material.

The rate for (b) shall cover the cost of scabbling the existing surface, as well as the cost of supplying and applying the epoxy bonding compound.

The rate for (c) shall cover the cost of drilling for and supplying and installing the steel dowels, as well as the cost of supplying and applying the epoxy bonding compound.

PSG 8.13 Sealing of openings in top surface of no-fines concrete with plaster

(a) Plane horizontal Unit: Square metre (m²)

(b) Plane sloping Unit: Square metre (m²)

The unit of measurement shall be the square metre of sealing of no-fines concrete.

The tendered rate shall include full compensation for supplying for the construction of the plaster work, including the supply of all material, mixing, applying, finishing to a wood-float finish.

PSHA STRUCTURAL STEELWORK (SUNDRY ITEMS)

PSHA 3 MATERIALS

PSHA 3.1 Structural steel

The grade of steel shall be 350W.

PSHA 3.3 Bolts, nuts and washers

PSHA 3.3.1 Bolts and nuts (Other than Friction Grip)

Add the following to this Sub-Clause:

All bolts and nuts shall be of grade 4,3 steel. Washers shall be provided at each nut and shall be of the same material (or coating where applicable) to match the bolt and nut. Single coil square section spring washers shall be fitted to all nuts subject to vibration.

Bolts other than jacking bolts shall project not less than 3 mm and not more than 10 mm from the heads of the nuts after tightening.

Holding down bolts to be built into concrete work as well as bolts to be installed above ground level directly above and under water shall all be of stainless steel grade 304. Bolts for flexible couplings and flanges for underground installation shall be hot-dip galvanized in accordance with the requirements of SANS 763. Bolts to be installed inside buildings shall be hot-dip galvanized in accordance with the requirements of SANS 763.

Suitable plastic sleeves and/or washers shall be used for protection against corrosion by metallic action.

PSHA 4 PAINTS AND PROTECTIVE COATINGS

Unless indicated otherwise corrosion protection to all structural mild steel shall be as follows:

- (a) Surface preparation ISO 8501-1-1989
- (b) Two coats of Carbomastic 15 primer or equivalent
- (c) Two coats of Carboline 134 final coat or equivalent

PSHA 5 CONSTRUCTION

PSHA 5.2 FABRICATION AND ASSEMBLY

PSHA 5.2.6 Handrails

Substitute the first sentence of HA 5.2.6 with the following:

Handrails shall be of the tube and sphere type similar to Monoweld and shall be manufactured by an approved firm specialising in such works from grade 304 L stainless steel or hot dipped galvanized (heavy duty coating), as scheduled or shown on the drawings.

Handrails shall be 1 000 mm high and shall consist of a handrail and a knee-rail, both manufactured of steel tubing of nominal thickness 2,6 mm and of nominal outside diameter of at least 34 mm.

Stanchions shall be manufactured pre-formed in one piece and shall be of steel tubing of nominal thickness of 2,6 mm and of nominal outside diameter of at least 42 mm. The bases of the stanchions shall be manufactured of 150 mm x 75 mm x 12,5 mm flat bars and shall be pre-formed to suit the situation in which they are to be installed (i.e., for platform- or side-mounting, and for horizontal- or sloped-mounting on concrete or steel), and the stanchion spheres shall be pre-formed to suit right angled or other angled intersections), all as shown on the drawings.

Stanchions shall be spaced at intervals not exceeding 1,5 m and shall be fixed with two M16 bolts, washers and nuts each. All joints shall be welded.

Materials shall be as shown on the drawings or as scheduled.

PSHA 5.2.11 Ladders

Add the following to HA 5.2.11:

Materials shall be as shown on the drawings or as scheduled.

PSHA 5.2.12 Prefabricated open grid floors

Add the following to clause 5.2.12.1:

Open grid flooring shall be of square pattern type of approved manufacture with 40 x 4 mm minimum thickness bearer bars spaced at not more than 40 mm centres and shall be manufactured in grade 304 stainless steel or 3 CR 12 steel (as scheduled or as shown on the drawings). The tendered rate shall include for all cutting into the required panels, banding and for frames detailed below.

Open grid flooring shall be provided with welded frames as scheduled, made of 50 x 50 x 5 mm thick 3 CR 12 steel angle to provide a seating for the open grid flooring. The nett clearance between the side bars of the open steel flooring and the vertical leg of the frame or strip shall be 5 mm per side. The frames shall be complete with 100 x 40 x 3 mm 3 CR 12 steel anchors fixed at 500 mm centres for building the frame into the concrete work.

Pickling and passivation shall be carried out in accordance with the requirements of the Standardized Corrosion and Painting Specification for Civil Engineering Works.

PSHA 5.2.13 Floor plate floors

Substitute HA 5.2.13 with the following:

Materials shall be as shown on the drawings or as scheduled.
Add the following Sub-Clauses:

PSHA 5.2.14 Ground water pressure relief valves

Ground water pressure relief valves shall be J.K.F. type B or similar approved by the Engineer, 110 mm diameter with 12 mm thick neoprene disc and sealing ring. The body of the valve shall be manufactured from S.G. iron and all bolts and fittings shall be grade 304 stainless steel.

A 110 mm diameter hot dipped galvanized mild steel pipe shall be used as a spacer ring when building the valve into concrete work, all as shown on the Drawing.

The valves must be designed for a water pressure of at least 6 metres and to maintain a flow rate of 320 litres per minute at a differential head of 1,0 metres.

PSHA 5.2.15 Weir plates

Weir plates shall be 6 mm thick and shall be manufactured in 3 CR 12 steel as scheduled or as shown on the drawings. Dimensions and slots for M 10 stainless bolts shall be as shown on the Drawings.

The weir plate shall be fixed to the concrete surface using 8 mm thick neoprene seals.

PSHA 5.2.16 Penstocks

All parts shall be designed for the duty required, but the minimum factor of safety against structural failure shall not be less than 3, based on the working stress of the material. In the design, due consideration shall be given to the thickness of materials with regard to corrosion and operating conditions. The force required at a hand wheel or crank to raise a gate or open a penstock shall be in the order of 100 Newton.

The frames and gates of penstocks shall be made of grade 304 stainless steel with a thickness suitable for the duty required but shall not be less than 3,5 mm thick.

All gates shall be well guided with no possibility of jamming. The gates of wall mounted types shall be held uniformly against the side facings of the frames by the action of adjustable wedges and shall provide drop-tight closure under the conditions as shown on the drawings. Penstocks (any seating condition) shall not spill water over the top or sides of the frame other than through the opening provided in the penstock for the water to pass through. All penstocks shall be of the level invert type fitted with renewable seals of a non-biodegradable material on the invert.

Penstocks shall have rising spindles protected by suitable transparent nylon sleeves, the latter providing convenient visual inspection and greasing facilities. Hand wheels shall be of cast iron with diameters to suit operating either directly on the head frame or on a grade 304 stainless steel tubular pedestal to suit the installation depth, as shown on the drawings. Where necessitated by the mass of the gate and/or the pressure against the gate, suitable gearing shall be provided.

All penstocks measured in the Schedules of Quantities shall be supplied and installed by the Contractor under this Contract. In the case of penstocks to be fixed against concrete walls, holding down bolts made of 304 stainless steel must be supplied and installed into the concrete work. The Contractor shall also execute the complete grouting of the penstocks and carry out all necessary adjustments to ensure proper and smooth operation of the penstocks.

PSHA 5.2.17 Handstops

All parts shall be designed for the duty required, but the minimum factor of safety against structural failure shall not be less than 3, based on the working stress of the material. In the design, due consideration shall be given to the thickness of materials with regard to corrosion and operating conditions. The force required at the handle(s) to raise a gate or open handstop shall not be more than 200 Newton. Should this not be feasible then the handstop gate is to be cut in more than one part, each with its own handle(s) in order to achieve this limit of 200 Newton per section.

The frames and gates of handstops shall be made of aluminium with a thickness suitable for the duty required but shall not be less than 3,5 mm thick.

All gates shall be well guided in frames purpose made to suit their position and duty and shall provide drop-tight closure under the conditions as shown on the drawings. Handstops shall not spill water over the top or sides of the frame other than through the opening provided in the handstops for the water to pass through. All handstop frames shall be extended to the top of the concrete member concerned. Water tightness of handstops shall conform to the requirement that leakage at full water level will not exceed one litre in 15 seconds.

All handstops shall be supplied and installed by the Contractor under this Contract. The Contractor shall also execute the complete grouting of the handstops and carry out all necessary precautions to ensure proper and smooth operation of the handstops.

PSHA 8 MEASUREMENT AND PAYMENT

PSHA 8.3.2 Handrails

PSHA 8.3.2(b) Handrail assembly complete

Unit: m

Delete the reference to "details given" and add: as specified in Sub-Clause PS HA 5.2.6 (state material to be used).

The tendered rate shall include handrails comprising hand and knee rails installed complete as specified

PSHA 8.3.6 Corrosion Protection

Substitute HA 8.3.6 with the following:

The corrosion protection of sundry steel items shall not be measured separately. The cost thereof shall be included in the rate for the related item.

PSHA 8.3.7 Ground water pressure relief valve

Unit: No

The unit of measurement shall be the number of ground water relief valves installed.

The tendered rate shall include full compensation for manufacture, supplying, installation and corrosion protection as specified, including 110 mm diameter medium class galvanised mild steel pipe which will be used as a spacer ring when building the valve into concrete work.

PSHA 8.3.8 3CR12 weir plates (state size), (refer to drawings)

Unit: No

The unit of measurement shall be the number of complete weir plates.

The tendered rate shall include full compensation for manufacture of the weir plates, supplying, installation, including self-drilling M10 anchor bolts, cutting slots in plates for bolts, supplying and installing 8 mm thick neoprene sealing material between concrete and plate and adjusting after installation to obtain the correct level as shown on the drawings.

PSHA 8.3.9 Grade 304L stainless steel penstock

Unit: No

The tendered rate shall include full compensation for manufacture, supplying, installation of the penstock to suit the position described and shown on the drawings.

PSHA 8.3.10 Aluminium handstops

Unit: No

The tendered rate shall include full compensation for manufacture, supplying, installation of the handstop to suit the position described and shown on the drawings.

PSL MEDIUM PRESSURE PIPELINES (SANS 1200L)

PSL 3 MATERIAL

PS L 3.1 General

Substitute the first sentence of L 3.1 with the following:

Types and classes of materials shall be as scheduled.

PS L 3.8 Jointing materials

PS L 3.8.4 Loose Flanges

Substitute the first sentence of the last paragraph of L 3.8.4 with the following:

Bolts and nuts shall comply with the requirements of SANS 135.

PS L 3.11 Manholes and surface boxes

PS L 3.11.4 Step Irons

Substitute L 3.11.4 with the following:

Step irons shall consist of polypropylene coated 12 mm high tensile steel such as Calcamite or similar. The installation of the step irons shall be in accordance with the specification of the manufacturer.

Add the following sub-clauses after Sub-clause 3.11:

PSL 3.12 Marking of items

All items delivered on Site shall be clearly marked showing the following:

- (a) Nominal diameter,
- (b) Class of pipe,
- (c) Date of manufacture, and
- (d) Reference number as shown in the Schedule of Quantities.”

PSL 4 PLANT

PSL 4.3 Testing

Add the following to L 4.3:

The Contractor must ensure that the test equipment is in good working order and that it is calibrated.

PSL 5 CONSTRUCTION

Add the following sub-clauses after Sub-clause 5.10:

PSL 5.11 Connection into existing main

Before commencing the excavation of pipe trenches in the vicinity of a proposed connection, the contractor shall excavate for, expose, survey and record the position and level of the connection point on the existing water main and shall determine all specials required.

The Contractor shall be responsible, through the Employer's Agent, for liaison with the Municipality to arrange for turning off the water in order to carry out the connection.

The Contractor may cut into the existing water main (where applicable) only after he has received a written instruction from the Employer's Agent to do so. No connection will be allowed on a Friday or after 12h00 on any day.

Before the connection is made, the new pipes must be laid to within 2m of the connecting point, and must be temporarily blanked off, anchored, sterilized and tested. All specials required must be available on site.

The connection to existing pipes shall include the breaking out of anchor blocks (if necessary), and removal of existing pipe fittings and couplings.

PSL 5.12 Replacement of existing valves and pipes

Before commencing with excavation of pipe trenches in the vicinity of the proposed replacement, the contractor shall excavate for, expose, survey and record the position and level of the existing water main and shall confirm all specials required.

The Contractor shall be responsible, through the Employer's Agent, for liaison with the Municipality to arrange for turning off the water in order to carry out the connection.

The Contractor may cut into the existing water main (where applicable) only after he has received a written instruction from the Employer's Agent to do so. No connection will be allowed on a Friday or after 12h00 on any day. All specials required must be available on site.

The replacement of the existing valve and pipe shall include the breaking out of anchor blocks (if necessary), and removal of existing pipe fittings and couplings.

PSL 5.13 Protection of buried joints

The Contractor shall protect all joints with nuts and bolts against corrosion by wrapping them with "Denso" tape or equal approved, in accordance with the manufacturer's instructions.

PSL 5.14 Pipeline route markers

Route markers for the various water pipelines shall be erected in the positions and shall be manufactured according to the details shown on the Drawings.

PSL 7 TESTING

PS L 7.3 Standard hydraulic pipe test

PS L 7.3.1.2 Test pressure

Substitute L 7.3.1.2 with the following:

The test pressure for field testing shall be 1,5 times the rated maximum working pressure of the pipe e.g. class 4 uPVC pipes shall be tested to 0,6 MPa.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.2.1 Supply, Lay, and bed pipes complete with couplings

Add the following after Sub-clause 8.2.1:

"The Contractor will be allowed to claim the following percentages for interim payment purposes as the various activities are completed:

Stage of Completion	Percentage Applicable
Pipes laid and bedded in trench	80%
Pipes tested successfully, cleaned and disinfected	100%

Note that the percentage applicable is given in the above table as a cumulative figure.

PSL 8.2.11 Anchor/Thrust blocks and pedestals

Add the following sub-clauses after Sub-clause 8.2.11 (a):

"The rates for the thrust blocks shall cover the cost of excavation and backfill, concrete, formwork, and steel reinforcement (including 120 kg high tensile steel per cubic metre of concrete where the amount of steel is not indicated on the drawings) as well as labour, etc., to complete the thrust block as shown on the drawings in addition to the operations and materials specified in this sub-clause."

PS L 8.2.16 Cut into existing mains/structure Unit: No

The cutting into existing mains and structures shall be measured by the number of each type and diameter of pipe cut into. The rate shall include full compensation for all arrangements with the relevant authorities, isolating the existing service, cutting into the existing service to accommodate the connecting fitting, dewatering, excavating, taking steps to prevent the ingress of soil, stones and other material into the existing service, as well as for any liaison with others required and for making good any damages to the existing service and all material and labour to connect the pipe.

PSLB BEDDING (Pipes) (SANS 1200LB)

PSLB 1 SCOPE

Add the following to LB 1.1:

This specification also covers the bedding required for electric cables.

PSLB 3 MATERIALS

PSLB 3.1 Selected granular material

Substitute LB 3.1 with the following:

Selected granular material shall be an aggregate, sand or granular material, all of a non-cohesive nature and free from any organic material, of which the grading analysis shows 100 % passing a 13,2 mm sieve and not more than 5 % passing a 0,075 mm sieve.

In very wet conditions and if so ordered by the Engineer, a non-plastic crushed material with the specification as stated underneath should be used for bedding cradle.

a) **Grading**

Sieve size (mm)	% going through	
19,0	100	
13,2	84	- 100
9,5	70	- 84
4,75	45	- 65
2,36	29	- 47
1,18	19	- 33
0,600	13	- 25
0,300	10	- 18
0,150	6	- 13
0,075	4	- 10

b) **Crusher value**

The aggregate crushing value, calculated at minus 13,2 mm plus 0,5 mm fraction, may not exceed 29.

PSLB 3.2 Selected fill material

Substitute LB 3.2 with the following:

The requirements of PS LB 3.1 shall apply mutatis mutandis.

PSLB 3.3 Bedding

Add the following to LB 3.3:

All pipes shall be classified as rigid pipes and shall be laid on a Class C bedding except water connections, which shall be classified as flexible pipes. Cable bedding is specified separately.

PSLB 3.4.1 Suitable material available from trench excavations

Substitute LB 3.4.1 with the following:

The provisos of PS D 3.3.1 shall apply mutatis mutandis.

PSLB 3.5 Bedding in waterlogged conditions

In waterlogged conditions, the Engineer may instruct the Contractor in writing to use a bedding cradle comprising single sized 6,7 mm crushed stone complying with SANS 1083.

PSLB 5 CONSTRUCTION

PSLB 5.1 General

PSLB 5.1.4 Compacting

Substitute "90 %" in LB 5.1.4 with "93 % (100 % for sand)".

PSLB 5.5 Placing and bedding of cables

Bedding and backfilling for cables shall be executed under this contract. Cables shall be installed by the mechanical contractor.

Machine compaction shall not be carried out directly over cables, unless the cables are covered by at least 300 mm of fill material.

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.1 Principles

PSLB 8.1.5 Disposal of displaced material

Add the following to LB 8.1.5:

The requirements of PS D 5.2.2.3 shall apply mutatis mutandis.

PSLB 8.1.6 Free-haul

Delete the words "of 0,5km" in the first line of this sub-clause.

PSLB 8.1.6 Provision of bedding from trench excavation

Delete the words "from within 0,5km," and "within a freehaul distance of 0,5km" in the first sentence of Sub-clause 8.1.6.

PSLB 8.2.2 Supply only of bedding by importation from borrow pits

Delete the words "within a freehaul distance of 0,5km" in the last sentence of Sub-clause 8.2.2.2.

Add the following to LB 8.2:

PS LB 8.2.6 Supply and place bedding material for cables, from

- | | |
|------------------------|----------------------|
| (a) Trench excavations | Unit: m ³ |
| (b) Other excavations | Unit: m ³ |
| (c) Borrow pits | Unit: m ³ |
| (d) Commercial sources | Unit: m ³ |

Bedding and selected fill for cables shall not be measured separately.

No differentiation shall be made between trenches, bedding and backfilling for cables to be installed by the Contractor or the mechanical contractor.

**PSLB 8.2.7 Extra over items 8.2.1 and 8.2.2 for bedding
stabilized with 5% cement**

Unit: m³

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

PSLC CABLE DUCTS

PSLC 3 MATERIALS

PSLC 3.1 Ducts

Add the following to LC 3.1:

Class 6 uPVC pipes (dia 110 mm or 160 mm) shall be used as ducts for electric cables under roads and paved areas.

PSLC 3.2 Bedding

Substitute LC 3.2 with the following:

The provisions of SANS 1200 LB : Bedding (Pipes) and the relevant project specification shall apply mutatis mutandis and payment shall be made under the appropriate payment clauses of SANS 1200 LB.

PSLC 3.3 Backfill

Substitute LC 3.3 with the following:

The provisions of SANS 1200 DB: Earthworks (Pipe Trenches) and the relevant project specification shall apply mutatis mutandis and payment shall be made under the appropriate payment clauses of SANS 1200 DB.

PSLC 3.4 Cable duct markers

Add the following to LC 3.4:

Cable duct markers shall be provided as specified in LC 5.10.

PSLC 5 CONSTRUCTION

PSLC 5.1 Excavation of trenches

PSLC 5.1.1 Trench Widths and Depths

Add the following to LC 5.1.1:

Trench widths shall be in accordance with the provisions of SANS 1200 DB: Earthworks (Pipe Trenches).

The minimum depth of cover over ducts shall be 600 mm from the final road level or the finished ground level.

PSLC 5.1.3 Excavation of trenches at road crossings

The minimum depth of cover over ducts shall be 300 mm where construction traffic is liable to cross them. Road crossings shall therefore be constructed after the construction of the roadworks has reached the stage where the required cover is available.

PSLC 5.2 Bedding and compaction of bedding

Substitute LC 5.2.1 and LC 5.2.2 with the following:

All ducts shall be laid on a Class C bedding according to the provisions of SANS 1200 LB: Bedding (Pipes). Backfilling shall be according to the provisions of SANS 1200 DB: Earthworks (Pipe Trenches).

PSLC 5.4 Backfilling and compaction

Add the following to LC 5.4:

Road crossings shall be backfilled with sand (stabilised with 5 % cement by volume) from designated borrow pits, the site or commercial sources, whichever is applicable, up to underneath the subbase, and compacted to a minimum of 100 % of MAASHTO density.

PSLC 5.8 Road crossings

Substitute "0,5 m" in the last sentence of LC 5.8 with "1,0 m" and add the following:

Ducts for road crossings shall be effectively sealed by means of end caps.

PSLC 8 MEASUREMENT AND PAYMENT

PSLC 8.2 Scheduled items

PSLC 8.2.8 Cable markers

Unit: No

Substitute LC 8.2.8 with the following:

The rate shall also cover the cost of the end cap and the incisions, concrete marker and draw wire, as specified in LC 5.10.

PSLD SEWERS (SANS 1200 LD)

PSLD 1 CAMERA EQUIPMENT FOR LEAK DETECTION

The following equipment and personnel is required for the proper functioning of inspections for existing sewer systems.

- a) iPek Rovver RC90 zoom camera (or similar approved) for sewer lines between 100 mm and 600 mm diameter as well as the determination of grades in the existing lines.
- b) The software required is WinCam mobile with MPEG encoder, inclination module and Viewer expert and show and media distribution facilities.
- c) Computer with a minimum of 80GB hard drive, DVD writer, Windows XP, Microsoft Access with two external hard drives (250 GB each) as well as a compatible colour printer.
- d) A 2kva "Generator" must be supplied.
- e) A UPS to stabilise the computer equipment
- f) The above items must be installed in a motor vehicle with sufficient space for a person to control the camera equipment and do the necessary recordings in the vehicle.
- g) The person who is responsible for the control of the camera must have the necessary experience in sewer systems and be in possession of a National Diploma in Civil Employer's Agenting as well as being computer literate.
- h) The vehicle must also be equipped with a ladder as well as warning signs and sufficient cones for erection while working in restricted areas.
- i) A mass store facility for data must be provided for at an approved data mass storage bank.

PSLD 1.1 MEASUREMENT AND PAYMENT – CAMERA EQUIPMENT

- a) Fixed Cost.....Lump Sum (specified in bill)

The tender lump sum under item a) shall be in full compensation for providing the equipment, the complete service or installation and the use thereof.

- b) Overheads, charges and profit on item a)% Specified in the bill

- c) Time related...../Month

The tendered rate per month for sub item PS LD3.1 (b) represents full compensation for that part of the contractor's obligations which are mainly a function of construction time. The tendered rate will be paid monthly, pro rate for parts of a month, from the date on which the contractor has received the letter of acceptance, until the end of the period of completion of the works, plus any extension thereof as provided in clause 8.4 of the General Conditions of Contract.

PSLD 2 COMPUTER SOFTWARE FOR THE EMPLOYER’S AGENT

The tenderer must allow for the purchasing of two full packages of the WinCam Viewer software for the sole use by the consultants for the full duration of the project.

PSLD2.1 MEASUREMENT AND PAYMENT – COMPUTOR SOFTWARE

Add the following:

- | | |
|---|----------|
| a) Computer software for the Employer’s Agent | Lump Sum |
|---|----------|

PSLD 3 MATERIALS

PSLD 3.1 Pipes, fittings, and pipe joints

PSLD 3.1.5 uPVC-pipes

Substitute "approved flexible joints" in LD 3.1.5 with "spigot and socket rubber ring joints".

PSLD 3.5 Manholes, chambers, etc.

PSLD 3.5.7 Step Irons

Substitute LD 3.5.7 with the following:

Step irons shall be installed in all manholes deeper than 1,2 m. Step irons shall consist of polypropylene coated 12 mm high tensile steel, such as Calcamite or similar. The installation of the step irons shall be in accordance with the specification of the manufacturer.

PSLD 5 CONSTRUCTION

PSLD 5.6 Manholes, inspection chambers, etc.

PSLD 5.6.1 General

Substitute LD 5.6.1(a) with the following:

Manholes shall be of precast concrete sections with an inside diameter of at least 1 000 mm and shall be constructed as shown on the drawings bound into the document.

1. Final cover levels of manholes in roads and paved areas shall be to the same level as the road or paved area.
2. In the veld 100 mm above natural ground level.

If a manhole is positioned at a low point or in a hollow where stormwater infiltration may occur, the manhole cover level must be raised to a level to avoid the danger of infiltration, or to a level as agreed with the Engineer.

If the manhole needs to be raised with more than 300 mm, precast concrete sections with the same diameter shall be installed and sealed with epoxy.

PSLD 5.6.2 Benching

Add the following to LD 5.6.2.3:

Benching for all manholes except those with sand traps shall be in accordance with the drawings bound into the document.

PSLD 5.6.3 Step irons

Add the following to LD 5.6.3:

Step irons shall only be installed in manholes deeper than 1,2 m.

PSLD 5.6.4 Brick manholes

Add the following to LD 5.6.4.3:

Walls of brick manholes, as well as the extension of precast manholes above the concrete roof slab, shall be plastered internally. External plasterwork shall extend to at least 150 mm below ground level. Manholes shall not be extended above the concrete roof slab by more than 300 mm with brickwork.

If manhole covers are raised with bricks, a half-brick recess, as a foothold, shall be left directly below the concrete slab above the step irons.

PSLD 7 TESTS

PSLD 7.1 General

Add the following to LD 7.1.5:

All tests shall be repeated after the completion of backfilling of pipe trenches.

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.2 Scheduled items

PSLD 8.2.3 Manholes

Add the following to LD 8.2.3:

Manholes shall be measured complete as indicated on the drawings and the rate shall be all inclusive for benching, step irons, type 4A CI cover and frame, and it shall make provision for all additional excavation and backfilling.

The depth of manholes as mentioned in the schedule of quantities, shall be measured from the final cover level to the outlet invert level (flow level).

PSLD 8.2.3.3 New manholes on existing pipes**Unit: No**

The tendered rate shall be all inclusive for the handling of sewage flow, all excavation and backfilling, cutting of pipe and supply and installation of the new manhole, complete as described in LD 8.2.3.1, with finish and benching to accommodate the level difference of approximately 200 mm.

PSLD 8.2.11 Connection to existing sewers**Unit: No**

Add the following to LD 8.2.11:

Separate items will be scheduled for each diameter of connecting pipe.

The tendered rate shall include full compensation for connecting the proposed pipe, any additional channelling and benching associated with the connection, cutting the pipe to suit the connection, supplying and building in the short junction pipe, extra couplings, dealing with existing flow, preventing foreign material from entering the sewer and making the connection.

The excavation for pipelines, pipes, backfilling and manholes shall be measured separately.

Where a direct connection is made to an existing pipe, the rate covers all labour involved in opening the existing pipe, the removal of the existing end cap and disconnection at the pipe.

PSM ROADS (GENERAL) (SANS 1200 M)

PSM3 MATERIAL

PSM 3.2 Responsibility for location

Add the following to M3.2:

The sub base and base layers of all roads shall be constructed with material from designated borrow areas. The Contractor is responsible for the selection of the material in the borrow areas and if the material in the paving layers do not comply with the minimum requirements it shall be removed and replaced with suitable material at the expense of the Contractor.

PSM 5 CONSTRUCTION

PSM 5.1 Selection

The Contractor shall deal selectively with material in order that suitable material is not contaminated with unsuitable material. If suitable material is contaminated, the Contractor shall replace such contaminated material with suitable material, at his own expense.

PSM 6 TOLERANCES

PSM 6.3 Frequency of checks

Add the following to M 6.3:

These checks shall be submitted to the Engineer for his approval.

PSM 7 TESTING

PSM 7.3 Routine inspection and testing

Substitute M 7.3.3 with the following:

Statistical evaluation of test results shall not be applicable to this contract and all tests shall meet the specified minimum requirements for the specific material.

PSM 8 MEASUREMENT AND PAYMENT

Add the following to M 8.1:

The cost of all routine testing done by the Engineer, and of which the results do not comply with specified minimum requirements for the material, shall be borne by the Contractor.

These costs shall be deducted from the Contractor's monthly payment certificates.

PSMJ SEGMENTED PAVING (SANS 1200 MJ)

PSMJ 3 MATERIAL

PSMJ 3.1 UNITS

PSMJ 3.1.2 Class, strength, and type

Add the following to MJ 3.1.2:

All paved parking areas shall be constructed of 60 mm thick Type S-A class 25 precast concrete blocks (interlocking type). Footpaths shall consist of 60 mm thick Type S-C class 25 precast rectangular concrete blocks. A "Terracotta" colour shall be used.

PSMJ 5 CONSTRUCTION

PSMJ 5.1 Preparation

PSMJ 5.1.2.3 Stabilised subbase

Add the following to MJ 5.1.2.3:

The subbase for the parking area shall be stabilised.

PSMJ 5.7 Joint filling

Joint filling shall be done with a 1:3 cement-sand mix.

PSMJ 6 TOLERANCES

PSMJ 6.2 Permissible deviations

Add the following to MJ 6.2:

The degree of accuracy shall be degree I.

PSMJ 8 MEASUREMENT AND PAYMENT

PSMJ 8.2 Scheduled items

PSMJ 8.2.2 Construction of paving complete Unit: m²

Add the following to MJ 8.2.2:

The rate shall also cover the cost of the cement-sand mix as specified in PS MJ 5.7.

PSMJ 8.2.6 Placement of pavers instead of painted lines Unit: m

If required by the Engineer, parking bays and other painted markings on the parking area shall be indicated with tan-coloured paving blocks.

The rate shall cover the cost of all material, labour and equipment for the placing of such blocks.

PSMK KERBING AND CHANNELLING

PSMK1 MATERIALS

PSMK1.1 Concrete

The Contractor shall timeously submit the concrete mix design for cast-in-situ kerbing to the Employer's Agent for approval and no kerbing shall be placed before the mix design has been approved.

PSMK 5 CONSTRUCTION

PSMK 5.1 Excavation and bedding

DELETE THE FIRST PARAGRAPH AND REPLACE WITH:

"Kerbing and channelling shall be constructed on the completed road subbase layers."

PSMK 5.4 Cast-in-situ concrete kerbing and channelling

DELETE THE SECOND SENTENCE OF THE FIRST PARAGRAPH OF SUBCLAUSE 5.4 AND REPLACE WITH:

"The lengths of sections of kerbing between joints shall be uniform throughout and shall not exceed 2 m except where shorter sections are necessary for closures or where otherwise shown on the drawings or required by the Engineer. In the case of cast-in-situ channelling constructed against precast kerbing, the joints in the channelling shall be constructed opposite the centre of every second length of precast kerbing. Joints shall be cut immediately after placing of the concrete."

PSMK 5.8 Machine placed (extruded) kerbing and channelling

PSMK 5.8.3 Subbase Preparation

DELETE THE WORDS "500 mm beyond as relevant" IN THE FIRST PARAGRAPH OF THIS SUBCLAUSE AND REPLACE WITH:

"150 mm beyond the back face of the kerb or edging strip."

PSMK 5.11 Transition sections and inlet and outlet structures

IN THE LAST LINE DELETE "and with the requirements of the project specification."

ADD NEW SUBCLAUSE:

“PSMK 5.13 Sequence of construction

Before construction of the segmented paving is commenced, the Contractor shall ensure that the kerbing has been completed, complies with the requirements of the Specifications covering kerbing and has been approved by the Engineer.

PSMK8 TESTING

PSMK7.1.2 Alternative tests (Sub-Clause 7.2.2)

"PSMK 7.2.2 Tests

The Contractor shall carry out a minimum of three cube crushing tests per 1 000 m of kerbing placed. The cost of such tests shall be deemed included in the rates tendered for kerbing.

One cube crushing test shall consist of a set of six cubes made with concrete taken from the mixer, the kerbing machine or from any part of the work as ordered.

If, after 28 days in an approved laboratory, after three cubes of any set of six cubes have been tested, the average crushing strength is found to be more than 3 MPa below the specified strength, the kerbing represented by the cubes will be rejected.

The Contractor may apply for resubmission of the rejected section on the basis of cores drilled from this section and tested for the estimated actual crushing strength in accordance with SANS method 865 (excluding Appendix A). The cost of drilling and testing the cores is for the Contractor's account, regardless of the outcome of the tests on the cores. The number of cores required will be determined by the Employer's Agent and the criterion for rejection or acceptance of the section represented by the cores shall be as specified above for cubes."

PSMK 8 MEASUREMENT AND PAYMENT

PSMK 8.2 Scheduled items

PSMK 8.2.1 Concrete Kerbing

DELETE SUBCLAUSE 8.2.1(b) AND REPLACE WITH:

"(b) The unit rate for precast kerbing shall cover the cost of supply of all materials for the kerbing, bedding and backing, and for all labour for bedding, jointing, backing, excavating, compacting, testing in terms of Subclause 7.2, together with all backfilling, compacting and removing of excess material.

"PSMK 8.2.14 Removal of Existing Kerbing:

- "(a) Removal of existing kerbing and disposing ofUnit: m
- (b) Removal of existing kerbing and setting aside for re-use on the Site..Unit: m

The tendered rates shall include full compensation for providing all labour and equipment, excavations, lifting the kerbs and, in the case of subitem (a), loading and transporting the kerbs from the Site and, in the case of subitem (b), cleaning the kerbs, and temporarily storing them and relaying them elsewhere on the Site."

PSCE

CLEANING EQUIPMENT

The following cleaning equipment is required to perform the cleaning operations as per the requirements of the Maluti-a-Phofung Local Municipality.

- a) One hydro jets delivering 100 litres per minute at 250 bar pressure.
- b) Venture pump for hydro jets.
- c) Power rodder with steel rods mounted on a trailer.
- d) Mini hydro jet delivering 20 litres per minute at 25 bar pressure.
- e) A water bowser with a minimum capacity of 2500 litres
- f) A 1000 litre tanker with a sewer pump attached.

PSCE 1.1

MEASUREMENT AND PAYMENT – CLEANING EQUIPMENT

- a) Fixed Cost.....Sum

The tender lump sum under item a) shall be in full compensation for providing the equipment, the complete service or installation and the use thereof.

- b) Time related.....Month

The tendered rate per month for sub item PSCE (b) represents full compensation for that part of the contractor's obligations which are mainly a function of construction time. The tendered rate will be paid monthly, pro rate for parts of a months, from the date on which the contractor has received the letter of acceptance in terms of clause 5.3.1 of the General; Conditions of Contract, until the end of the period of completion of the works, plus any extension thereof as provided in clause 5.12 of the General Conditions of Contract.

PSCE 1.2

MEASUREMENT AND PAYMENT – EMERGENCY CLEANING

- a) Using High Pressure Jetting..... hour

The tendered rate per hour shall make provision for the separate times of work as indicated in the schedule. The rate shall include the utilization of high pressure jetting equipment to clear, unblock and remove sand, silt, sludge, roots and other foreign objects from sewer pipe lines and manholes within the MMM area. Remove and deposit this material at the official municipal disposal sites. Response to be within 1 hour of notification and a minimum call out time of 2 hours.

- b) Using Drain Rods and Hand Equipment.....hour

The tendered rate per hour shall make provision for the separate times of work as indicated in the schedule. The rate shall include the utilization of drain rods and hand equipment to clear, unblock and remove sand, silt, sludge, roots and other foreign objects from sewer pipe lines and manholes within the MMM area. Remove and deposit this material at the official municipal disposal sites. Response to be within 1 hour of notification and a minimum call out time of 2 hours.

**PSCE 1.3 MEASUREMENT AND PAYMENT – NETWORK REFURBISHMENT -
PIPEWORK**

a) Using High Pressure Jetting.....m

The tendered rate per m shall make provision for varies pipe diameters as indicated in the schedule. The rate shall include the utilization of high-pressure jetting equipment to clear, unblock and remove sand, silt, sludge, roots and other foreign objects from sewer pipelines and manholes within the MMM area. Remove and deposit this material at the official municipal disposal sites.

b) Using Drain Rods and Hand Equipment.....m

The tendered rate per m shall make provision for varies pipe diameters as indicated in the schedule. The rate shall include the utilization of high-pressure jetting equipment to clear, unblock and remove sand, silt, sludge, roots and other foreign objects from sewer pipelines and manholes within the MMM area. Remove and deposit this material at the official municipal disposal sites.

CAMERA INSPECTIONS

The following equipment and personnel is required for the proper functioning of inspections for existing sewer systems.

- a) Assistance in operating iPek Push rod camera for sewer lines between 100 mm and 300mm.
- b) The vehicle assisting in inspections must also be equipped with a ladder as well as warning signs and sufficient cones for erection while working in restricted areas.

PSCI 1.1 MEASUREMENT AND PAYMENT – CAMERA INSPECTIONS

- a) Camera inspection.....m

The tender rate shall include the setting up of equipment at manholes, assisting the Employer's Agent in pushing the camera into the pipes and cleaning equipment afterwards for the varies diameters of pipe as indicated.

- b) Blocking flow in manholes.....No

The tender rate shall include the blocking of manholes with plug stoppers to assist the Employer's Agent in camera inspections for the varies diameters of pipe as indicated.

- c) Diversion of Flow.....hr

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF
SEWER PUMP STATION INTABAZWE CORRIDOR**

C3.2.2 Particular specifications

CONTENTS

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4	PLQ: Corrosion protection of steel pipes and fittings	C 3-2-2-21
5	MECH: Mechanical Specifications	C 3-2-2-12
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MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

PART 1

PB BUILDING WORK SPECIFICATION

PB 1 SCOPE

This section specifies the general requirements for the construction of buildings.

PB 2 INTERPRETATIONS

PB 2.1 Supporting specifications

- (a) Project Specification;
- (b) SANS 1200 A or SANS 1200 AA as applicable;
- (c) SANS 1200 C;
- (d) SANS 1200 D or SANS 1200 DA as applicable;
- (e) SANS 1200 G or SANS 1200 GA or SANS 1200 GB as applicable.

PB 2.2 General

Building work shall be carried out in accordance with the National Building Regulations and Building Standards Act, 1977, and these specifications.

References to specifications and codes of practice of the South African Bureau of Standards shall be taken to be references to the latest edition of such specifications and codes of practice as amended. Where possible the SANS mark shall appear on all articles, materials or items where it is required to comply with such SANS specification.

PB 2.3 Commercial products

In all instances where the Contractor handles, stores, uses, applies or fixes commercial products, the work shall be strictly carried out according to the instructions of the manufacturer of such products.

PB 2.4 Samples

The Contractor shall furnish without delay, such samples as called for or may be called for by the Engineer. Materials or workmanship not corresponding with approved samples, may be rejected by the Engineer and shall be removed from the works at the cost of the Contractor.

PB 3 MATERIALS

PB 3.1 Cement

Cement for masonry work comply with the requirements of SANS EN 431-1 and cement for concrete work shall be CEM I Portland cement or CEM III blast-furnace cement complying with the requirements of SANS EN 197-1.

Separate storage facilities shall be provided for the various types of cement.

PB 3.2 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 mortar, plaster or floor screed.

PB 3.3 Lime

Lime shall be hydrated bedding mortar lime complying with the requirements of SANS 523.

PB 3.4 Aggregate

Sand for plaster and mortar shall comply with the requirements of SANS 1090, whereas the aggregates for normal and granolithic floor creeds shall comply with the requirements of BS1199 and BS1201 respectively.

PB 3.5 Burnt clay bricks

Burnt clay bricks shall comply with the requirements of SANS 227 and shall also be equal in all respects to the three samples of each type of brick furnished by the Contractor prior to commencement of the works and as approved by the Engineer.

General purpose (special) bricks shall be used in foundation walls and lintels.

The colour and texture of face bricks shall be as specified in the project specifications. Care shall be taken to avoid damage to arise and faces during transport and handling.

Fire bricks shall be of well burnt refractory fire clay, resistant to spalling and cracking and of same size as the ordinary bricks.

PB 3.6 Concrete masonry units

Pre-cast concrete masonry units shall comply with the requirements of SANS 1215 and shall be solid unless specified otherwise in the project specifications.

PB 3.7 Calcium silicate masonry units

Calcium silicate masonry units shall comply with the requirements of SANS 285.

PB 3.8 Wall ties

Wall ties shall comply with the requirements of SANS 28.

PB 3.9 Air bricks

Air bricks shall be well-burnt terra-cotta air bricks in external faces of walls and 250 mm x 150 mm rectangular gypsum air bricks covered with copper mosquito gauze in internal faces.

PB 3.10 Brick reinforcement

Brick reinforcement shall be hard drawn mild steel comprising two 3,15 mm diameter wires spaced 75 mm apart and 2,8 mm diameter cross wires spaced at not exceeding 300 mm apart welded to main wires.

PB 3.11 Quarry tiles

Quarry tiles shall be of approved quality, even in thickness, truly square, free from cracks, twists and blemishes and uniform in colour and unless otherwise specified, shall be of approved red colour.

PB 3.12 Ceramic tiles

Glazed ceramic tiles for walls shall comply with the requirements of SANS 22 and, unless otherwise specified, shall be white, size 150 mm x 150 mm x 6,5 mm thick.

Ceramic tiles for floors shall comply with the requirements of SANS 1449 and, unless otherwise specified, shall be unglazed, size 240 mm x 115 mm x 20 mm thick and of approved colour.

PB 3.13 Concrete paving slabs

Concrete paving slabs shall be precast units of grade 25 MPa/13 mm concrete and shall be of approved manufacture, at least 50 mm thick and sizes 250 mm x 250 mm minimum and 600 mm x 600 mm maximum.

Concrete slabs shall be even in thickness, truly square, free from cracks, twists and blemishes, with a uniform natural cement colour and surface finished smoothly in the mould and shall also be equal in all respects to the samples furnished by the Contractor prior to commencement of the works and as approved by the Engineer.

PB 3.14 Damp-proof membrane

Damp-proof membrane under floors, unless otherwise specified, shall be of polyethylene sheeting complying with the requirements of SANS 952 as Type C-plain surfaces specified therein, 250 microns in dry areas and 375 microns in wet areas.

PB 3.15 Damp-proof course in walls

Horizontal and vertical damp-proof course, unless otherwise specified, shall be of bituminous sheeting complying with the requirements of SANS 248 and as Type FV (Fibre Base) sheeting or as Type GH (Hessian Base) sheeting specified therein, or of polyethylene sheeting complying with the requirements of SANS 952 and as Type A-plain surfaces 450 microns or as Type B-embossed surfaces 375 microns as described therein.

PB 3.16 Treatment of timber

All timber shall be given a preservative treatment suitable for the duty for which the timber is intended in accordance with SANS code of practice 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.

PB 3.17 Structural timber

Structural timber, unless otherwise specified, shall be of South African softwood (pine) complying with the requirements of SANS 563 or SANS 1245 and, unless otherwise specified or shown on the drawings, shall be of Grade 4 and shall be marked as laid down in the specification.

Roof battens and other structural timbers not less than 50 mm or more than 65 mm in width and not less than 38 mm or more than 50 mm thickness, shall be of South African softwood (pine) complying with the requirements of SANS 653.

All structural timber shall bear the full standardisation mark of the South African Bureau of Standards.

The tolerance by which "actual" dimensions may vary from the "nominal" dimensions specified or stated on drawings of South African sawn structural softwood, shall be as laid down in SANS 563, SANS 653 and SANS 1245 where relevant.

Structural laminated timber**(a) Stock glued laminated timber of S.A. pine**

Stock glued laminated timber of S.A. pine shall comply with the requirements of SANS 1089 and shall be marked as laid down in the specification and shall also bear the standardisation mark of the SANS.

(b) Designed glued laminated timber

Structural glued laminated timber shall comply with the requirements of SANS 876 and shall be marked as laid down in the specification and shall also bear the standardisation mark of the SANS.

The timber shall be of -

- (i) softwood or hardwood;
- (ii) the density group and grade;
- (iii) the exposure category;
- (iv) moisture content; and
- (v) of Class A or Class B appearance;

as specified and, in services having timbers treated against infestation by insect pests, shall be treated against pests as laid down in the specification for laminated timber.

Galvanised steel roofing sheets

Galvanised steel roofing sheets shall be of the profile as scheduled or shown on the drawings, of 0,60 mm thick mild steel (before galvanising) and shall be galvanised on both sides to the requirements of SANS 934 for a Class Z250 coating, unless a Class Z600 coating is specified, and shall be passivated.

Metal ridging for steel covered roofs

Galvanised iron ridging for ridges and hips of steel covered roofs shall be of 0,60 mm thick flat mild steel (before galvanising), galvanised as specified for roofing sheets in clause 3.19.

Fibre cement roofing sheets

Fibre cement roofing sheets shall be of the profile scheduled or shown on the drawings and shall comply with the requirements of SANS 685. The sheets shall be not less than 6 mm thick.

PB 3.22 Adjustable fibre cement ridging

Adjustable fibre cement ridging for ridges of fibre cement covered roofs, shall be of same manufacture as the roofing sheets, of not less than 6 mm thick material, with overlapping end joints and shall suit the profile of the roofing sheets. Width of wing shall be not less than 300 mm measured from the centre of roll.

PB 3.23 Fascias and barge boards

Fascias and barge boards shall be, unless otherwise specified, of pressed fibre cement boards of section described in long lengths.

PB 3.24 Fibre cement flashings

Fibre cement flashing for horizontal top edges of roofs butting against vertical wall or other surfaces, shall be of same manufacture as the roofing sheets of not less than 6 mm thick material and with overlapping end joints. The flashings shall suit the profile of the roofing sheets and shall extend not less than 300 mm onto the roof sheeting, shall have plain upstands against the vertical surfaces and shall be flashed over with metal as described.

PB 3.25 Fibre cement gutters

Fibre cement gutters shall be of approved manufacture, of not less than 6 mm thick material and with spigot and socket ends.

Gutter brackets shall be heavy quality galvanised steel or non-ferrous metal brackets as supplied by the manufacturers of the gutters.

PB 3.26 Fibre cement rainwater down pipes

Fibre cement rainwater downpipes shall be of approved manufacture, with spigot and socket ends. The material in circular rainwater downpipes 75 mm diameter shall be not less than 6 mm thick, and in circular pipes over 75 mm diameter and in all sizes of square and rectangular pipes, shall be not less than 8 mm thick.

Holderbats for rainwater downpipes shall be heavy quality galvanised steel or non-ferrous metal holderbats.

PB 3.27 Concrete roofing tiles

Concrete roofing tiles shall comply with the requirements of SANS 542, except that the concrete in the body of the tile need not be coloured where tiles have natural stone granular finish, and shall be of pattern and colour specified.

Unless otherwise specified, the tiles shall have natural stone granular finish.

PB 3.28 Covering to ceilings

(a) Gypsum plasterboard ceilings with plaster finish

Gypsum plasterboard for ceilings shall be 6,4 mm thick gypsum ceiling board, complying with the requirements of SANS 266.

The cover strips shall be galvanised or lacquered wire gauze not less than 60 mm wide. The plaster shall be a retarded semi-hydrate wood-fibre plasterboard bonding gypsum plaster.

(b) Fibre cellulose board ceilings

Fibre cellulose board for ceilings shall comply with the requirements of SANS 803 and, unless otherwise specified, shall be 6 mm thick and of flat (unpressed) type.

PB 3.29 Cove cornices to ceilings

(a) Gypsum plasterboard cornices

Cove gypsum plasterboard cornices to ceilings shall comply with the requirements of SANS 622 and shall be of 82 mm or 120 mm girth as specified.

(b) Timber cornices

Timber cornices to ceilings shall be 32 mm hardwood Scotia's.

PB 3.30 Flat fibre cement sheets

Flat fibre cement sheets other than fibre cellulose boards described in sub clause 3.28(b), shall comply with the requirements of SANS 685.

PB 3.31 Timber for joinery

Softwood for joinery shall comply with the requirements of SANS 1359 and hardwood with the requirements of SANS 1099.

Timber for joinery shall be of clear grade, unless otherwise specified. Counter tops and other tops, where only one face side is visible, shall be of semi-clear grade timber.

PB 3.32 Framed and ledged batten doors

(a) Softwood doors

To be 44 mm thick framed and ledged batten doors complying with the requirements of SANS 545, but the timber shall comply with the requirements of SANS 1359 and shall be of clear grade.

(b) **Hardwood doors**

To be 44 mm thick framed and ledged batten doors complying with the requirements of SANS 545, but the timber shall comply with the requirements of SANS 1099 and shall be of clear grade. The hardwood shall be solid without any laminations.

PB 3.33

Flush doors

Flush doors shall be solid laminated, chip core or hollow-core as specified and shall comply with the requirements of SANS 545. All glue used in the manufacture of the doors shall comply with the requirements of the above specification.

Unless otherwise specified, face veneers shall be rotary cut, and shall be of timber specified or where doors are to be painted shall be of timber suitable for painting.

Edge-strips to conceal the vertical edges of doors shall be not less than 10 mm thick and of the same timber as face veneers; edge strips to meeting edges of doors in two leaves where edges are to be rebated, shall be not less than 20 mm thick.

Faces of doors shall be machine-sanded to a smooth and even surface.

All glueing together of core strips and glueing on of veneers, edge-strips, etc. shall be done under hydraulic pressure.

The top and bottom edges of doors showing end grain, shall be sealed with lacquer, or other suitable material, before leaving the manufacturer's works, and similarly sealed after doors are fitted into frames if the edges of doors are disturbed during fitting.

PB 3.34

Ironmongery

All ironmongery shall be of best quality and shall be approved by the Engineer, before fixing.

Screws for fixing of articles shall be of similar metal than the articles.

Locks shall comply with the requirements of SANS 4 and shall be supplied with two keys each.

Unless otherwise specified, interior and exterior doors shall be fitted with two and four lever heavy-duty mortice locks respectively, which shall be master-keyed.

No key shall pass a second lock. On no account shall the keys be delivered with the doors or locks to the building site. Failure to observe these instructions may entail the provision of new locks and keys.

PB 3.35 Hot-dip galvanising to steelwork

Where prescribed, all steelwork built in as the work proceeds, shall be hot-dip galvanised after fabrication and before leaving the manufacturer's works, in accordance with SANS 763.

Where they occur, site welds shall be zinc sprayed in order that the zinc coating be even and continuous over all surfaces.

PB 3.36 Pressed steel door frames

Pressed steel door frames shall comply with the requirements of SANS 1129 and shall be constructed of 1,6 mm thick mild steel sheeting, pressed or rolled to the required shapes, properly mitred, welded and reinforced.

Frames shall be of widths required to suit the thickness of walls into which they are built and shall be fitted with suitable tie-bars and braces at bottom, and lugs for building in, three to each jamb of frames without fanlights and four to each jamb of frames with fanlights.

Where fanlights are shown over doors, the frames shall be fitted with transoms of pressed or rolled steel sheet as above and rebate for fanlights and for doors if required.

The rebates in frames and transoms for doors and fanlights shall be of width required to suit the thickness of doors and fanlights.

Frames shall each be fitted in the rebate of one jamb with a pair of approved 100 mm steel butt hinges, and transom to opening fanlights hung at bottom shall each be fitted with a pair of approved 75 mm steel butt hinges, all set flush into recesses in frames and either fixed with countersunk screws or securely welded on.

Frames shall be holed as and where required for screws fixing fanlight openers, keeps of spring catches, etc. Where fanlights are shown to be fixed into frames, the frames shall be holed in the rebates, for screws, securing the fanlights, four to each frame.

Frames shall each be fitted in one jamb, with approved chromium plated or stainless steel (unless otherwise specified) adjustable striking plate keep, boxed in at back of frame with sheet metal box welded on, and not less than two rubber buffers.

All welding shall be cleaned off smooth and flush on exposed faces and frames shall be cleaned and primed as described for steel windows before leaving the manufacturer's works.

Steel doors, sidelights and fanlights

Steel doors, sidelights and fanlights shall, in the case of stock types, comply with the requirements of SANS 727, and in the case of purpose made types with the constructional and other requirements of the above specification wherever applicable, and shall in addition be equipped with the following:

- (a) Suitable weather bars where required to render doors, etc., perfectly watertight;
- (b) Suitable lugs, or holes at the same spacing as the standard fixing lugs, for screwing frames to plugs in the concrete, where frames of doors, etc. are to be fixed to concrete columns, beams, etc.,
- (c) A primer as described for steel windows, except where hot-dip galvanising is prescribed.

Doors, sidelights and fanlights, unless otherwise shown shall be of "one piece" construction, but where shown to be in two or more "one piece" units, the units shall be coupled together with standard coupling-mullions and/or transoms.

Bottom openings in doors and sidelights shall be fitted with kicking plates of one thickness of 1,6 mm thick mild steel sheet fixed with metal beads.

Frames of outward opening doors shall be fitted at bottom with sills of door framing section (stepped sills) and of inward opening doors with metal ties, welded to frames, for embedding in thresholds (flush sills).

Stock doors, sidelights and fanlights shall be of the types shown on drawings and purpose made doors, sidelights and fanlights shall be constructed to the forms and sizes shown on drawings.

Unless otherwise specified, the doors shall be of not less than 33 mm universal sections and the sidelights and fanlights of standard 25 mm sections.

Fanlights shall be hung and fitted as described for steel windows in clause 3.39.

Balance type steel door

The balance type steel door shall be of the "back track" type tip-up door, constructed of not less than 0,8 mm thick mild steel sheeting, pressed to form troughed or fluted pattern horizontal panels, each approximately 200 mm wide, all strongly reinforced at back with 1,2 mm thick top hat section mild steel braces and/or stiffeners and provided all round exposed edges with 1,2 mm thick mild steel channels, all properly welded together and with all welding cleaned off smooth and flush.

The door is to be hung on two galvanised flexible steel cables of not less than 5 mm diameter, connected at lower ends to 125 mm diameter steel encased counterweights of such length and mass as will balance the door in the full open position and connected at upper ends to door unit by passing cables over 140 mm diameter bushed cast aluminium pulleys, securely fixed to 2,50 mm thick mild steel top plates.

The movement of door is to be controlled by means of sintered metal rollers, (nylon rollers are not acceptable) securely fixed at top and centre of outer edges to door unit to operate in horizontal and vertical runner guides respectively. The guides are to be formed of 37 mm x 32 mm x 25 mm mild steel channels and with vertical channels fitted at upper ends with horizontal channels, welded on to form back track for top rollers. Each vertical channel is to be four times bolted to jamb of door opening and each horizontal channel is to be secured in position to internal wall with mild steel angle bracket, twice bolted to wall to form rigid construction.

The counterweights to door to be encased with 2,50 mm thick mild steel cover plates, each the full height of door and securely fixed to wall and channel guide.

Door to be fitted near bottom with cast aluminium lifting handle for operating the door and with chromium plated locking handle, complete with control rods and with striking plate bolted to lintel, over door opening. The locking handle is to be operated from outside and is to be provided with two keys.

Before leaving the manufacturer's works, all metal is to be given a protective priming coat of paint in accordance with the requirements of SANS 909.

PB 3.39

Steel windows

Stock residential and industrial type steel windows shall comply with the requirements of SANS 727 and all other types both stock and purpose made shall comply with the constructional and other requirements of the above specification wherever applicable, and shall in addition be equipped with the following:

- (a) Suitable weather bars where required to render the windows perfectly watertight;
- (b) Suitable lugs, or holes at the same spacing as the standard fixing lugs, for screwing frames to plugs in the concrete where frames of windows are to be fixed to concrete columns, beams, etc.;
- (c) Windows and components, except where specified to be hot-dip galvanised, shall before leaving the manufacturer's works, be cleaned by acid pickling rinsing and drying, as laid down in SANS code of practice 064, or by other approved means, to remove all scale, rust, grease, oil and foreign matter and then primed with red oxide zinc chromate primer complying with the requirements of SANS 909, applied by dipping or by means of spray gun.

Ventilators hung at side to open out in windows above ground floors and not accessible for cleaning from an adjoining opening ventilator in the same window or from verandas, balconies and the like, shall be hung on projecting hinges.

Windows, unless otherwise specified, shall be of "one piece" construction, but where shown to be in two or more "one piece" units, shall be coupled together with standard coupling mullions and/or transoms.

Windows shall be fitted with solid brass handles, stays, catches and other fittings, those to windows constructed of universal sections having polished finish and to all other windows rumpled finish. The fittings shall be fixed in such a way as to be removable after windows are glazed.

PB 3.40 Resilient floor finishings

Semi-flexible vinyl (vinyl-fibre) floor tiles shall comply with the requirements of SANS 581; flexible vinyl (PVC) floor tiles and sheeting shall comply with the requirements of SANS 786 and thermoplastic (asphaltic) floor tiles shall comply with the requirements of SANS 586. Unless otherwise described, the flooring shall be of marbled pattern and of approved light colour and tiles shall be 230 mm x 230 mm or 250 mm x 250 mm in size.

Vinyl cove skirtings shall be of approved manufacture and colour and unless otherwise stated, 70 mm in height.

PB 3.41 Glass for glazing

Glass for glazing shall comply with the requirements of CKS 55.

Glass not exceeding 0,75 square metre surface area of glass pane, shall be flat drawn clear sheet glass of "QQ" quality (ordinary glazing quality) and of 3 mm thickness.

Glass exceeding 0,75 square metre and up to 1,5 square metres surface area of glass pane, shall be clear float glass of "GG" quality (glazing quality) and of 4 mm thickness.

Laminated safety glass for glazing shall be of "SQ" quality (selected glazing quality) and of 6 mm thickness unless otherwise specified. If high impact strength glass is used, whether cut to size or not, the stencil mark is to appear in a prominent place on the glass.

Toughened safety glass for glazing up to 3 square metres shall be, unless otherwise specified, of 4 mm thickness and must be ordered to the correct size as toughened glass cannot be cut, and each piece of glass to be marked in a clear and permanent fashion. (For bigger sizes, manufacturer's instructions are to be followed).

Any pane of glass installed in any door shall, where not made of safety glass, be not more than 1 m² in area and shall have a nominal thickness of not less than 6 mm.

Obscure glass for glazing, unless otherwise specified, shall be Arctic or other similar approved figured rolled glass, of a nominal thickness of not less than 3 mm for glass panes up to a surface area of 0,75 square metre and not less than 5 mm over 0,75 square metre.

Putty for glazing shall comply with the requirements of SANS 680, of Type I for glazing in wood and of Type II for glazing in steel windows, doors, etc. Putty used for glazing in unpainted hardwoods, shall be tinted to match the colour of the wood.

PB 3.42

Paints

All materials for paint work for which South African Bureau of Standards specifications have been published, shall comply with the requirements of such specifications and shall bear the standardisation mark of the South African Bureau of Standards on the container or packing. Materials for paint work for which no SANS specifications have been published shall be of brand and manufacture approved by the Engineer.

All materials for paint work must be brought on to the site in unopened containers and no adulteration will be allowed.

Undercoats for paint work shall be as supplied by the manufacturer of the paint being used for the finishing coat.

Paints shall be suitable for application on the surfaces on which they are to be applied, and those used externally shall be of exterior quality or suitable for exterior use.

If necessary, paints shall be strained free from skins and similar impurities immediately before application.

The various primers, undercoats, paints and distempers shall comply with the requirements of the specifications quoted hereunder and shall be of the type of grade stated, viz:

(a) Primers

(i) For wood:

SANS 678. Type I shall be used on exterior woodwork and Type III on interior woodwork.

(ii) For metal:

Dip or spray application (red oxide zinc chromate). For steel windows, doors, door jambs, and other articles normally dip or spray primed in the manufacturer's works: SANS 909.

Brush application (zinc chromate). For all metal surfaces primed on site and then painted: SANS 679, Type I.

(iii) For structural steel (red lead)

SANS 312, Type II, Grade .

(iv) For galvanised iron

SANS 912.

(v) For galvanised metal surfaces and surfaces of non-ferrous metals

Wash primer (metal etch primer) : SANS 723.

(b) Undercoats

For all surfaces under HIGH GLOSS, OIL GLOSS, FLAT and EGGSHELL finishing paints : SANS 681, Type II.

(c) Paints

- | | | | |
|--------|---------------------------|---|--|
| (i) | High gloss | : | SANS 630 |
| (ii) | Oil gloss | : | SANS 631 |
| (iii) | Flat and eggshell | : | SANS 515 |
| (iv) | Emulsion paint (interior) | : | SANS 633, Grade I |
| (v) | Emulsion paint (exterior) | : | SANS 634, Synthetic Polymer Base Type, but pure acrylic resin base for fibre cement surfaces |
| (vi) | Aluminium paint | : | SANS 682, Grade II |
| (vii) | Roof paint | : | SANS 683, Type B |
| (viii) | Structural steel paint | : | SANS 684, Type B |
| (ix) | Epoxy tar | : | SANS 801 (types as specified) |

(d) Distemper

SANS 322

(e) Varnish for interior use

SANS 887, Type I with eggshell finish.

PB 4 PLANT

PB 4.1 General

The Contractor shall have at his disposal the normal plant necessary for the proper and neat completion and rounding off of all facets of the building work.

PB 5 CONSTRUCTION

PB 5.1 Bricklayer

PB 5.1.1 Cement Mortar

Cement mortar shall, unless otherwise specified, be composed of four parts by volume of sand and one part by volume of cement for normal brickwork, and three parts by volume of sand and one part by volume of cement 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.

Care shall be taken in mixing cement mortar to remove from the mixing machine or platform any old mortar that has already set, as such mortar must not be incorporated in any new batch.

Cement mortar shall be produced in such quantities as can be used before commencing to set, as no cement mortar that has once commenced to set shall be used in any way.

PB 5.1.2 Brickwork

Brickwork, wherever practicable and not otherwise specified, shall be built in English bond. No false headers shall be used, and none but whole bricks employed, except where legitimately required to form bond.

The brickwork, unless otherwise specified, shall be built in 4:1 cement mortar. Brick arches and brick lintels shall be built in 3:1 cement mortar.

The bricks shall be laid on a solid bed of mortar and all joints thoroughly grouted up solid throughout the whole width of each course.

The brickwork shall be carried up in a uniform manner, no portion being raised more than 1,2 m above an adjacent portion.

The bricks shall be well saturated with water, in the stack or dump, approximately two hours before being used. The tops of walls left off, shall be well wetted before work is recommenced.

All rough and fair cutting and cutting of splays, skew backs, chamfers, etc., shall be properly performed.

All necessary openings for pipes, etc., shall be formed or left and made good after pipes, etc., are fixed in position.

Walls generally shall be taken up two courses above panelled ceilings in the same mortar as the wall below and cut between ties, etc.

Where hollow concrete masonry units are used brick-force shall be built into the walls every third course. Mortar for hollow concrete masonry units shall consist of one part cement, two parts lime and nine parts sand by volume. All cavities below floor level shall be filled with Grade 15 MPa/19 mm concrete.

PB 5.1.3 Mortar Joints

Mortar joints to brickwork generally shall be 10 mm in thickness.

The joints in brickwork receiving plaster, tiling or similar finishing's, shall be raked out whilst the mortar is soft to form key for the plaster or mortar backing. The depth of the raking out will depend on the condition of the bricks; the rougher the bricks on face the shallower the raking out and the smoother the bricks the deeper the raking out.

The joints in brickwork shall be flushed off where walls are to be bagged, in readiness for the bagging.

PB 5.1.4 Brickwork In Thicknesses

Walls built in two or three thicknesses shall be tied together with and including metal ties of sufficient length to allow not less than 75 mm of each end to be built into brickwork and shall be spaced not more than 1 m apart to every third course and staggered.

PB 5.1.5 Brickwork In Linings

Linings to concrete shall be tied with and including 4 mm diameter galvanised crimped wire ties of necessary length to allow 75 mm to be bedded into concrete and 75 mm of the other end to be built into brickwork and evenly spaced 1 m apart to every third course and staggered.

PB 5.1.6 Half Brick Thick Walls

Half brick thick walls shall be built in 4:1 cement mortar and reinforced with 75 mm wide brick reinforcement, one row to every eighth course in height, and built 100 mm into main connecting walls. The reinforcement shall be lapped 150 mm at end joints, where these are necessary, and 75 mm at angles.

Cavity Walls

Cavity walls, unless otherwise specified, shall be built with two half brick thicknesses of brickwork in stretcher bond with 50 mm cavity between, and the two thicknesses tied together with 200 mm long metal wall ties of the butterfly type, spaced at not more than 1 m centres alternately to every third course of brickwork.

Unless otherwise specified, the brickwork shall be built in 4:1 cement mortar.

The cavities shall be carried up from one course of brickwork below damp course level up to two courses below wall plate level, unless otherwise shown or specified. The brickwork above cavities shall be built solid, and where 270 mm thick shall be cut and well bonded where possible. Cavities in foundation walls of cavity walls shall be filled with Grade 15 MPa/19 mm up to 150 mm below the damp-proof course level.

The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar.

The tops of walls shall be covered with planks or sacking during wet weather to prevent rain from entering the cavities.

The cavities shall not be ventilated.

At door, windows and other openings, the cavities shall be stopped 110 mm back from jambs of openings with the inner thickness of brickwork returned and stopped against the outer thickness and not bonded to same. A 110 mm wide strip of damp-proof sheeting as described for damp-proof course in clause 3.15 shall be built in between the two thicknesses in the joint formed by the return and the outer thickness. The damp-proof strip shall be lapped at least 50 mm on to the sheeting between the two thicknesses of sills and between the two thicknesses of lintels.

Sills to windows shall be divided into external and internal thicknesses with strips of damp-proof sheeting as above, built in line with the damp-proof sheeting in jambs and extending 100 mm beyond the jambs of openings.

The lintels shall be provided with damp-proof sheeting as described under lintels.

Unless otherwise specified, cavities shall be stopped one course below and one course above and 110 mm from sides of openings for air bricks and the like.

Reinforced Brick Lintels

Reinforced brick lintels shall be built with sound machine made bricks, in 3:1 cement mortar, with all vertical and horizontal joints filled solid with mortar throughout the required number of courses and to a distance of at least 330 mm on either side of the clear opening.

The number of courses in lintels over the various size openings shall be as specified in table hereunder, and reinforcing steel wires or rods shall be built into the first horizontal joint over the bottom course as laid down therein, viz.:

LINTEL SPAN	NUMBER OF COURSES	REINFORCEMENT
Not exceeding 1 m	4	One row of 75 mm wide brick reinforcement for each half brick width soffit.
Over 1 m to 1,5 m	6	One row of 75 mm wide brick reinforcement for each half brick width soffit.
Over 1,5 m to 2,1 m	7	Three 6,3 mm diameter mild steel rods for each half brick width of soffit.

The reinforcing wires and rods shall be of length at least equal to the width of the clear opening plus 330 mm at each end. The reinforcement shall be evenly spaced in the brick joints, with the outer wires or rods having at least 20 mm cover from face of brickwork.

Brick lintels in 270 mm thick cavity walls shall be built in two half brick thicknesses in stretcher bond, with inner face of outer thickness for a depth of three courses above soffit, covered with sheeting as for damp-proof course, the full length of lintels, and space between the two thicknesses for the depth of the sheeting filled in solid with Grade 15 MPa/19 mm concrete. Where cavities continue above lintels, the sheeting shall be taken up and turned on to top of first course of brickwork to inner thickness of wall, above the concrete filling in lintels.

The lintels, except where built over pressed steel door frames and the like, shall be supported on temporary formwork left in position for at least fourteen (14) days.

PB 5.1.9 **Pre-cast concrete Lintels**

Pre-cast concrete lintels shall be built in overall openings. The lintels shall be the full width of the wall and shall have its ends neatly cut with a cutting disc. Building-in and propping shall be specified by the supplier and brick force-extending at least 350mm to the outside of the opening – shall be built into each of the first five mortar beds above the opening.

PB 5.1.10 **Beam Filling**

Beam filling, unless otherwise specified, shall be half brick thick, built in similar mortar as used in the walls below, cut in between roof timbers and carried hard up to underside of roof covering, and flushed up in mortar.

PB 5.1.11 Bagged Finish to Brickwork

Bagged finish to brickwork, if done whilst the mortar in joints is still soft, shall be formed by rubbing over the wall surfaces with wet rough sacking, until all joints and crevices are filled up and an even surface is obtained. Mortar, as used for building the brickwork, shall be added as may be necessary.

If bagging to walls is done after the mortar in joints has set the wall surfaces shall be rubbed over with wet rough sacking as above, but cement grout shall be added as necessary to fill up the joints and crevices and to obtain an even surface.

PB 5.1.12 Building In brick Work

Ends of timbers, hold-fasts, cramps, gratings, air bricks, dowels, etc., shall be built-in in cement mortar.

Door and window frames and the like shall be set up in positions for building in and securely strutted to prevent distortion whilst the brickwork, lintels, etc., are being built.

Pressed steel door frames shall be grouted in solid at back with cement mortar as the work proceeds.

Wood slips, fixing bricks, hoop iron, roof ties, etc., shall be built in as the work proceeds.

Ventilators shall be built into openings formed in the walls, in 3:1 cement mortar, and grouted in solid with similar mortar and wall finishes made good if disturbed.

Wood frames to doors, windows, etc., shall be set up in position for building in as described and built in as the work proceeds with cramps to jambs of 1,6 mm thick galvanised hoop iron, 32 mm wide, with ends turned 50 mm up against stiles of frames and each twice screwed to frame, and built 450 mm into wall with end turned up into brickwork joint. Cramps shall be built in approximately 0,3 m up from bottom and approximately 0,3 m down from head of frames and intermediately at not exceeding 0,85 m apart. No frame shall have less than two cramps to each jamb irrespective of height.

Cramps to frames in 270 mm thick cavity walls shall be cranked as necessary and built into inner and outer thicknesses of walls alternately.

The stiles of wood door frames, and similar frames not having sills framed in, shall be doweled to concrete, brick, stone and similar thresholds with 10 mm diameter mild steel dowels 75 mm long, one to each stile.

PB 5.1.13 Securing of Roofs

Roof trusses shall be fixed at each support to walls with ties of 1,2 mm thick galvanised hoop iron, 30 mm wide, built 750 mm deep into brickwork or embedded 300 mm deep into concrete or wrapped around bottom layer of

reinforcing in a reinforced concrete beam and, unless otherwise specified, wrapped over truss and fixed with four galvanised nails, 60 mm long and taken up to and lapped round the nearest purlin and well spiked thereto.

PB 5.1.14 Bedding and Pointing

All door, window and similar frames shall be bedded and pointed in 3:1 cement mortar. All wall plates shall be set true and level and bedded in 4:1 cement mortar.

Steel door and window frames shall be carefully pointed all round and made perfectly watertight.

Where steel door and window frames are specified to be pointed with mastic compound, they shall be pointed all round externally with an approved waterproof compound, of such composition that it will not stain surrounding surfaces, and that it will adhere tenaciously, remain plastic without sagging or running, be capable of accommodating any normal movement of the joint sealed, and will receive paint without "bleeding". The pointing material shall be forced into the joints, which shall have been previously prepared to receive same, by means of a pressure gun, or by other suitable method, all in accordance with the manufacturer's instructions.

PB 5.1.15 Faced Brickwork

Faced brickwork shall be built fair and the joints shall be square recessed to a depth of approximately 6 mm, formed with a square jointing tool well pressed into the joints as the work proceeds.

The Contractor shall construct a test section of 10 m² which shall be approved by the Engineer, before continuing with faced brickwork.

Face bricks shall be sorted by the brick manufacturer at his yard or by the Contractor on the site, to ensure that proper mixing of the bricks within the colour range of each type of facing brick being used is obtained; sudden changes in the general colour of face work in any one type of facing brick will not be acceptable.

Sand in mortar for all faced brickwork shall all be from one source.

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

PB 5.1.16 Fibre Cement Sills

Sills shall be in single lengths cut between reveals, fitted with fixing lugs and solidly bedded in 3:1 cement mortar with a slight projection beyond the finished wall face below.

Internal sills shall be level. External sills shall be set sloping on cut brickwork or on fine concrete filling under.

PB 5.1.17 Laying of Quarry Tiles

Joints to paving shall be continuous in both directions.

Tiles shall be solidly bedded and jointed in 3:1 cement mortar with joints, unless otherwise specified, 6 mm wide and slightly pointed with a round jointing tool. Tiles shall be well soaked in water before fixing and thoroughly cleaned off after fixing.

Tiles in sills, copings, etc., shall be set with slight projection over finished wall face, and where full tiles do not fit into the length, two cut tiles shall be used, symmetrically placed as directed.

PB 5.1.18 Installation of Electrical Service

The Contractor shall embed in the concrete and/or brickwork, as the work proceeds, all conduits, boxes, etc., which will be fixed in position by the electricians, and must cut all necessary chases and holes in walls for conduits and form recesses in walls for distribution boards, all in the positions directed, notwithstanding whether the installation of the electrical service is carried out by the Contractor or under a separate contract. Alternatively, distribution boards may be built into walls as the work proceeds, providing prior approval is obtained from the Engineer.

The Contractor shall afford every facility and shall render reasonable assistance to the electricians in carrying out their work, and shall make good where necessary, in all trades, after installation has been completed.

PB 5.1.19 Installation of Mechanical Equipment

Where the installation of mechanical equipment is carried out under a separate contract the Contractor shall arrange for the building in of special fittings, leaving holes and openings or forming chases in floors, walls, etc., for pipes, cables etc., and for the building in of pipes, sleeves, pipe clips, bolts, etc., as required or directed.

All cutting of holes through finished floors, walls, etc., after the concrete or mortar has set, must be avoided as far as possible, and the Contractor must give ample notice to the Engineer who will ascertain the exact positions where pipe sleeves, pipes, pipe clips, etc., are to be built in.

PB 5.1.20 Protect and Clean Down Brickwork, Etc.

Angles of face brickwork, reveals, steps, etc., liable to damage shall be covered up and protected during the progress of the remaining work, and any damage done shall be made good at the Contractor's expense and to the satisfaction of the Engineer.

Face brickwork and brick and tile sills, copings, etc., shall be cleaned down as the work proceeds, and surfaces liable to be soiled by mortar or plaster splashes during the progress of the remaining work shall be covered with paper, pasted on, or by other approved means. At completion of the works the coverings shall be removed and the surfaces again cleaned down to the satisfaction of the Engineer.

Any detergent or other materials used in the cleaning down of face brickwork, etc., shall be of such nature that will not harm adjoining paint and other finishing's in any way.

All tile and other pavings shall be thoroughly cleaned off after laying to remove all traces of mortar and other substances, covered up and protected from damage during the progress of the works, and again cleaned off at completion.

PB 5.2 Tiler

PB 5.2.1 Laying Of Glazed Ceramic Wall Tiles

The tiles shall be fixed direct to walls in 3:1 cement mortar with horizontal and vertical joints continuous, and shall have all joints rubbed in solid with neat white cement grout. Tiles shall be well soaked in water before fixing and thoroughly cleaned off after fixing.

Unless otherwise specified, the wall tiling shall project approximately 4 mm beyond face of adjoining plaster with all exposed edges finished with glazed rounded edge tiles.

Tiling shall be returned into reveals of openings and on to window sills, and shall be butted at internal angles and provided with glazed rounded edged tiles to external angles, unless otherwise specified.

All necessary cutting to tiles shall be properly performed.

Walls shall be well wetted before tiling is commenced.

PB 5.2.2 Laying Of Ceramic Floor Tiles

Ceramic tiles shall be bedded to a true and even surface on 3:1 cement mortar and with joints not exceeding 2 mm wide.

After the tiles have been allowed to set for a period of not less than twenty four hours the joints shall be grouted in to with approved epoxy compound, or acid proof cement mortar.

PB 5.3 Plasterer and paver

PB 5.3.1 Cement Plaster

Cement plaster for one coat work on walls shall be composed of four parts of sand and one part of cement for internal work, and five parts of sand and one part of cement for external work, all by volume, and mixed as described for cement mortar in clause 5.1.1.

Cement plaster on concrete surfaces shall be composed of three parts by volume of sand and one part by volume of cement.

PB 5.3.2 Forming Key to Concrete for Plaster Finish

All surfaces of concrete receiving plaster, or similar finishing's, shall be well wetted and wire brushed immediately after the formwork is removed and slushed over with 2:1 cement grout to form key for the finish, to the approval of the Engineer. The slushing to be allowed to set hard before the finish is applied.

Other methods may be used if approved by the Engineer.

Particular care shall be taken in forming the key for plaster where steel shuttering is used, and if considered necessary the surface of the concrete shall be hacked.

PB 5.3.3 Thickness Of Plaster

Plaster on walls shall be not less than 12 mm or more than 20 mm in thickness, and plaster on concrete ceilings and beams shall be not less than 9 mm or more than 16 mm in thickness, unless otherwise specified.

PB 5.3.4 Application Of Plaster

Walls shall be well wetted before plastering is commenced.

The surfaces of internal plaster shall be steel trowelled to a smooth, even and true finish. External plaster shall be finished to a true and even surface with a wood float. All plaster surfaces shall be free from blemish.

Plaster shall be returned into reveals and soffits of openings, and all angles shall be true and straight with salient angles slightly rounded.

The rendering coat of plaster in two coat work shall be approved by the Engineer before the setting coat is applied, and notice shall be given to the Engineer when it is ready for inspection.

All cracks, blisters and other defects shall be cut out and made good and the whole left perfect at completion.

NB - See clause 5.3.2 for forming key for plaster on concrete.

Normal Screeds to Floors

Concrete sub-floors finished with wood mosaic, vinyl sheeting and tiles, and similar finishing's, shall be screeded with 3:1 cement mortar, of thickness required, but in no case less than 12 mm, and steel trowelled to a true and smooth surface suitable to receive finishing's.

The screeding shall be laid before the concrete sub-floors have matured otherwise the exposed surfaces of concrete shall be thoroughly cleaned with a wire brush, and a coat of neat cement grout applied immediately before the screeding is laid.

The screeding shall be laid in good time to allow of it being perfectly dry when the finishing's are laid.

No traffic shall pass over nor shall any building operations take place on the screeding without proper covering first being provided.

Granolithic Screeds

Granolithic screeds shall be composed of two parts by volume of cement and three parts by volume of aggregate with sufficient water added to obtain a consistency as dry as may be practicable. The screed shall be rendered with a wood float and struck off with a steel trowel after set has commenced.

Granolithic screeds to floors, treads of steps, thresholds, and similar horizontal surfaces unless otherwise specified, shall be not less than 25 mm thick. Granolithic screeds to stair risers, sides of kerbs, and other vertical surfaces, shall, unless otherwise specified, be not less than 20 mm thick. Exposed salient angles of granolithic screeds shall be neatly rounded to approximately 20 mm radius, unless otherwise specified.

The granolithic screeds shall be laid before the concrete sub-floor has matured otherwise the exposed surface of concrete shall be thoroughly cleaned with a wire brush, and a coat of neat cement grout applied immediately before the granolithic screed is laid.

The granolithic screeds shall be laid in panels not exceeding 9 m² in area, and joined to lines of panels and lined into smaller squares as directed with sunk V-joints. The joints between the panels shall coincide with joints in the concrete sub-floor where possible.

Where granolithic screed is to be tinted it shall be laid in two layers, a lower layer laid to within 6 mm of the finished level, and an upper layer into which the requisite quantity of approved colouring pigment shall have been mixed. **No dusting on of colouring material will be allowed.**

All granolithic work shall be done by experienced workmen, and shall be protected from injury caused by rain or other extreme weather for twelve hours after being laid, and against too rapid drying whilst hardening, by being covered with wet sacks, or other suitable material, and shall be protected from injury and discolouration during the progress of the remaining work.

Edges of granolithic floors butting against different floor finishing's, and edges of margins, etc. shall be true and sharp, and shall be protected by fixing temporary wood strips, which shall remain, in position until the commencement of the laying of the adjoining flooring material.

PB 5.3.7 Readings To Steps, Etc.

The treads of granolithic finished steps and upper surfaces of granolithic finished external thresholds shall be rendered non-slip by reeding same near front edges for a width of 100 mm stopped 100 mm from ends.

PB 5.3.8 Power Floated Finish

Power floated finish to floors etc., unless otherwise specified, shall be floated mechanically to smooth and even surfaces before the concrete has set. Small surfaces and inaccessible places to be floated by hand in a similar way. Under no circumstances is cement mortar to be added while floating the concrete.

PB 5.3.9 Laying Of Concrete Paving Slabs And Paving Bricks

Concrete paving slabs and paving bricks shall be bedded and jointed on a layer of 30 mm clean dry river sand. Joints shall be 6 mm wide, continuous in both directions, filled solidly with 3:1 cement mortar and slightly pointed with a round jointing tool. Lengths in excess of 10 metres shall be provided with expansion joints.

PB 5.4 Waterproofing

PB 5.4.1 Damp-Proof Course in Walls

The damp-proof course shall be the full thickness of walls above foundations and shall be laid without longitudinal joints. At end joints, angles and intermediate junctions the sheeting shall be lapped 150 mm.

Where so specified all laps in the damp-proof course shall be sealed over the whole area of laps, to an approved method. Care shall be taken not to tear or otherwise damage the sheeting.

PB 6.4.1 Damp-Proof Membrane

The damp-proof membrane under floors, etc., shall be laid in the widest practical widths to minimise joints and shall be turned up, dressed to load bearing walls and if applicable lapped with the damp-proof course in the walls. All joints shall be sealed with pressure sensitive tape applied over the leading edge of the joint.

PB 7.4.1 Expansion Joints

Expansion joints shall be at least 10 mm wide and filled in with approved bitumen impregnated soft board or closed cell expanded polyethylene strip. Expansion joints shall be sealed with a two component poly-sulphide joint sealer, 12 mm deep, according to instructions of the manufacturers.

PB 8.4.1 Carpenter and joiner

PB 9.4.1 Protection Of Timber on Site

Timber stored on site shall be properly stacked when received, and adequately protected against extremes of weather and exposure to the sun, until required for use.

PB 10.4.1 Wrought Faces

Exposed woodwork, unless otherwise specified, shall be wrought to a smooth surface, and properly sand-prepared to remove all machine or other tool marks.

For each wrought face on structural timber, an allowance will be made off the "nominal" dimensions specified or stated on the drawings, as follows:

(a) 2,5 mm for "nominal" dimensions up to and including 76 mm;

(b) 3,5 mm for "nominal" dimensions over 76 mm.

For each wrought face on joinery timber, an allowance will be made off the "nominal" dimensions specified or stated on the drawings, as follows:

(a) 3 mm for "nominal" dimensions up to and including 76 mm;

(b) 5 mm for "nominal" dimensions over 76 mm.

The above will be the nett allowances permitted off the "nominal" dimensions specified or stated on the drawings and will not be additional to the tolerances specified for sawn timbers.

All exposed angles of wrought woodwork, unless otherwise specified, shall be arris rounded. The term "arris rounded" denotes that the angles shall be rounded off to approximately 3 mm radius.

Angles of wrought woodwork specified to be angle rounded shall be rounded off to 6 mm radius, unless otherwise shown on the drawings, and shall include, in framed joinery, for housed and mitred joints.

PB 11.4.1 Lengths Of Timbers and Methods of Jointing

Plates, purlins, battens, laths, slats, etc., shall be in single lengths, but where this is not possible the end joints will be formed as described below. The jointing of plates, battens, etc. at junctions and angles shall also be formed as stated hereunder, viz:

- (a) Wall plates shall be halved at joints and well spiked together, and also at junctions and angles;
- (b) Purlins shall be splayed or spliced at joints and, unless otherwise specified, using timber side plates of the same dimensions as purlins, not less than 600 mm long and four times bolted with M10 mild steel bolts, with two washers each. Adjacent purlins shall not be splayed or spliced in the same bay or on the same rafter;
- (c) Sawn battens, laths, slats, etc., shall be butt jointed at heading joints and angles, and wrought battens, laths, slats, etc., shall be splayed at heading joints and mitred at angles, all over points of support and where adjacent, shall not be jointed on the same rafter.

PB 5.5.4 Joints In Roof Trusses

- (a) The number of connecting devices to be used at each intersection between two members at any heel joint or any splice in a truss shall be determined from the following table:

SPAN m	3 (90 x mm) NAILS PLUS M10 BOLTS AS SPECIFIED BELOW	M16 BOLTS ONLY	50 mm TOOTHED RING CONNECTIONS
3	2	2	1
4	3	2	1
5	3	2	2
6	4	3	2
7	5	3	2
8	5	3	2
9	6	4	3
10	6	4	3

- (b) In the case of any joint other than a heel joint or splice, one M10 bolt plus three 90 x 4 mm nails shall be used.

PB 5.5.5 Prefabricated Roof Trusses

Prefabricated timber roof trusses shall be constructed of South African pine as described in clause 3.17 to the designs shown on the detail drawings. The timber shall be of cross-sectional dimensions shown, cut to correct lengths with ends square or cut to the required angle, and shall be assembled in truss fabricating jigs with the truss having the proper camber, and tightly clamped together and joints secured with approved connector plates of galvanised steel sheet, pressed into the timber simultaneously on both sides of the truss with hydraulic press capable of exerting such pressure as will ensure complete penetration of the teeth into the timber. The connector plates shall be of such size as will ensure that the joints so made will adequately withstand the forces exerted on the joints, and to have at least two coats Epoxy Tar finish for coastal areas.

PB 5.5.6 Valleys In Roofs

Valleys in roofs covered with galvanised steel or fibre roofing sheets or with roofing tiles shall each be formed with two 228 mm x 25 mm sawn boards, spiked down to roof timbers, and purlins fixed along outer edges where in galvanised steel and fibre sheet covered roofs and battens along outer edges where in tile covered roofs.

PB 5.5.7 Purlins

Unless otherwise specified, purlins shall be 50 mm x 76 mm and shall be securely nailed to roof timbers at not exceeding 1,14 m centres, ranging perfectly straight and square to the roof with but joints at heading joints and angles and in the case of wrought purlins splayed joints at heading joints and mitred joints at angles.

PB 5.5.8 Brandering To Ceilings

The brandering shall be 38 mm x 38 mm, securely spiked up to the supporting timbers with 88 mm wire nails at 380 mm centre-to-centre. Cross brandering shall be cut in between the longitudinal brandering and securely skew nailed to same with 75 mm wire nails at joints in ceilings and at edges where required for fixing of cornices.

PB 5.5.9 Steel Roofing Sheets

The sheets shall be secured to wood purlins with approved galvanised iron roofing screws each provided with a plastic or asphalt felt washer and a galvanised steel cup washer over the plastic or felt washer and secured to steel purlins with M6 galvanised hook bolts, provided with similar washers under nut.

Screws and bolts at ends of sheets and at end laps shall be spaced at not exceeding two corrugations apart wherever possible, but in no case more than three corrugations apart, and at intermediate purlins at not more than four corrugations apart; screws or bolts shall, in all cases, be provided in the outermost corrugations of the upper sheets.

All necessary cutting to sheets shall be properly performed. Cut edges at sides of valleys, and elsewhere exposed, shall be perfectly straight.

At exposed verges of roofs the iron shall be finished with neatly formed rolls.

The sheets shall have side laps of not less than one and a half corrugations. The minimum roof slopes and sheet end laps shall be, unless otherwise specified, as prescribed in Table 2 of Schedule 2 of Part L of the National Building Regulations and Building Standards Act, 1977.

PB 5.5.10 Metal Ridging for Steel Covered Roofs

The ridging shall be 450 mm girth with roll top and bent down edges, and shall be lapped 225 mm at end joints, cut and properly lapped and fitted at intersections of ridges, hips and valleys, and close beaten into corrugations of roofing iron. Roll shall be closed at feet of hips and at end of ridging.

Ridging shall be fixed with screws to wood purlins and hook bolts to steel purlins, with washers under heads and nuts, respectively, all as described for fixing roofing sheets, and spaced at not exceeding 300 mm centres.

PB 5.5.11 Fibre Cement Roofing Sheets

The sheets shall be mitre-cut at corners as necessary and laid with smooth surface on top, and shall be secured to wood purlins with 7 mm diameter galvanised drive screws not less than 114 mm long, and to steel purlins with M8 galvanised hook bolts, each provided with a plastic or asphalt felt washer and a galvanised steel cupped washer over the plastic or felt washer.

Screw and bolt holes in sheets shall be drilled (not punched), and shall be 0,2 mm larger than the diameter of screws and bolts.

The fixing screws, and nuts on fixing bolts, shall not be tightened more than is necessary for the holding down of the sheets and for the proper seating of the washer over the corrugations, so as to allow for slight movement between the sheets and the supporting structure. On no account shall sheets be deflected at the intermediate purlins in an attempt to make the sheets bear on such purlins.

The side laps of sheets shall be sheltered from the prevailing wind by laying the sheets from left to right, or from right to left, depending on the direction of the prevailing wind, the sheets being laid in the opposite direction to that of the wind.

All necessary cutting to sheets shall be properly performed. Cut edges at sides of valleys, and elsewhere where exposed, shall be perfectly straight.

The minimum roof slopes and sheet end laps shall be, unless otherwise specified, as prescribed in Table 1 of Schedule 2 of Part L of the National Building Regulations and Building Standards Act, 1977.

The manufacturer's instructions regarding laying and fixing of sheets, including side laps, mitring of corners and spacing of screws or bolts, shall be followed in all cases.

One month after fixing, the roof covering shall be thoroughly examined, any defects made good and loose screws or bolts tightened.

Roof boards shall be used by all workmen for safety and to avoid damage to the sheeting.

PB 5.5.12 Adjustable Fibre Cement Ridging

The ridging shall be secured to wood purlins with screws and to steel purlins with hook bolts, passed through the roofing sheets, and provided with plastic or felt and steel washers, all as described for fixing fibre cement roofing sheets.

The manufacturer's instructions regarding laying and fixing of the ridging, including spacing of screws or bolts, shall be followed in all cases.

PB 5.5.13 Fascias And Barge Boards

Fascias and barge boards of pressed fibre cement boards shall be butt jointed with 75 mm wide x 3 mm thick galvanised steel plates four times bolted with M6 galvanised bolts over joints.

PB 5.5.14 Fibre Cement Flashings

Fibre cement flashings shall be secured to wood purlins with screws and to steel purlins with hook bolts, passed through the roofing sheets, and provided with plastic or felt and galvanised steel cupped washers, all as described for fixing fibre cement roofing sheets.

The manufacturer's instructions regarding fixing of the flashings, including spacing of screws or bolts shall be strictly adhered to.

PB 5.5.15 Fibre Cement Gutters

Fibre cement gutters shall be bedded in approved bituminous mastic compound and secured with M6 galvanised gutter bolts with heads of bolts on inside of gutters and each bolt provided with asphaltic felt and galvanised steel washer under head and nut, all in accordance with the manufacturer's instructions. The inside surfaces of sockets and the outside surfaces of spigot ends shall be coated with a thin solution of bitumen to enable the compound to adhere fast when applied, and surfaces of washers in contact with each other and with gutters shall be coated with bitumen. After tightening the bolts, all surplus compounds from the joints shall be removed, and the joints externally finished with neatly trowelled fillets of 2:1 cement mortar.

The spigot ends of gutters shall be lapped on to the socket ends in the direction of the flow wherever possible.

The gutters shall be fixed with proper falls on gutter brackets of the fascia type where fixed to fascia boards and of the purlin type where fixed to purlins. Brackets shall be securely screwed to the roof timbers, at not exceeding 1 m centres, and with extra brackets at angles and outlets.

Gutters shall be provided with all necessary angles, stopped ends, outlet nozzles, etc., jointed to gutters as described above.

PB 5.5.16 Fibre Cement Rainwater Down Pipes

Fibre cement rainwater downpipes shall be jointed with tarred hemp rope gasket caulked into each joint, and the joint filled with a suitable bitumen compound and finished off with neatly trowelled fillet of 2:1 cement mortar.

The pipes shall be fixed to walls with holderbats, bolted around pipes immediately below the socket, and with tails built into walls in 3:1 cement mortar.

Rainwater downpipes shall be provided with all necessary swan necks, branch pieces, plinth bends, radius bends, shoes, etc., jointed to pipes as described above.

PB 5.5.17 Concrete Roofing Tiles

Tiling shall be "straight or broken bond", and vertical joints between tiles and bottom edge of each course of tiles shall range perfectly straight. Unless otherwise specified, interlocking tiles shall be laid to a lap of at least 100 mm and plain tiles to a lap of at least 62 mm.

Half tiles in the case of interlocking tiles, and tile and a half in the case of plain tiles, shall be provided as required at abutments and at verges of roofs. Plain tile roofs shall be provided with double course at eaves.

Unless otherwise specified, each tile in every third course in the case of interlocking tiles, and in every fifth course in the case of plain tiles; all tiles in eaves courses and ridge courses; end tiles in every course at each side of hips and valleys; all tiles adjoining bonnet hip tiles in plain tile roofs; half tiles, full tiles and tile and a half at verges, and all tiles to open eaves and open overhanging verges, shall be fixed to the battens with galvanised nails of such length as will penetrate the battens to a depth of at least 25 mm.

Tiling shall be carefully cut and dressed at hips and valleys and, where necessary at abutments, etc. Mitred portions of tiles at hips and valleys shall be holed and properly secured.

Hip and ridge tiles for interlocking tile roofs shall be socketed V-type, shall match general tiling, and shall be bedded solid in 3:1 cement mortar with strip of approved bituminous sheeting laid under the mortar bedding, of such width as will

give a lap of at least 25 mm on to the roof tiling at each side, and lapped not less than 75 mm at end joints. Socketed joints of hip and ridge tiles shall be bedded in mortar as above and pointed with neatly recessed joints, and hip iron of 25 mm x 4,5 mm mild steel 300 mm long, suitably bent, twice holed and securely nailed to hip rafter, shall be provided at foot of each hip. The mortar bedding shall be trowelled smooth at open ends of ridges.

Ridge tiles for plain tile roofs shall be as above but half-round and but jointed and neatly pointed in tinted 3:1 cement mortar, and hip tiles shall be round pattern bonnet type, to course and bond in with general tiling, and with each tile bedded and neatly pointed in mortar as above and nailed to hip rafter with galvanised nail.

Hip and ridge tiles shall be neatly cut and fitted together at junctions between ridges and hips or valleys, and shall be bedded solid and neatly pointed in tinted 3:1 cement mortar with approved bituminous sheeting under the mortar bedding, cut to shape required and with lap of 25 mm on to the roof tiling.

PB 5.5.18

Covering To Ceilings

(a) Gypsum plasterboard ceilings with plaster finish

The ceiling boards shall be in 900 mm or 1 200 mm widths, with board at ends of ceilings of widths required to suit length of ceilings. Ceiling board shall be in single lengths to the width of ceilings wherever possible.

The boarding shall be nailed to the brandering, with GREY surface to underside, with 2 mm diameter galvanised or cadmium plated clout headed nails, 38 mm long, spaced at not more than 100 mm apart at edges of boards and 150 mm apart along the intermediate brandering.

The joints between boards shall be loose butt joints and covered with wire gauze strips nailed through the boarding to the brandering at 400 mm centres with 38 mm galvanised clout headed nails.

The bonding plaster shall be applied in two layers by the trowel-float-method to a total thickness of not less than 6 mm, and well pressed into the wire scrim over the joints between the ceiling boards, and finished smooth, even and true.

(b) Fibre cellulose board ceilings

The ceiling boards shall be in the same widths, and fixed as specified for gypsum plasterboard ceilings in paragraph (a).

The joints between the boards shall be covered with 25 mm half-round wood cover beads fixed with 38 mm long nails spaced at not exceeding 300 mm.

PB 5.5.19 Cove Cornices to Ceilings

(a) Gypsum plasterboard cornices

Cove gypsum plasterboard cornices shall be nailed through the ceiling boards to the brander and to wall plugs, at not exceeding 200 mm centres, with 2 mm diameter galvanised or cadmium plated clout headed nails, 38 mm long, or fixed to walls with hardened steel nails driven into the brickwork.

Cornices shall be scribed at internal angles and mitred at external angles and shall be in long lengths with splayed heading joints where necessary.

(b) Timber cornices

Scotias shall be fixed to walls with hardened steel nails driven into the brickwork.

PB 5.5.20 Trapdoors In Ceilings

Openings for trapdoors in ceilings shall be formed with 38 mm x 38 mm brander all around each opening, spiked together and to bottom edge of the supporting timbers. Size of opening, unless otherwise specified, shall be 650 mm x 650 mm.

Trapdoor shall be formed with skeleton frame of 50 mm x 38 mm brander, covered on underside with boarding as for ceiling, and hung on a pair of 75 mm steel butts and fitted on underside near closing edge with 100 mm brass bow handle. Soffit of trapdoor shall be flush with soffit of ceiling when closed, and trapdoor shall flap back on to top of the brander, between tie beams or ceiling joists when open.

When trapdoor is closed it shall rest on 50 mm x 19 mm fillets, fixed on soffit of ceiling all around opening, mitred at angles and securely screwed up to the trimmers. Fillets shall project 12 mm into the opening to carry the trapdoor.

Trapdoors larger than 650 mm x 650 mm shall each be provided with 38 mm x 38 mm brander across centre, spiked to the skeleton frame.

PB 5.5.21 Ceiling Insulation

Ceilings shall be insulated, where so specified, with approved resin bonded or stitched fibre glass or mineral wool insulation blanket 38 mm thick, cut to size and laid over brander between ceiling joists and tie beams, etc.

Where insulation is to be in two thicknesses a total thickness of 76 mm is required and the joints shall be staggered.

PB 5.5.22 Framed Joinery

Where the word "Framed" is used it is to include for all mortice and tenon joints, dovetail joints, grooves, stop grooves, rebates, stop rebates, housings, notchings, etc., including housing ends of shelves, divisions, etc.

Joinery

Joinery work shall be put in hand immediately after the order has been given to commence work, or after the receipt of detail, where such are to be supplied, and shall not be wedged or glued up until just before fixing in the building.

No framed joinery for services situated inland shall be manufactured in the humid coastal belt, and no framed joinery for the services situated in the coastal belt shall be manufactured inland. This applies to both purpose made and stock joinery.

All exposed softwood timber in joinery which is not to be painted shall be free from large, loose or dead knots, knot holes, checks, splints, wane or other defects, and in joinery which is to be painted shall be free from all defects other than those which can be filled or otherwise made good in such a way as will not impair the paint finish. All exposed hardwood joinery timber shall be free from all knots, knot holes, checks, splints or other defects and, unless otherwise specified, shall also be free of sapwood.

Purpose made joinery shall be manufactured strictly in accordance with detail drawings.

Stock joinery shall be of approved quality. Joinery shall not be primed until it has been inspected and approved.

Skirting, rails and the like shall be in long lengths. Heading joints where necessary shall be splayed. Counter tops, table tops, drainers, and the like, shall be formed with wide boards, jointed with grooved, cross-tongued and glued joints or with grooved rebated and glued joints of approved type; cross-tongues shall be stopped 25 mm back from ends where ends are exposed to view. The boards shall be in single lengths to top, etc., but where this is not possible the heading joints shall be staggered and jointed as above.

Skirting, rails, angle moulds and beadings of all kinds, shall be close fitted, mitred or scribed at angles, and securely fixed; skirtings, rails and the like shall be fixed with hardened steel or other suitable nails driven into the brickwork or shall be nailed to wall plugs spaced at not more than 700 mm apart. Glazing beads and the like shall be mitred at angles and, unless otherwise specified, shall be fixed with panel pins.

Metalwork**Manufactured Steelwork Generally**

Welding is to be done electrically in the most up to date manner by skilled workmen and cleaned off on completion.

All welds are to be welded with welding rods of the same chemical composition as the tubes, rods, bars, etc., to be welded and all external welds are to be filed clean and smooth.

Welding to be continuous fillet welding to all exposed edges unless otherwise described.

No scaffolding shall be allowed to rest on or fixed to steel windows, doors, frames, etc., in any way.

PB 5.7 Resilient floor finishings

PB 5.7.1 Laying And Fixing

Vinyl sheeting and tiles and such like floor finishing's shall be laid in strict accordance with the manufacturer's instructions, on a perfectly dry and clean screeded surface, using an adhesive supplied or recommended by the manufacturer of the flooring material, and rolled with a suitable roller to ensure complete adhesion of the material. The flooring shall be cut where required and neatly fitted against adjoining floors, thresholds, etc. Vinyl skirtings shall be close fitted to floors and walls, butted at end joints, neatly mitred at internal angles and dressed round external angles, and fixed with adhesive as for flooring.

Unless otherwise described, sheet flooring shall be in standard widths with cut sheets at sides of floors as necessary.

PB 5.8 Glazier

PB 5.8.1 Fixing Of Glass

Glass fixed with glazing beads in unpainted hardwood doors shall be bedded on strips of rubber, velvet, leather, or felt turned over on to both sides of glass in the rebates to form a soft packing between the glass and the woodwork. In all other cases the glass shall be well bedded in back putty in the rebates.

Glass rebates, other than in unpainted hardwood doors, shall be primed before glazing.

Glass panes exceeding 0,5 m² in surface area and fixed with putty only in wood doors, sashes and the like shall be secured in addition with glazing sprigs, and in steel windows and doors with glazing pegs or clips inserted in holes in the steel framing.

Glass panes shall have adequate clearance between the edges of glass and the rebates.

Putty shall be carefully trimmed and cleaned off with front putty worked to within 3 mm of the sight lines.

PB 5.9 **Painter**

PB 5.9.1 **Preparatory Work**

(a) **General**

All floors must be swept clean and walls dusted down, and surfaces not being painted such as face brickwork, sills, floors and stained woodwork covered up and protected against spotting, before any painting is commenced.

No sweeping or dusting shall be done whilst painting is in progress or whilst paint is still wet.

(b) **On woodwork**

Woodwork being painted shall be well brushed down, knots treated with knotting, and all surfaces primed, stopped with hard stopping and rubbed down to an even surface ready to receive the paint.

Woodwork being oiled or stained shall have all plaster stains, pencil marks and other surface discolourations and blemishes carefully removed, and stopped with tinted stopping and well rubbed down.

(c) **On metalwork**

All metal surfaces being painted, except steel structures shall be cleaned of all rust, scale and dirt by scraping or by means of steel wire brushes; also all oil and grease shall be removed and a perfectly clean surface obtained. If necessary, the surface shall be decreased immediately before applying the priming coat, by the use of a suitable grease-removing solvent; any salt deposits on the metal surfaces as may occur in industrial and marine atmospheres shall be removed by the use of a suitable detergent and the surface then thoroughly rinsed and allowed to dry.

New galvanised metal surfaces and surfaces of all non-ferrous metals, which are to be painted, shall be cleaned down as above and given one coat of wash primer (metal etch primer).

Protective coatings on new galvanised metal surfaces, applied by the manufacturers to prevent storage stain and white rust, shall be completely removed by the use of a suitable cleaning agent and the surfaces thoroughly rinsed and allowed to dry, before the surfaces are primed or painted.

After cleaning off rust on metalwork those portions so affected shall be treated with an approved rust inhibitor.

(d) **On plaster**

All plastered wall, ceiling and such like surfaces being painted or distempered shall be filled where necessary with suitable stopping or patching plaster and the whole rubbed down ready to receive the finishing.

(e) **On ceilings**

Boarded ceilings, cover strips and cornices being painted or distempered, shall be filled where necessary with suitable stopping and all nail heads in ceilings, cover strips and cornices being distempered shall be primed with flat paint.

(f) **On block work**

All block work shall be cleaned down to remove all loose and dusty matter, prior to being heated with finishing.

PB 5.9.2 **Surfaces To Be Dry**

All plastered wall, ceiling and similar surfaces shall be perfectly dry and in a fit state to receive the finishing, before the work is put in hand.

PB 5.9.3 **Priming**

Wood, metal and other surfaces normally primed before being painted shall be prepared and primed as before described in readiness to receive the specified paint system.

Backs of wood door and similar frames and surfaces of other new or re-fixed joinery in contact with brickwork, etc., and built in as the work proceeds, shall be primed before building in whether the articles are to be painted or not, to prevent moisture seeping into the wood from the mortar bedding.

Wood surfaces shall be knotted, primed and stopped before being coated with emulsion paint or distemper.

Tongued and grooved and rebated edges of boards in batten doors, and other suchlike inaccessible parts of joinery shall, before the joinery is assembled, be primed or where the joinery is to receive a finish other than paint, be given one coat of such other finishing material.

Priming to external structural timbers shall be applied before the timbers are fixed in position and shall include all wrought surfaces, such as backs of fascia and barge boards.

PB 5.9.4 **Application Of Paint**

All coats of paint shall be thoroughly dry before subsequent coats are applied and rubbed down where necessary.

All work shall be finished to colour approved by the Engineer. The tints of undercoats shall approximate those of the finishing colour and in order to indicate the number of coats applied and to avoid misses when applying a succeeding coat, a slight difference shall be made in tint of each coat.

Priming on wood surfaces shall be by brush application. Priming on surfaces other than wood shall be by brush application or if in the opinion of the Engineer, the primer and the surfaces are considered suitable for roller application, the primer may be so applied. Priming applied by brush application shall be well brushed in to obtain maximum penetration.

Undercoat and finishing coats may be applied by brush or roller.

The use of spray gun on site for application of paint will not be permitted, except in the case of cellulose and other special cases where spraying is the accepted method of application; in cases where spraying is permitted all surrounding surfaces shall be properly masked.

The finishing coat on woodwork and metalwork, unless otherwise specified, shall be of high gloss paint. All materials shall be used in strict accordance with the manufacturer's instructions.

PB 5.10 Protection and cleaning of works

The Contractor shall provide all necessary dust sheets, covers, etc., and shall exercise all necessary care to prevent marking surfaces of walls, floors, ceilings, glass, electrical fittings, etc., and shall keep all parts of the works perfectly clean and free at all times from spotting, accumulation of rubbish, debris or dirt arising from the operations. Any surface disfigured or otherwise damaged shall be completely renovated or replaced as necessary, to the Engineer's approval, by the Contractor at his own expense.

The Contractor shall test all doors, fanlights and windows and all other fittings for proper operation and effect the required rectification prior to the handing over of the building.

The premises shall be left clean and fit for occupation at the completion of the work.

PB.5.11 Plumbing and drainage supplementary preambles

PB.5.11.1 "Polycop" polypropylene pipes

Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated

Pipes shall be firmly fixed to walls etc. with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

All pipes' diameters are nominal external

PB.5.11.2 "Polyink" polypropylene pipes

Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supaclamp" running joints.

Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured.

Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers.

Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers.

Reducers shall be including jointing to pipes with PVC rubber ring Z joint couplers and reducers shall be of sufficient overall length to accommodate same.

All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions.

All pipe diameters are nominal external.

PB.5.11.3 uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.

Soil, waste and vent pipes and fittings shall be solvent weld jointed uPVC pressure pipes and fittings.

Pipes for water supply shall be of the class stated.

Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints.

PB.5.11.4 Copper pipes

Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO2016. Only compression fittings shall be used in walls and ground.

All soldered joints shall be wiped and brass unions shall be used for jointing lead to steel.

PB.5.11.5 Reducing fittings

Where fittings have reducing ends or branches, they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc. will be entertained.

PB.5.11.6 Wire gratings

Descriptions of gutter outlets etc. shall be deemed to include wire balloon gratings.

PB.5.11.7 Exposed concrete surfaces

Exposed surfaces of concrete storm-water channels, cover slabs, inspection eye markers slabs, gully tops, cleaning eye tops, catch pits, inspection chambers, etc. shall be finished smooth with plaster.

PB.5.11.8 Excavations

No claim for rock excavation will be entertained unless the contractor has timeously notified the principal agent thereof prior to backfilling.

"Soft rock" and "Hard rock" shall be as defined in "Earthworks"

PB.5.11.9 Laying, backfilling, bedding, etc. of pipes

Pipes shall be laid and bedding and trenches shall be carefully back filled in accordance with manufacturers' instruction.

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L: medium-pressure pipelines LD: Sewers LE: Storm-water drainage pipe trenches etc. shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB: Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding.

PB.5.11.10 Stainless steel basins, sinks, wash troughs, urinals, etc.

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.

PB.5.11.11 Waste unions

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and clains fixed to fittings.

PB 6 TOLERANCES

PB 6.1 Basis of measurement

PB 6.1.1 General

Permissible deviations will apply in the case of linear dimensions, position, and level. The Contractor shall construct each of the various parts of the works within the limits of the applicable permissible deviations set out in clause 6.2 unless some other degree of accuracy is required in terms of the project specification or is shown on the drawings.

PB 6.1.2 Methods Of Measurement Of Deviations

Certain deviations will be measured as set out below:

- (a) Any deviation from flatness of a plane surface, will be measured as the maximum deviation of the surface from any straight line of length 3 m joining two points on the surface, determined by means of a straight edge the ends of which are supported on identical blocks of suitable thickness placed one over each of the points.
- (b) Any abrupt change in a continuous surface, including a local depression or peak in a floor or wall, will be measured as specified in (a) above.
- (c) Out-of-squareness of a corner or an opening or an element such as a column will be measured by taking the longer of two adjacent sides as the base line, and determining any departure from the perpendicular of the side at either end of this base line.

PB 6.2 Permissible deviations

The permissible deviations for elements or components shall be as follows:

- (a) Position on plan of any edge or surface measured from the nearest grid line or agreed centre line ± 25 mm
- (b) Linear (other than cross-section) dimensions ± 30 mm
- (c) Cross-section dimensions -10 + 20 mm
- (d) Level (deviation from designed level with reference to the nearest transferred datum (TD) of the upper or lower surface, as may be specified, of any slab or other element or component) ± 10 mm
- (e) Out-of-squareness of a corner or an opening or an element such as a column (See clause 6.1.2(c)) for short side of length:
 - (i) up to and including 0,5 m ± 5 mm
 - (ii) over 0,5 m up to and including 2 m ± 15 mm

- (iii) over 2 m up to and including 4 m ± 20 mm
- (f) Exposed surface (including floor slabs and paving):
 - (i) Flatness of plane surface ± 5 mm
 - (ii) Abrupt changes in a continuous surface ± 5 mm
- (g) Exposed surface to be plastered or receive normal or granolithic screeds:
 - (i) Flatness of plane surface ± 10 mm
 - (ii) Abrupt changes in a continuous surface ± 5 mm
 - (iii) Surface of plaster and normal or granolithic screeds ± 5 mm

PB 7 TESTS

PB 7.1 GENERAL

The Engineer shall have free access to the works for taking samples and carrying out tests. The Contractor shall render any assistance necessary. If so required, the Contractor shall provide storage and protection of such samples on site.

PB 8 MEASUREMENT AND PAYMENT

PB 8.1 GENERAL

PB 8.1.1 All items in this section will be measured by number, square metre or linear metre completed and the tendered rates shall include full compensation for the supply, delivery, handling and installation of all materials, the provision of all necessary labour and supervision, transport, plant, equipment and incidentals necessary to complete, protect and maintain the works as specified or as shown on the drawings.

PB 8.1.2 Where a lump sum is required for a complete structure, the tendered rate shall include all items and contingencies, as specified in this section or as shown on the drawings.

PB 8.2 Scheduled items

PB 8.2.1 **Brickwork..... Unit: m²**

Brickwork will be measured on the centre line of the walls. Areas occupied in walls by windows and doors will be excluded from the areas measured, and corners and intersections common to more than one brick wall will be measured once only.

The rate shall cover the cost of brickwork complete as specified, including test sections where specified, pointing, providing brick lintels, brick reinforcement and ties, etc., the building in of conduits, beams, pipe sleeves, doors and windows, the raking out of joints and the filling of cavities in cavity walls and walls constructed of hollow concrete masonry units, below floor level and elsewhere where specified.

The test section for faced brickwork as specified in clause 5.1.14 shall only be paid for if approved by the Engineer and, if rejected, shall be removed at the Contractor's expense.

PB 8.2.2 Air Bricks

- (a) External air bricks Unit: No
- (b) Internal air bricks Unit: No

The rate shall cover the cost of providing and building in the air bricks as specified.

PB 8.2.3 Bagged Finish to Brickwork Unit: m²

The rate shall cover the cost of providing rough sacking, additional cement grout as required and finishing the bagging as specified.

PB 8.2.4 Window Sills

- (a) External (describe) Unit: m
- (b) Internal (describe) Unit: m

The rate shall cover the cost of providing and building in face bricks, fibre cement sheets or any other material prescribed, as well as all accessories specified.

PB 8.2.5 Tiling Unit: m²

The rate shall cover the cost of providing all material and the laying and grouting of tiles, complete as specified.

PB 8.2.6 Plaster Work Unit: m²

The rate shall cover the cost of the construction of the plaster work, including the supply of all materials, mixing, applying, finishing, forming reveals, joints, etc., complete as specified.

PB 8.2.7 Floor Screeds

- (a) Normal screeds Unit: m²
- (b) Granolithic screeds Unit: m²

The rate shall cover the cost of the construction of the floor screeds, including the supply of all materials, mixing, laying, finishing, the forming of nosings, reedings, skirtings, etc. and, where the concrete sub-floor has matured, of the brushing and applying a cement grout, complete as specified.

PB 8.2.8 Paving Unit: m²

The rate shall cover the cost of providing paving slabs or bricks, sand bedding and joint filling and expansion joint material and of constructing the paving.

PB 8.2.9 Waterproofing

(a) Damp-proof course in walls Unit: m

(b) Damp-proof membrane under floors Unit: m²

The unit shall be the net length or area of waterproofing installed. The length or area of overlaps shall not be measured for payment.

The rate shall cover the cost of providing and laying all material as specified, including the sealing of all laps and joints, complete as specified.

PB 8.2.10 Expansion Joints Unit: m

The rate shall cover the cost of providing and installing all filling and sealing material and of the forming of expansion joints, complete as specified.

PB 8.2.11 Structural Timber

(a) Wall plates (indicate size) Unit: m

(b) Beams (indicate size) Unit: m

(c) Joists (indicate size) Unit: m

(d) Rafters (indicate size) Unit: m

(e) Purlins (indicate size) Unit: m

(f) Brandering (indicate size) Unit: m

(g) Roof trusses complete (indicate drawing number) Unit: No

(h) Roof complete (indicate drawing number) Unit: Sum

The rate shall cover the cost of the supply of all materials, manufacture, cutting, waste, laps, joints and fixing of the timber as indicated, including nails, bolts, nuts, washers, hoop irons, ties and other fixtures required, complete as specified.

PB 8.2.12 Roof Covering Unit: m²

The rate shall cover the cost of providing and fixing all roof covering material as prescribed, including all flashings, soakers, valleys, ridge coverings, roofing screws and all other fixtures required to complete the work, as specified.

PB 8.2.13 Fascias And Barge Boards Unit: m

The rate shall cover the cost of providing and fixing of all material, fixtures, screws, bolts, nuts, washers and other accessories required to complete the work, as specified.

PB 8.2.14 Gutters and Rainwater Down pipes

(a) Gutters Unit: m

(b) Rainwater downpipes Unit: No

The rate shall cover the cost of supply and building in of all material including angles, stopped ends, outlet nozzles, gutters, gutter brackets, etc. for gutters and swan necks, branch pieces, plinth bends, radius bends, shoes, brackets, etc. for rainwater downpipes, including all bolts and sealants, complete as specified.

PB 8.2.15 Ceilings

(a) Ceilings Unit: m²

(b) Cornices to ceilings Unit: m

The rate shall cover the cost of supply and installation of all material including cover strips to joints, nails, trapdoors and gypsum plaster where prescribed, complete as specified.

PB 8.2.16 Ceiling Insulation Unit: m²

The rate shall cover the cost of supply and installation of all material, as specified.

PB 8.2.17 Joinery

(a) Doors (type and size indicated) Unit: No

(b) Skirtings (size indicated) Unit: m

(c) Other items (describe or indicate drawing number) Unit: No or m

The rate shall cover the cost of the supply of all material, manufacture, cutting, waste, fixing and installation of the joinery items, complete as specified.

The rate for doors shall also cover the cost of the door frames and all accessories, such as hinges, hooks, bolts, locks, latches, etc., and of damp-proof course on both sides and above door frames in cavity walls, as specified.

PB 8.2.18 **Metalwork** **Unit: No**

The rate shall cover the cost of supplying all material, manufacture, applying priming coat of paint or galvanising, as specified, delivery and building in of units, including burglar proofing where specified, locks, catches, glazing, etc., and of damp-proof course under all windows and on both sides and above frames in cavity walls, as specified.

PB 8.2.19 **Resilient Floor Finishing**

(a) Vinyl-fibre, PVC, or thermoplastic floor tiles (specify) Unit: m²

(b) Vinyl cove skirting Unit: m

The rate shall cover the cost of supplying all material and adhesives required and the laying of the floor finishing's.

PB 8.2.20 **Painting.....** **Unit: No or m or m² or Sum**

Only the surface covered by the final finishing coat shall be measured.

The rate shall cover the cost of surface preparation, supplying and applying all the coats of paint, repairing any damaged surfaces, and all materials necessary for completing the work.

PB 8.2.21 **Electrical Installation** **Unit: Sum**

The rate shall cover the cost of supplying and building in of all equipment such as switchboards, conduits, wires, cables, sockets, light fittings, etc., cutting recesses, chases and holes in walls as required and repairing any damaged surfaces after installation, including testing of the installation.

PB 8.2.22 **Miscellaneous** **Unit: No, Sum or m**

The rate shall cover the cost of all workshop detail drawings, where prescribed, material, plant, tools and labour to complete the scheduled items complete, as detailed, including corrosion protection and/or painting, as specified, and building in.

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PART 2:

PLK: Manufacture and supply of valves

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PART 2:

PLK Manufacture and supply of valves

PLK 1 Scope (PLK –1)

This section of the Specification includes the manufacture, testing and supply of valves for the conveyance of raw or potable water at ambient temperatures in pipes under pressure.

PLK 2 Standards

The most recent issues of the following standard specifications will apply for the purposes of this Specification.

SABS 144	:	Cast-iron single door reflux valves
SABS 191	:	Cast steel gate valves
SABS 192	:	Cast steel single door reflux valves
SABS 664	:	Cast iron gate valves for waterworks
SABS 665	:	Cast iron gate valves for general purposes
BS 5155	:	Cast iron and carbon steel Butterfly valves
ISO 2441	:	Pipeline flanges for general use - shapes and dimensions of pressure tight surfaces
SABS 1123	:	Steel pipe flanges
SIS 05 5900	:	Pictorial surface preparation standard for painting steel surfaces

PLK 3 Materials

PLK 3.1 Sluice valves

PLK 3.1.1 The valve body, bonnet, thrust dome, gate and glands shall be of cast iron or cast steel as specified and depending on the required test pressures.

PLK 3.1.2 Body and gate sealing rings shall be of bronze, gunmetal or stainless steel. RSV gate shall be nitrile rubber covered, and fully encapsulated. The rubber shall not be removed from the guides of the gate.

PLK 3.1.3 Spindles shall be of high grade stainless steel.

- PLK 3.1.4** An isolating valve must be able to check the specified water pressure from both sides.
- PLK 3.2** **Butterfly valves**
- PLK 3.2.1** Valve bodies and discs shall be of high-grade cast-iron or cast steel as specified and depending on the required test pressures.
- PLK 3.2.2** The disc shaft or stub-shafts shall be of stainless steel located in self-lubricating bearings.
- PLK 3.2.3** Sealing rings, seal-retaining rings, body seat-rings and associated screws shall be of stainless steel.
- PLK 3.2.4** A butterfly valve must be able to check the specified water pressure from both sides.
- PLK 3.3** **Reflux valves**
- PLK 3.3.1** Valve bodies shall be of cast iron or cast steel depending on the specification or test pressures.
- PLK 3.3.2** Valve doors shall be of cast iron or cast steel.
- PLK 3.3.3** The valve body and doors or disc shall be fitted with replaceable stainless steel body and door seat rings.
- PLK 3.4** **Air valves**
- PLK 3.4.1** Valve bodies, covers and shield plates (large orifice) shall be of cast iron.
- PLK 3.4.2** The balls shall be of stainless steel.
- PLK 3.5** **Manufacture**
- PLK 3.5.1** **General**
- PLK 3.5.1.1** The design pressure of the valves shall not be less than the pressure specified subject to a minimum of 1 000 kPa.
- PLK 3.5.1.2** All valves shall be double-flanged with bolt holes drilled off-centre all in accordance with the requirements of SABS 1123 or as otherwise specified.
- PLK 3.5.1.3** The Tenderer shall give as a function of the downstream pressure the maximum acceptable discharge of water through the valves without risks of vibration and cavitation. The Tenderer shall also submit the head-loss characteristics of the valves.

- PLK 3.5.1.4** The design pressure will be hand stamped on the top edge of the flanges of valves in kPa.
- PLK 3.5.1.5** If specified, valves shall be supplied with by-passes to be bolted on to the body of the valve and not to the adjoining pipe work.
- PLK 3.5.1.6** Valves shall be fitted with position indicators if specified. Fully closed, fully open and intermediate positions shall be indicated in corrosive proof and robust design indicators.
- PLK 3.5.1.7** Arrows shall be cast on all handwheels together with the wording "TO OPEN" or "TO CLOSE". The closing direction shall be clockwise unless otherwise specified.

In the case of cap top valves, an aluminium disc of at least 100 mm diameter and with the same wording and arrows shall be slipped over the spindle and retained by the cap.

- PLK 3.5.1.8** All valves shall be supplied complete including bolts, nuts, washers and gaskets in accordance with the class of valve. Bolts shall be of sufficient length to allow not more than three screw threads to protrude outside units after complete tightening of the assembly. Gaskets for flanged joints shall be of compressed asbestos fibre to BS 2815 Grade A and full faced with a minimum thickness of 3 mm for pressures up to and including 1 600 kPa cloth-inserted rubber may be used.

- PLK 3.5.1.9** The following information shall accompany the tender:

- Description
- Flange Drilling
- Maximum working pressure
- Maximum unbalanced pressure
- Test pressure
- Manufacturers number
- Material of components
- Gearing
- Accessories

PLK 3.5.2 Sluice valves

- PLK 3.5.2.1** Double-flanged, wedge-gate, internal (non-rising) spindle sluice valves of the waterworks pattern are required to comply fully with SABS 191 or SABS 664 where applicable.
- PLK 3.5.2.2** Only full-way valves will be accepted (i.e. the gate must be clear of the waterway in the fully open position).

PLK 3.5.2.3 The maximum force required to turn the hand wheel at the maximum torque shall not be greater than 100 N per hand at the hand wheel run (Total effort = 200 N) when operating at an unbalanced pressure equal to the rated working pressure of the valve. This may be achieved with the aid of gearing of a suitable ratio.

Where gears are used replaceable shear pins shall be provided to prevent damage to the valve if excessive pressure is used.

PLK 3.5.3 Butterfly valves

PLK 3.5.3.1 Horizontal spindle type butterfly valves complete with gearing, hand wheels and flanged at both ends with separate bolting for joining to the adjacent pipe work is required.

PLK 3.5.3.2 Wafer valves or valves fitted with studs for attachment to the adjacent flanges are not permitted.

PLK 3.5.3.3 Valves shall be drop-tight when closed and metal to metal sealing is not acceptable.

PLK 3.5.3.4 All resilient seals shall be removable and readily replaceable on Site with the valve in position.

PLK 3.5.3.5 Resilient seals shall be retained by corrosion resistant securing elements to prevent corroding in position (e.g. bolts, set screws, etc.)

PLK 3.5.3.6 The valve-water seal shall be of the following types:

- a resilient seal fixed to the edge of the disc by corrosion resistant securing elements sealing on a stainless steel or bronze insert fixed in the body.
- a resilient seal fixed to the body of the valve by corrosion resistant securing elements sealing on a stainless steel or bronze insert fixed in the edge of the discs.

PLK 3.5.4 Reflux valves

PLK 3.5.4.1 Reflux valves shall be double-flanged and comply with SABS 144.

PLK 3.5.4.2 Valve bodies and seals shall be free of pockets that will allow dirt accumulation and prevent the doors from closing fully.

PLK 3.5.4.3 Stops or an approved resilient material shall be fitted into the body to prevent the doors from fluttering under full flow conditions.

PLK 3.5.4.4 Valves shall be designed to allow for rapid but non-slamming closing characteristics.

PLK 3.5.5 Air valves

PLK 3.5.5.1 Air valves shall be supplied with double flanged, wedge gate internal (no rising) spindle sluice valves for isolation, which unless otherwise specified shall conform in all respects to this specification.

PSLK 3.5.5.2 The air valve shall be of a double orifice design, HFNS (high flow non-slam), with 4 functions:

- (1) The large orifice for exhausting large volumes of air while filling a pipeline
- (2) Intake of large volumes of air while draining the pipeline
- (3) External automatic orifice with the purpose to vent air in solution under pressure
- (4) A rolling seal activating the small large orifice for surge-damping whilst filling the pipeline.
- (5) Quick and easy maintenance on the small orifice without the need for any special tools.
- (6) The small orifice must have a flow area of 12 square mm, any flow areas less than this will not be permitted.
- (7) Air flow capacities will not be acceptable if not supported by third party testing authorities, As the South African Bureau of Standards do not have any such test facilities, their certificates will not be acceptable.
- (8) Low head sealing valves that requires more than 2 meters, is not acceptable.
- (9) Surges generated by non-slam discs (albeit being smaller than that generated by Kinetic valves) are present in pipelines, and no non-slam discs shall be allowed. The supplier must note this specification as a very specific requirement, as the consequences of switch points do have serious implications by damage caused to pipelines.
- (10) Adjustable or variable non-slam devices are not acceptable as it will leave the system subject to tampering.

The design of the small orifice is based on a rolling seal principle and has a self-cleaning effect due to the "Venturi" action on the slotted orifice. The small orifice has a built-in strainer to keep out large particles. The valve is to have an integral diaphragm actuated hydraulic operated slow closing device, which does not have a switching point of a non-slam disc.

PSLK 3.5.5.5 Air valve analysis and design is based on "ARI" Air Valves. The Bidder will be responsible to submit a manufacturer-specific air valve analysis, should the Bidder specify alternative air valves.

PLK 3.5.6 Electric actuators

PLK 3.5.6.1 When specified, the valves shall be fitted with electric, motor-driven flood-proof IP 67 actuators of robust design, capable of closing the valves under all unbalanced pressures.

- PLK 3.5.6.2** The Tenderer shall state the maximum torque required to operate the valve in his Tender. In determining this maximum torque an allowance shall be made for any deterioration that could be expected to occur in the bearings during the life of the valve. The actuator shall be capable of transmitting twice this maximum torque without any of its components suffering permanent damage. This shall be proven to the Engineer's satisfaction by workshop tests.
- PLK 3.5.6.3** The actuators shall be capable of restraining the valve in any position under all possible conditions of operation, and shall not, in any circumstances, be capable of becoming self-motorised as a result of the dynamic torque loading on the disc or plunger.
- PLK 3.5.6.4** All gearing shall be manufactured in accordance with BS 436 Class C and shall be machine cut. All components requiring lubrication shall be adequately lubricated and totally enclosed flood-proof casing fabricated in cast iron and/or die cast aluminium to suit the service weather proof casing whether the valve is to be installed in the open or under cover. Actuators shall also be fitted with mechanical stops to prevent excessive turning and shall be provided with replaceable shear pins.
- PLK 3.5.6.5** Hand wheels shall be fitted to all actuators. The direction of rotation to close the valve shall be clockwise when viewed from above the end of the input shaft and from the position of operation. In addition, they shall be clearly and indelibly marked with an arrow showing the direction of closing and the words "Close" and "Toe".
- PLK 3.5.6.6** Whether the valve is actuator driven or manually operated, the maximum force required to turn the hand wheel at the maximum torque defined above shall not be greater than 100N per hand at the hand wheel rim (total effort = 200N). For large valves the minimum of complete revolutions of the hand wheel to move the valve gate from fully open to fully closed shall not be less than 100.
- PLK 3.5.6.7** All electric actuators shall be provided with reversing contactors: local and remote control shall be provided; a device making the local control non-operative shall also be provided on the relevant remote control panel.
- PLK 3.5.6.8** After factory tests, the actuators shall be removed from the valve and delivered to site in separate boxes to safeguard against damage.

PLK 3.5.7 Protection

All materials and workmanship must comply with relevant SABS specifications.

PLK 3.5.7.1 Internal Protection

Internal surfaces of valve bodies and discs shall be grit blasted to a Sa 2½ of SIS 05 50 00 finish. Successive coats of approved non-toxic epoxy resin paint suitable for spray application (Copon EP 2300 or similar) shall then be applied to give a final dry film thickness of 250 µm. Drying times between successive layers shall be strictly in accordance with the requirements of the paint manufacturer.

As an alternative to the protection as specified above, the Contractor may be required to use either a solvent less epoxy paint system or a fusion bonded epoxy powder coating as specified in the Project Specification.

PLK 3.5.7.2 External protection

External surfaces of valve bodies shall be wire brushed to A 3 of SIS 05 59 00 standard and painted with one layer zinc chromate primer to SABS 679 Type I (dried film thickness 50 µm). This will be followed by two alkyd-based undercoats (each coat 25 µm thick) and one alkyd-based enamel finishing coat to SABS 630 Grade I (dried film thickness 25 µm). Final colour will be as specified by the Engineer.

Machined flanges will be painted with a protective coating of “shellac” or similar.

PLK 3.6 Tolerances

Tolerances as specified in the appropriate SABS or BS standards shall apply to this Contract.

PLK 3.7 Testing and inspection

PLK 3.7.1 Testing by manufacturer

The manufacturer shall carry out all tests to ensure that valve materials conform to the requirements of the relevant SABS or BS Specification. These tests will not necessarily be attended by the Engineer but records must be kept and all test results shall be made available to the Engineer.

PLK 3.7.2 Testing by independent body

The Engineer may appoint an independent recognised body to conduct control tests. Samples required for such tests will be provided by the Manufacturer free of charge and sampling will be done by this body in accordance with the relevant SABS or BS Specification.

The cost of such control tests will be borne by the Employer.

PLK 3.7.3 Inspection

PLK 3.7.3.1 Visual, operational and dimensional inspection of valves as well as inspection of protective coatings will be carried out by the Engineer and/or the Manufacturer in the Manufacturers workshops prior to the despatch of valves to site.

PLK 3.7.3.2 Inspection by the Engineer shall in no way relieve the Manufacturer of any of his obligations to design, manufacture and supply valves strictly in accordance with the Specification.

PLK 3.7.4 Hydrostatic testing

PLK 3.7.4.1 All hydrostatic tests will be witnessed by the Engineer and the Manufacturer will give at least one week prior notification to the Engineer of the proposed dates for such tests.

PLK 3.7.4.2 Valve bodies will be close end tested to at least 1,5 x the working pressure. Test pressures will be maintained for at least 5 minutes and valve bodies will be water tight in all respects at the test pressure.

PLK 3.7.4.3 Assembled valves will be open-end tested to 1,5 x working pressure for materials strength and soundness. Valves will be drop tight from both directions over the complete range of pressures from 0 to 1,5 x working pressure.

PLK 3.7.4.4 Each valve will be supplied with a test certificate certifying that it complies in all respects with the requirements of this Specification.

PLK 3.8 Measurement and payment

PLK 3.8.1 General

Tendered prices shall include for the following unless otherwise specified in the Project Specification.

- Protective coatings as specified.
- Couplings and/or jointing material for each type of valve.
- Packing and temporary protection against damage during transport and delivery.
- Temporary storage and maintenance if required.
- Delivery and storage of material on site or in a store as specified.
- Testing and inspections at Manufacturer's works.

PLK 3.8.2 Measurement

Valves will be measured per unit of each type.

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PART 3

PLN: Manufacture, supply and testing of steel pipes

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PART 3:

PLN Manufacture, supply and testing of steel pipes

PLN 1 Scope

This specification covers the manufacture and supply of bare, electric welded low carbon steel pipes and steel pipe special items for the conveyance of water at ambient temperatures and at medium pressures.

PLN 2 Standards

Pipes and specials shall be manufactured, tested and inspected in accordance with the latest issues of the following standard specifications unless amended in subsequent clauses in this specification.

a) Pipes

SABS 719 : Steel Grades A, B and C

SABS 1431 : Steel Grades 300 WA

API 5L : Steel Grades x46, x56 and x60

b) Specials

Specials, of 150 mm nominal diameter and smaller, are to be manufactured from piping conforming to ASTM Schedule 40.

Specials larger than 150 mm nominal diameter shall be manufactured from piping complying with this specification.

The radiographic technique, adjudication of radiographs and repair of defects shall be in accordance with API 1104.

c) Qualifications of Welders

All manual or semi-automatic welds and repair welds shall only be undertaken by welders qualified under the tests laid down in accordance with API 1104.

d) Non-destructive Tests and Adjudication

- Radiographic inspection: API 1104
- Ultrasonic inspection: API 5L

- e) In this Specification reference is made to the latest issues of the following specifications:

- SABS 719
- API 5L
- API 1104
- ASME Section V
- BS 2971
- BS 2633

PLN 3 Stresses

- a) All pipes shall be hydrostatically tested as described in PLN 6.5 to a pressure such as to produce a circumferential tensile stress in the steel of not less than 90% of the minimum yield stress.
- b) The design stress for pipes subjected to the specified design pressures shall be 60% of the minimum yield stress of the steel.

PLN 4 Process of manufacture for pipes

PLN 4.1 Manufacture for pipes

Pipes shall be manufactured by an approved semi automatic submerged-arc welding process or shall be electric resistance welded. Where semi automatic submerged-arc welding is employed, at least one pass shall be made on the inside and at least one pass on the outside. The number of longitudinal weld seams shall not exceed:

- a) one seam for pipes up to 1 000 mm nominal diameter
- b) two seams for pipes larger than 1 000 mm and up to 2 000 mm nominal diameter

Circumferential welds by semi automatic submerged-arc welding method for factory double-jointed pipes shall have at least one pass on the inside and at least one pass on the outside.

PLN 4.2 Welds

SABS 719, BS 2971 and BS 2633 shall generally apply.

For fusion-welded pipes and specials, the internal weld bead shall not protrude more than 1 mm into the bore of the pipe or special.

For electric resistance welded pipes, the height of upset metal and flash on the inner surface shall not exceed 1,0 mm.

For pipes to be jointed by butt-welding, the internal weld bead shall be ground flush with the pipe body for a length of 200 mm from ends to be jointed.

For pipes to be coupled by flexible couplings, external weld reinforcement or upset metal and flash shall be ground flush with the pipe body for a length of 200 mm from the end to be coupled.

PLN 5 Dimensional requirements

PLN 5.1 Pipes

All dimensions will be in accordance with SABS 719 clause 4.

PLN 5.2 Specials

The tolerances on specials will be in accordance with BS 534, Section 4.

PLN 6 Testing and inspection at manufacturer's works and at site

PLN 6.1 General

Factory and site inspection, supervision of tests and adjudication of test records shall be carried out by an independent Inspectorate.

Tests and inspections shall be carried out at the manufacturer's works at the expense of the Contractor who shall provide all necessary testing facilities, labour, instruments, equipment and samples that might be required, free of charge. The inspectorate shall be afforded every facility during the course of manufacture and testing to enable the inspection to be carried out effectively.

All test samples shall be selected by the appointed Inspectors and all instruments used for testing purposes shall be approved by the Inspectors and if in the opinion of the Inspectors any instrument should require calibration, such instruments shall be calibrated at the expense of the Contractor by the SABS or such other body as may be approved by the Inspectorate.

PLN 6.2 No mechanical working or straining of pipes and specials shall be allowed after testing and inspection.

PLN 6.3 Visual inspection

All finished pipes and specials shall be visually examined and shall be free of injurious defects as defined in API 5L Section 10.7.

PLN 6.4 Non-destructive inspection

PLN 6.4.1 Ultrasonic inspection

Pipes shall be made by an approved welding process and 100% of all longitudinal or spiral welds on straight pipes shall be checked with an approved ultrasonic method capable of continuous and uninterrupted inspection of the weld seam in accordance with API 5L Section 9.10, 9.11 and 9.12 except that the equipment shall be checked with an applicable reference standard at least twice every working turn.

PLN 6.4.2 Radiographic Inspection

a) Longitudinal weld pipe

All electric fusion welded pipes, shall be inspected by radiological methods for a distance of 200mm from each pipe end.

b) Spiral weld pipe

All electric fusion welded pipes shall be inspected by radiological methods for a distance of 100mm from each end of each length of pipe and of the complete "H" at all scalp and welds including 150mm of the spiral welds in both directions away from the intersection points with the scalp and welds.

c) Circumferential butt welds

100% of the length of circumferential butt welds shall be examined provided, when consistently acceptable results are obtained, the number of welds to be so tested may be reduced by mutual agreement between the Engineer, the Inspectorate and the Contractor.

d) Specials

100% of all manual or semi-automatic welds in specials shall be examined radiographically provided, when consistently acceptable results are obtained, the number of welds to be so tested may be reduced.

Where specials cannot be hydrostatically tested, all welds shall be liquid penetrate tested as per ASME Section V.

e) Repairs

Straight piping:

100% of the total length of all repairs shall be examined radiographically provided, that where repairs are made before ultrasonic inspection and such repairs pass ultrasonic inspection, no further radiographic inspection of same is required.

Pipes for rail, road and river crossings 100% of the total length of all welds shall be examined radiographically.

PLN 6.5 Hydrostatic testing

- a) Each individual straight pipe shall be subjected to a hydrostatic test in accordance with the methods described in API 5L, Section 5. Test pressures shall be such as to produce tensile fibre stresses in the pipe wall of not less than 90% of the minimum specified yield strength of the steel or shall be 9MPa whichever is the lesser. Leaks or sweats shall be considered injurious defects.
- b) Should it not be possible to hydrostatically test straight piping and/or specials the through liquid penetrate test as per ASME Section V shall be done on all welds over and above the non-destructive tests specified above. This shall only be applicable with the prior written approval of the Engineer.

PLN 6.6 Repair of injurious defects

Injurious defects found by non-destructive testing of welds, visual examination, hydrostatic testing or determined by any other means to exceed the limitations in API 5L, Section 10.7 shall be repaired in accordance with API 5L Section 10.8 and 10.9 but subject always to the requirements of this specification.

PLN 6.7 Destructive testing

PLN 6.7.1 The following destructive tests shall be performed in accordance with SABS 719 clause 7.2 on the first pipe and thereafter on one pipe every 500 subsequent pipes.

- a) Transverse Tensile Test
- b) Root Bent Test (Electric Fusion Welds)
- c) Flattening Test (Electric Resistance Welds)

PLN 6.7.2 Sampling for destructive tests

- a) First sample

A section long enough to provide all of the test specimens and material shall be cut from the selected pipe.

- b) Second sample

If the test specimens and material from the first selected pipe fail to pass any of the tests, a section long enough to provide the appropriate specimens for the tests failed by the first sample shall be cut from two further pipes.

- c) Third sample.

If the test specimen from the second sample fails to pass the test(s) a similar section shall be cut from each of a further ten pipes.

- d) Compliance.

The piping shall be considered as complying with the specification if after testing of the first or the second or the third sample no defect is found.

PLN 7 Flanges

- a) Material - shall be steel plates to conform to the requirements of SABS 1123.
- b) Dimensions - shall be in accordance with SABS 1123 unless otherwise specified in the Schedule H of Quantities or on the drawings.
- c) Type - all flanges shall be of the steel-plate for welding type and shall have flat joint faces unless otherwise specified in the Schedule or Quantities or on the drawings.
- d) Finish - joint surfaces shall be in accordance with SABS 1123 clause 4.5.
- e) All flanges shall be supplied complete with bolts, nuts and washers of a material to conform to the requirements of SABS 1123 where applicable, otherwise to the requirements of the Engineer.

Gaskets for flanged joints shall be of compressed asbestos fibre to BS 2815 Grade A and full faced, unless otherwise specified in the Project Specification, with a minimum thickness of 3 mm.

PLN 8 Flexible couplings

Flexible couplings shall be of the "Viking Johnson" or "Klamflex" type with centre register except where specified to the contrary in the Schedule of Quantities or on the drawings. Couplings must be able to withstand hydrostatic test pressures of 1.5 times the specified design pressures and coupling flanges must be designed to withstand all stresses due to tightening of the bolts. Rubber rings shall generally comply to SABS 974 Class F.

The internal face of the sleeve section of each coupling shall be grit blasted to SIS 055900 Grade Sa3 finish with an anchor pattern profile not exceeding 75 micrometers in depth as determined by micrometer gauge or portable microscope fitted with a calibrated focusing knob. Within four hours of grit blasting provided surfaces are kept dry and clean, one coat of an approved epoxy resin, Copon or similar shall be spray applied, followed by further coats to a dry film thickness of not less than 300 micrometers over the average profile peak.

All other surfaces of coupling components shall be grit-blasted to the same minimum finish and shall receive one coat of an approved protective paint which shall be compatible with materials to be used for the exterior moulding of the coupling in the field. Flexible couplings shall be supplied complete with all necessary bolts, nuts and rubber jointing rings.

PLN 9 Marking of pipes

PLN 9.1 All pipes and specials shall be clearly hand stamped alongside a longitudinal or spiral weld on one end of the pipe with the following.

- a) Grade and thickness of steel
- b) Serial number of the pipe or specials
- c) Nominal diameter
- d) Hydraulic test pressure

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PART 4

PLQ: Corrosion protection of steel pipes and fittings

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PART 4:

PLQ Corrosion protection of pipes and fittings

PLQ 1 Scope

This specification covers various corrosion protection systems for cast iron, steel and stainless steel pipes and fittings for the conveyance of water at ambient temperatures.

PLQ 2 Corrosion protection systems

Materials for pipes and fittings and the applicable corrosion protection systems are specified on the drawings. The following corrosion protection systems have been used:

PLQ 2.1 Buried steel pipelines

- a) Pipe diameter up to 150mm

Pipes shall be hot-dipped galvanized, unless otherwise specified.

After installation the pipe shall be protected with a tape wrapping system as specified in this specification.

- b) Flanged and plain ended pipes diameter larger than 150mm and fittings.

Short pipes, fittings and couplings and smaller diameter pipelines shall be lined and coated with epoxy paint.

After installation the pipes and fittings shall be protected with the pipe wrapping system as specified in this specification.

- c) Welded pipes

Welded pipes shall be epoxy or cement-mortar lined as specified on the drawings.

Welded pipes shall be fusion bonded, medium density polyethylene (MDPE) coated as specified in this specification.

PLQ 2.2 Pipework inside chambers

- a) Pipe diameter up to 150 mm

Pipes and fittings shall be hot-dipped galvanized.

The outside end of fittings cast into the walls of the chamber shall be protected with a tape wrapping system.

- b) Flanged and plain ended pipes with diameter larger than 150mm

Fittings, specials and couplings shall be coated and lined with epoxy paint.

The outside end of the fitting cast into the wall as well as couplings outside the chamber shall be protected with a tape wrapping system.

- c) Chambers in welded pipelines

Pipe fittings and specials cast into the walls of the chamber shall be cement-mortar lined as specified in Particular Specification PLQ2.

Pipes fittings and specials cast into the walls shall be MDPE coated on the section outside the chamber up to the puddle flange or the centre of the wall where a puddle flange is not specified.

The section of the pipe inside the chamber shall be coated with epoxy paint from the puddle flange on the centre of wall as the cast may be and shall be extended around the inside end of the special for 10mm so that the cement-mortar lining overlaps the epoxy coating with 10mm. Puddle flanges shall also be coated with epoxy paint.

Fittings and specials inside the chambers shall be lined and coated with epoxy paint.

PLQ 2.3 Pipe work exposed to sunlight

- a) Pipe diameter up to 150mm

Pipes shall be hot-dipped galvanized.

Pipe surface shall be prepared for re-coatable polyurethane site application.

After installation the pipe shall be painted with re-coatable polyurethane to the Employers colour coding specification.

- b) Flanged and plain ended pipes with diameter larger than 150mm.
Pipes shall be lined with epoxy paint.

Pipes shall be coated in the factory with UV-resistant, multi-purpose epoxy paint.

After installation the pipe shall be painted with re-coatable polyurethane to the Employers colour coding specification.

c) Welded pipes and fittings

Pipes shall have a cement-mortar or epoxy lining as specified on the drawings.

Pipes shall be coated in the factory with UV-resistant, multi-purpose epoxy paint.

After installation all damaged paint at the welding joints shall be removed and the joints re-painted with UV-resistant multi-purpose epoxy paint. After the joints have been repaired, the pipe shall be repainted with re-coatable polyurethane to the Employers colour coding specification.

PLQ 2.4 Exposed pipe work inside buildings

a) Pipe diameter up to 150mm

Pipes shall be hot-dipped galvanized.

Pipe surface shall be prepared for re-coatable polyurethane site application.

After installation the pipe shall be painted with re-coatable polyurethane to the Employers colour coding specification.

b) Flanged and plain ended pipes with diameter larger than 150mm

Pipes, fittings and couplings shall be lined and coated with epoxy paints.

After installation the pipework shall be painted with re-coatable polyurethane to the Employers colour coding specification.

PLQ 2.5 Pipe work inside water retaining structures

All stainless steel pipe work inside water retaining structures and cast into the walls of water retaining structures shall be lined and coated with epoxy paint. Steel pipes to be cast into concrete inside the reservoir and below the reservoir floor shall be lined with epoxy paint. The paint shall be continued around the edges up to 100 mm into the concrete encasing. The remainder of the surface to be cast into the concrete shall be left uncoated.

Uncoated portions of pipes must be protected with a primer, which complies with SABS 926. The primer must be applied so that it has a dry thickness of 50µm.

PLQ 3 Surface preparation

Contractors must submit information on the cleaning methods to be used in meeting the specified requirements. Contractors must further provide the

Engineer with the manufacturer's guarantee that the requirements have been met.

PLQ 3.1 Surface preparation of steel surfaces

All projections, sharp edges, layers that have formed and tool marks must be removed from the surface so that the surface is smooth, and it must be cleaned in accordance with sections 2, 3 and 4 of SABS Code of Practice 064 so that it meets the following requirements:

- (a) A grade of cleanliness of at least Sa 2½ when tested by SABS test method 767.
- (b) A surface profile between 50mm and 90mm when tested by SABS test method 772.
- (c) Free from dust and debris to at least 0,2% when tested by SABS test method 769.

PLQ 3.2 Surface preparation of galvanized surfaces

Surfaces to be coated shall not be passivated.

Galvanized steel surfaces shall be degreased prior to coating, using either a water soluble solvent degreaser in accordance with SABS 1344 and the manufacturer's instructions, or a mild acid-detergent degreasing solution to be approved by the Engineer.

Large areas shall be prepared by sweep-blasting with non-metallic abrasive. Cracking, flaking or any form of de-lamination of the zinc coating due to excessive blast-cleaning shall not be permitted. Removal of zinc by blast-cleaning shall not exceed 10 µm.

Surfaces that cannot be sweep-blasted shall be abraded manually or mechanically with abrasive paper grade 220 or by using non-metallic abrasive pads.

Finally, all dust and debris shall be removed by vacuum-cleaning.

Epoxy primer for galvanised surfaces shall be applied immediately after surface preparation to a minimum dry thickness of 50 µm.

PLQ 3.3 Surface preparation of stainless steel surfaces

Oil and grease contamination shall be removed by:

- steam-cleaning
- an emulsifiable or aqueous detergent, or
- an alkaline cleaning solution.

Stainless steel surfaces shall be blast-cleaned with stainless steel grit or non-metallic abrasive. The use of steel shot and steel or cast iron grit is strictly prohibited.

The grade of cleanliness shall be at least Sa 2½.
Surface profile shall be in the range of 30 to 50µm.

Where blasting is impractical, the surface shall be roughened manually with abrasive paper Grade 220, disc grinders or flapper wheel abrasive pads. In all instances, clean, uncontaminated equipment must be used.

Dust and debris shall be removed by vacuum-cleaning.

PLQ 4 Hot dip galvanizing

Unless otherwise specified, steel pipes up to 150mm dia. shall be hot dip galvanized.

Hot dip galvanizing to be in accordance with SABS 763 – 1988 except that minimum thickness shall be 55micron. Cut ends and small damaged areas shall be repaired by the application of a zinc-rich epoxy (single pack) to SABS 763 (ZINC GALV 1 – Dulux or POLY GALV – Plascon).

Only heavy duty galvanising will be approved and all items to be provided with a SABS approval certificate.

PLQ 5 Epoxy paints

Epoxy paint shall comply to SABS 1217.

The following will be applicable where epoxy paint is specified:

Lining of pipes with nominal diameter larger than 500mm and standard pipe lengths of 9,144 m, 12,192 m and 18,288 m:

Solvent-free epoxy such as “Dulux SF23” and “Carboline 165”, with a minimum dry film thickness of 300 micron and a maximum dry film thickness of 500 micron to be used.

Lining and coating if all other pipes, specials and fittings, except where multi-purpose epoxy coating is specified:

Solvent base epoxy such as “Cupon KSIR 88”, “Carboline 891” and “Sigmaguard EHB”, with a minimum dry film thickness of 300 micron.

Epoxy paint and the repair kit for the repair of epoxy shall be from the same manufacturer.

Edges with epoxy paint shall have a radius of 3mm or 50% of the pipe wall thickness (smaller of two).

Where another type of coating is specified, epoxy paint lining shall continue around pipe edge for each of the following:

- Flanged end

Onto both flange faces, extending for 50mm (min) onto pipe outer wall beyond flange.

- Ends suitable for straight or stepped couplings or flange adapters

Onto pipe outer wall for 250mm (min) from pipe end.

- Ends suitable for flange adapters, incorporating a restraining flange

Onto pipe outer wall from pipe end, up to and including both faces of the restraining flange as well as 50mm (min) beyond the restraining flange.

At joints between epoxy paint and cement mortar lining, the epoxy paint shall continue to 25mm underneath the cement mortar.

The following specification shall be applicable to pipes, specials and fittings to be welded on site:

- In the factory:

Abrasive blast cleaning of complete steel surface to SA 2,5 of ISO 8501-1. Apply epoxy paint to 100 mm from pipe end.

- On site after welding of joint:

Prepare surface with sand paper or wire brush to St 3 of ISO 8501-1 to produce a white metal surface.

Apply epoxy repair kit from to same manufacturer as the factory applied epoxy.

The area applied on site shall be tested for pinholes and thickness.

PLQ 6 UV-resistant multi-purpose epoxy paint

Multi-purpose epoxy shall be of the high build, modified aluminium epoxy mastic type, containing at least 90% solids.

PLQ 7 Re-coatable Polyurethane

The area to be over-coated shall be abraded with abrasive paper Grade 220 to a uniform matt finish.

The surface shall be vacuum-cleaned to remove dust and debris.

Over-coat with a 40 µm minimum layer of re-coatable Polyurethane in accordance with the Employer's colour code.

PLQ 8 Fusion bonded, medium density, Polyethylene coating (MDPE)

An uniform MDPE coating must be obtained by dipping the already prepared and heated pipe into a fluidified bed of MDPE powder which then fuses directly on to the heated surface.

A coating thickness of between 1,8mm to 2,3mm depending on the outside diameter (OD) of the pipe and the service for which it is required must be obtained with the coating extending around the ends of the pipe to underlap the concrete lining for Sintia Joint pipes by a minimum of 25mm.

- D < 508mm : coating thickness = 1,8mm
- 508mm ≤ OD ≤ 762 mm : coating thickness = 2,0mm
- OD > 762mm : coating thickness = 2,3mm

Fusion bonded MDPE coatings shall comply to AS 4321 and must meet the applicable SABS requirements for this type of pipe protection.

PLQ 9 Polyethylene shrink sleeve joint coating system for MDPE coatings

Only shrink sleeves approved by the manufacturer of the MDPE coating shall be allowed for the coating of welded joints in MDPE coated pipes. The cutback of the MDPE coating shall be 100 mm from the pipe ends.

Chip off weld scale and remove grease, then wire brush to remove all loose rust, burnt coating material and dirt to a Standard St 2 of ISO 8501.

Chamfer any raised edges or steps in the existing coating and slightly roughen the coating for 100mm.

Preheat joint area until hot to the hand, approximately 60°C minimum. Remove the protective release plastic from the coated sleeve. Place shrink sleeve over the joint with an overlap of 50mm onto adjacent pipe coating and an overlap of 50 mm at the sleeve ends. Press closure seal in position, centering over the exposed sheet end. Using the heating torch, adjust flame length to approximately 50 cm to produce a yellow flame. Using the yellow portion of the flame, heat the closure evenly until the pattern of the fabric reinforcement is visible. With gloved hand, pat down the closure and smooth any wrinkles by gently working them outward from the centre of the closure.

Using the heating torch, begin at the centre of the sleeve and heat circumferentially around the pipe, using a constant paintbrush motion. Continue heating toward one end of the sleeve, followed by the other. During shrink down, occasionally check adhesive flow with finger. Wrinkles should disappear automatically.

Sleeve is fully shrunk when all the following have occurred.

- There are no cold spots or dimples on the sleeve surface
- Weld bead profile can be seen through the sleeve
- After sleeve is cool, mastic flow is evident on both edges
- The sleeve has fully conformed to the pipe and adjacent coating.

PLQ 10 Denso HT Petrolatum tape-wrapping system

Only “Denso HT Petrolatum” tape-wrapping system shall be used for the wrapping of buried flange and flexible joints and buried galvanized and epoxy paint coated pipes. Measurement for payment shall be per metre of the pipe length.

PLQ 10.1 General

Chip off weld scale and remove grease, then wire brush to remove all loose rust, burnt bitumen/coal tar enamel and dirt to a Standard St 2 of SIS 055900 (Swedish Standard).

Chamfer any raised edges or steps in the existing coating.

Apply “Denso Priming Solution”.

Apply “Denso HT Tape” of appropriate width uniformly in a spiral fashion to give a 55% overlap on the pipe and for not less than 200 mm along the length of the intact factory coating.

Apply uniform tension to ensure the tape is smooth and free from wrinkles. Do not apply excessive tension that will stretch the tape nor insufficient or uneven tension that will give rise to air bubbles and wrinkles.

PLQ 10.2 Flexible couplings and flanges

Apply “Denso Mastic” so as to create a smooth profile suitable for over-wrapping. Wrap a suitable width of “Denso HT Tape” over the coupling. Ensure that there are not air voids under the tape. Apply a double layer of “Denso Layflat” polyethylene sheeting over the whole length of the repair and for 100mm beyond each end of the repair. Tape the ends of the “Layflat” with two complete turns of 100mm wide adhesive “Denso PVC” tape to seal the end.

“Denso” fabric backed mastic blanket can be used as an alternative for “Denso HT Tape”. After priming, pack potential air void areas such as under the bolts with Denso Mastic. Place the mastic Blanket in position and press it into all air voids. Start under the pipe and work upwards. Over wrap the Mastic Blanket with two layers of “Denso Layflat” sheeting and secure the ends with 100mm wide adhesive “Denso” PVC tape.

If the pipe runs through very wet soils it is recommended that “Denso S105 Paste” be used in preference to “Denso Priming Solution”, and the couplings be wrapped with “Denso PVC Self Adhesive Tape” using a 55% overlap in place of the Layflat Sheeting.

PLQ 10.3 Welded joints and straight pipe lengths

After completion of “Denso HT Tape” wrapping and approval by the Engineer, apply 0,3 mm adhesive PVC outer wrap with 55% overlap over the whole length of the wrapping and for 100mm beyond each end.

PLQ 11 Measurement and payment

Corrosion protection and painting shall not be measured separately. The price for corrosion protection and painting shall be deemed to be included in the price for the pipe, fitting or special.

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PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

PART 4:

MECH: Mechanical Specifications

1 Location

- 1.1 Name CORRIDOR SEWER PUMP STATION
1.2 GPS (28°15'49.93"S, 29°06'30.05"E)

2 Function:

- 2.1 Pumping to : Existing Sewer Rising Main

3 General Information

- 3.1 Medium Type : Sewer Effluent

Featuring Equipment

4 Pump Set No.1

No	Description	Existing	Specified	Offered
4.1	Manufacturer	No information	Gorman-Rupp	
4.2	Model	No information	VS3B60-B/FM	
4.3	Quantity	No information	2	
4.4	Duty point, 1x pump (l/s)	No information	34 l/s	
4.5	Duty point, 1x pump (h)	No information	45 m	
4.6	Pump Configuration	No information	Duty-Standby	
4.7	Pump type	No information	Self-priming, solids handling, centrifugal type	
4.8	Seal type	No information	Cartridge Type, Mechanical, Oil-Lubricated, Double Floating, Self-Aligning	
4.9	Shaft seal	No information	Rubber oil seal	
4.10	Casings	No information	Gray Iron 30	
4.11	Impeller material	No information	Ductile Iron 65-45-12	
4.12	Impeller washer material	No information	Standard plated steel	
4.13	Impeller screw material	No information	Standard plated steel	
4.14	Bearing frame	No information	Not applicable	
4.15	Shaft material	No information	Stainless Steel 17-4 PH	
4.16	Shaft sleeve material	No information	Alloy Steel 4130	

4.17	Fastener material	No information	Standard plated steel	
4.18	Mechanical seal material	No information	Silicon Carbide	
4.19	Pump & Motor Base-plate material	No information	Galvanized mild steel	

5 Motor No.1

No	Description	Existing	Specified	Offered
5.1	Motor manufacturer	No information	WEG	
5.2	Motor model	No information	37kW, 4-pole, I.E.3, 3-Phase	
5.3	Motor Quantity	No information	1	
5.4	Motor Size (kW)	No information	37	
5.5	Motor rotation speed (rpm/r/min)	No information	1480	
5.6	Motor type	No information	Induction	
5.7	Motor efficiency class (IE)	No information	3	
5.8	Motor insulation class	No information	H	
5.9	Motor ingress rating (IP)	No information	66	
5.10	Motor load factor at duty point (%)	No information	73%	
5.11	Motor thermal protection	No information	Thermistors	
5.12	Motor heater	No information	None	

1 Location

- 1.1 Name INTABAZWE SEWER PUMP STATION
1.2 GPS (28°16'5.00"S, 29° 5'12.25"E)

2 Function:

- 2.1 Pumping to : Existing Sewer Rising Main

3 General Information

- 3.1 Medium Type : Sewer Effluent

Featuring Equipment

4 Pump Set No.1

No	Description	Existing	Specified	Offered
4.1	Manufacturer	No information	Gorman-Rupp	
4.2	Model	No information	T10A3S-B	
4.3	Quantity	No information	3	
4.4	Duty point, 1x pump (l/s)	No information	160 l/s	
4.5	Duty point, 1x pump (h)	No information	24.7 m	
4.6	Pump Configuration	No information	Duty-Duty-Standby	
4.7	Pump type	No information	Self-priming, solids handling, centrifugal type	
4.8	Seal type	No information	Cartridge Type, Mechanical, Oil-Lubricated, Double Floating, Self-Aligning	
4.9	Shaft seal	No information	Rubber oil seal	
4.10	Casings	No information	Gray Iron 30	
4.11	Impeller material	No information	Ductile Iron 65-45-12	
4.12	Impeller washer material	No information	Standard plated steel	
4.13	Impeller screw material	No information	Standard plated steel	
4.14	Bearing frame	No information	Not applicable	
4.15	Shaft material	No information	Stainless Steel 17-4 PH	
4.16	Shaft sleeve material	No information	Alloy Steel 4130	
4.17	Fastener material	No information	Standard plated steel	
4.18	Mechanical seal material	No information	Silicon Carbide	
4.19	Pump & Motor Base-plate material	No information	Galvanized mild steel	

5 Motor No.1

No	Description	Existing	Specified	Offered
5.1	Motor manufacturer	No information	WEG	
5.2	Motor model	No information	75kW, 4-pole, I.E.3, 3-Phase	
5.3	Motor Quantity	No information	3	
5.4	Motor Size (kW)	No information	75	
5.5	Motor rotation speed (rpm/r/min)	No information	1480	
5.6	Motor type	No information	Induction	
5.7	Motor efficiency class (IE)	No information	3	
5.8	Motor insulation class	No information	H	
5.9	Motor ingress rating (IP)	No information	66	
5.10	Motor load factor at duty point (%)	No information	73%	
5.11	Motor thermal protection	No information	Thermistors	
5.12	Motor heater	No information	None	

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PART 6:

ELEC: Electrical Specifications

This section of the contract covers the related design, supply, delivery, installation, putting into satisfactory operation, testing and maintenance during the defects liability period of the electrical installation for the works consisting of new Motor Control Centres (MCC), cables and all electrical, control and instrumentation equipment necessary to complete the installation of all water pump stations in full working order. Electric motors must be provided as part of the relevant driven equipment in the Mechanical Project Specification of this document.

All equipment and work carried out must be in accordance with the particular specification unless stated otherwise in this project specification. Particular attention must be paid to specific clauses stipulated in the following paragraphs.

Control parameter settings given are provisional, and it will be the Contractor's responsibility to verify and adjust these settings in accordance with the site and system specific conditions, to be verified with the Engineer prior to and during commissioning. Provision must be made in the price for monitoring of parameters and adjustment to optimise the system operation and ensure operation as per the intent of the specification.

These sections must be read in conjunction with the associated mechanical, process and civil sections to form a holistic picture and understanding of the Employer's requirements.

Note that the final offer, under this section, must be fully aligned in terms of scope with the final mechanical and process designs and offers.

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SEWER PUMP STATION INTABAZWE CORRIDOR**

C3.3 Drawings

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C3.3.2	Drawing Register	C 3-3-2

C3.3 DRAWINGS

C3.3.1 GENERAL INFORMATION PERTAINING TO THE DRAWINGS

The design drawings that are to be found bound into the project document, are based on preliminary information and are to be used for tender purposes only.

Any information in the possession of the contractor that is required by the resident engineer to complete as-built drawings, must be supplied to the resident engineer before a certificate of completion will be issued.

Only figured dimensions must be used and drawings must not be scaled unless required by the engineer. The engineer will supply any figured dimensions that may have been omitted from the drawings.

C3.3.2 DRAWING REGISTER

The following drawings bound in this document are applicable for this contract:

Drawing number	Drawing description
ND08-G-NAMEBOARD-001	CONTRACT NAME BOARD
ND08-C-INTA PS-MODS-001	INTABAZWE CORRIDOR SEWER PUMP STATION: CIVIL AND MECHANICAL MODIFICATIONS DETAILS
ND08-S-BEDDING-001	TRENCH BEDDING TYPICAL DETAILS
ND08-S-BENCHING-001	BENCHING AND MANHOLE TYPICAL DETAILS

C3.3.3 ABBREVIATIONS

SHORT KEY	DESCRIPTION
G	GENERAL DRAWINGS
C	CIVIL DRAWINGS
W	WATER DRAWINGS
S	SEWER DRAWINGS
SW	STORMWATER DRAWINGS
ST	STRUCTURAL DRAWINGS
M	MECHANICAL DRAWINGS
E	ELECTRICAL DRAWINGS

SHORT KEY	DESCRIPTION
LAY	LAYOUT
MNG	MANGAUNG
BGB	BLUEGUM BOSCH
PBG	PABALLONG
BS	BENDING SCHEDULE

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C3.4 HIV/AIDS requirements

CONTENTS

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C3.4.2	Definitions and Abbreviations	C 3-4-2
C3.4.3	Basic Method Requirement	C 3-4-2
C3.4.4	HIV/ AIDS Awareness Education and Training	C 3-4-4
C3.4.5	Providing workers with access to condoms	C 3-4-6
C3.4.6	Ensuring access to HIV / AIDS testing and Counselling facilities and treatment of sexually Transmitted infections (STI)	C 3-4-6
C3.4.7	Appointment of an HIV/AIDS Awareness Champion	C 3-4-7
C3.4.8	Monitoring	C 3-4-7
SCHEDULES		
Schedule A	HIV / AIDS programme: site checklist	C 3-4-8
Schedule B	HIV / AIDS awareness programme: service provider report	C 3-4-10
Schedule C	Contractor HIV / AIDS programme report	C 3-4-13

3.4 HIV/AIDS requirements

C3.4.1 Scope

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers.
- Informing Workers of their rights with regard to HIV/AIDS in the workplace.
- Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices

C3.4.2 Definitions and abbreviations

a) Definitions

Service Provider	The natural or juristic person recognised and approved by the Department of Public Works as a specialist in conducting HIV/AIDS awareness programmes.
Service Provider Workshop Plan	A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent
Worker	Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in total.

b) Abbreviations

HIV	:	Human Immunodeficiency Virus
AIDS	:	Acquired Immune Deficiency Syndrome
STI	:	Sexually Transmitted Infection

C3.4.3 Basic method requirement

The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- Number of Workers and Sub-contractors on site
- When new Workers or Sub-contractors will join the construction project
- Duration of Workers and Sub-contractors on site
- How the maximum number of Workers can be targeted with workshops
- How the Contractor prefers workshops to be scheduled, e.g. three hourly sessions per Worker, or one 2.5 hour workshop per Worker
- Profile of Workers, including educational level, age and gender (if available)
- Preferred time of day or month to conduct workshops
- A Gantt chart reflecting the construction programme, for scheduling of workshops
- Suitable venues for workshops

The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date. After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training

The Service Provider Workshop Plan shall address, but will not be limited to the following:

- The nature of the disease;
- How it is transmitted;
- Safe sexual behaviour

- Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- Attitudes towards other people with HIV/AIDS;
- Rights of the Worker in the workplace;
- How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
- How the Service Provider will support the Awareness Champion;
- Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- How the workshops will be presented, including frequency and duration;
- How the workshops will fit in with the construction programme;
- How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- How the video will be used;
- How the Service Provider will elicit maximum participation from the Workers;
- A questions and answers slot (interactive session)

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated

C3.4.4 HIV/ AIDS awareness education and training

a) Workshops

The Contractor shall ensure that all Workers attend the workshops. The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the Department of Public Works, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops

b) Recommended practice

b.1) Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan

Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a following session

b.2) Service Providers

A database of recommended Service Providers is available from all Regional Offices of the Department of Public Works

c) HIV/AIDS specific learning outcomes and assessment criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met:

c.1) Unit 1: The nature of HIV/AIDS

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS

Assessment Criteria:

1. Define and describe HIV and AIDS
2. List and describe the progression of HIV/AIDS

c.2) Unit 2: Transmission of the HI virus

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognize how HIV/AIDS is transmitted and how it is not transmitted

Assessment Criteria:

1. Record in what bodily fluids the HI virus can be found
2. Describe how HIV/AIDS can be transmitted
3. Demonstrate the ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

c.3) Unit 3: HIV/AIDS preventative measures

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus from entering the bloodstream:

Assessment Criteria:

1. Report on how to minimise the risk of HIV/AIDS infection
2. Report on precautions that can be taken to prevent HIV/AIDS infection
3. Explain or demonstrate how to use a male and female condom
4. List the factors that could jeopardize the safety of condoms provided against HIV/AIDS transmission

c.4) Unit 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling

Assessment Criteria:

1. Describe methods of testing for HIV/AIDS infection
2. Report on why voluntary testing is important
3. Report on why pre- and post-test counselling is important

c.5) Unit 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognize the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS

Assessment Criteria:

1. List and describe ways to manage HIV/AIDS
2. Describe nutritional needs of people living with HIV/AIDS
3. Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS
4. Explain the need for counselling and support to people living with HIV/AIDS

c.6) Unit 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people

Assessment Criteria:

1. Discuss anti-retroviral therapy
2. List methods of treatment to prevent HIV/AIDS transmission from mother-to-child transfer
3. Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS
4. Describe post exposure prophylactics

c.7) Unit 7: The rights and responsibilities of Workers in the workplace with regard to HIV/AIDS

After studying and understanding this unit, the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way

Assessment Criteria:

1. Discuss the rights of a person living with HIV/AIDS in the workplace
2. Discuss the responsibilities of a person living with HIV/AIDS in the workplace
3. Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important

d) Displaying of plastic laminated posters and distribution of information booklets

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Public Works

The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds

The posters on display must always be intact, clear, and readable

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site.

C3.4.5 Providing workers with access to condoms

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds

C3.4.6 Ensuring access to HIV/AIDS testing and counselling facilities and treatment of Sexually Transmitted Infections (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

C3.4.7 Appointment of an HIV/AIDS awareness champion

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads, and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available, and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

The Awareness Champion shall be responsible for:

- a) Liaising with the Service Provider on organising awareness workshops;
- b) Filling condom dispensers and monitoring condom distribution;

- c) Handing out information booklets;
- d) Placing and maintaining posters

C3.4.8 Monitoring

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent. The attached SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent

The attached SERVICE PROVIDER REPORT (SCHEDULE B) shall be completed and submitted on a monthly basis to the Department's Project Manager, through the Representative/Agent

The attached CONTRACTOR HIV/AIDS PROGRAMME REPORT (SCHEDULE C), a close out programme report, shall be completed by the Contractor at the end of the contract

SCHEDULE A

HIV/AIDS PROGRAMME: SITE CHECKLIST

When did construction commence

Name of Departmental Project Manager

Please refer to HIV/AIDS Programme activities during the reporting period

DATE	PI	PI	PI	PI	PI	PI
Programme implemented within 14 days of site handover						
Awareness champion on site						
HIV/AIDS awareness service provider report						
Male condom dispenser						
Sufficient male condoms available						
Male condom dispenser in a highly trafficked area						
Female condom dispenser						
Sufficient female condoms available						
Female condom dispenser in a highly trafficked area						
All four types of posters displayed						
Posters in a good condition						
Posters in a highly trafficked area						
Posters displayed on local support services: clinic & VCT centre						
Support service poster/s in highly trafficked area						
Support service poster/s in a good condition						
Workers on payroll (at PI)						
Sub-Contractors who will be on site for longer than 30 days (at PI)						
Workshop attendees						
Number of workshops held						
Scheduled workshops according to approved workshop plan						
Booklets distributed						
Male condoms distributed						
Female condoms distributed						
..... Representative/Agent						
..... Contractor						

Date of progress inspection (dd/mm/yy)

.....

Reporting period: (dd/mm/yy)to (dd/mm/yy)
eviations from HIV/AIDS awareness programme plan:

Corrective actions

--

Corrective actions

--

.....
Representative/Agent

.....
Departmental Project Manager

.....
Date

.....
Date

SCHEDULE B

HIV/AIDS AWARENESS PROGRAMME: SERVICE PROVIDER REPORT

Reporting period: (dd/mm/yy) to (dd/mm/yy)

Number of workshops conducted in reporting period

Number of scheduled workshops according to approved workshop plan

Deviations from workshop plan:

State reasons for deviating from workshop plan:

Corrective actions:

.....
Representative/Agent

.....
Departmental Project Manager

.....
Date

.....
Date

HIV/AIDS AWARENESS PROGRAMME : WORKSHOP CONTENT ADDRESSED

Fill in the applicable information with regard to each workshop conducted																												
DATE	W/S				W/S				W/S				W/S				W/S				W/S							
	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M
Content of work shop: (Mark the content included)																												
SLO1																												
SLO2																												
SLO3																												
SLO4																												
SLO5																												
SLO6																												
SLO7																												
HIV/AIDS in construction video																												
Indicate the duration of the workshop in hours																												
Total number of Workers																												
Indicate workshop venue																												

HIV/AIDS AWARENESS PROGRAMME: ATTENDANCE REGISTER

Fill in your name and indicate attendance by ticking the appropriate date

[illegible]

SCHEDULE C

CONTRACTOR HIV/AIDS PROGRAMME REPORT

Project name

Project Location

Contract value of project (R)

Department of Public Works Project Manager

HIV/AIDS Programme duration: (dd/mm/yy)to (dd/mm/yy)

AWARENESS MATERIAL

Describe location of posters displayed during the programme

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

Comments on posters

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

Indicate total number of booklets distributed

Comments on booklets
.....

CONDOMS

Indicate total number of male condoms distributed

Indicate total number of female condoms distributed

Describe where male condom dispenser was placed

Describe where female condom dispenser was placed

HIV/AIDS WORKSHOPS

Indicate the total number of HIV/AIDS workshops conducted

Indicate the duration of workshops

Indicate the total number of Workers that participated in the HIV/AIDS workshops

Indicate the total number of Workers that were exposed to the video on HIV/AIDS in the Construction Industry

Comments on HIV/AIDS workshops on site

.....

.....

.....

GENERAL

Briefly describe programme activities and satisfaction with outcome

.....

.....

.....

Additional comments, suggestions, or needs with regard to the HIV/AIDS awareness programmes on site.....

.....

.....

.....

Please indicate if your company has a formal HIV/AIDS policy focussing on HIV/AIDS awareness raising and care and support of HIV/AIDS Workers

Yes	No	Currently developing one
-----	----	--------------------------

Please indicate if, to your knowledge, you have lost any workers during the duration of the project to HIV/AIDS related sicknesses. One or more of the following might indicate an HIV/AIDS related death:

Excessive weight loss
Reactive TB
Hair loss
Severe tiredness

Coughing or chest pain
Pain when swallowing
Persistent fever
Diarrhoea

Vomiting
Meningitis
Memory loss
Pneumonia

Number of HIV/AIDS-related deaths

.....
Contractor

.....
Date

.....
Departmental Project Manager

.....
Date

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER
PUMP STATION INTABAZWE CORRIDOR**

C3.5 Occupational Health and Safety

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MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR

PART C3.5.1

Construction Health and Safety Specifications

Section 1: Introduction

1.1 Scope of Health and Safety Specification Document

The health and safety specifications pertaining to this project cover the subjects contained in the index and are intended to outline the normal as well as any special requirements of the client pertaining to the construction health and safety matters applicable to the project.

The stipulations in this specification, as well as those contained in all other documentation pertaining to the project, including contract documentation and technical specifications shall not be interpreted in any way whatsoever, to countermand or nullify any stipulation of the act, regulations and safety standards which are promulgated under, or incorporated into the OHS Act, 85/93.

1.2 Preamble

This “health and safety specifications” document is governed by the occupational health and safety act, 1993 (act no 85 of 1993), hereinafter referred to as the act, with specific reference to construction regulation 5(1) (a) and 5(1) (b). Notwithstanding this, cognizance should be taken of the fact that no single act or its set of regulations can be read in isolation.

Included in these specifications is set rules to assist the principal contractor, contractors (sub-contractors) and client of the project in controlling and managing construction health and safety issues on the construction site, as stipulated in the OHS Act

The specifications and rules do not relieve the principal contractor, contractors (sub-contractors) or their employees from any legal obligation under the requirements of the “basic conditions of employment act” or the “occupational health and safety act”.

The specifications and rules will apply for the duration of the project. Should the principal contractor or contractors (sub-contractors) not comply, it will be deemed as a breach of contract.

The principal contractor will carry full responsibility and accountability regarding the adherence to any health and safety issues when contractors (sub-contractors) are used to carry out any construction work on the project.

It must be noted that the client may stop any contractor from executing construction work, which is not in accordance with the client's health and safety specifications or rules for the project or which poses a threat to the health and safety of any person.

1.3 Purpose

The purpose of this specification is to brief the principal contractor and contractors on the significant safety aspects of the project. It provides information and requirements on inter alias:

- a) Safety considerations affecting the site and its environment.
- b) Health and safety aspects of the associated structures and equipment.
- c) Submissions on health and safety matters.
- d) The principal contractor's health and safety plan.

Section 2: General Requirements

2.1 Definitions

Important definitions in the act and regulations pertaining to this specification document are hereby extracted:

“purpose of the act” to provide for the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

“agent” means competent person who acts as a representative for a client;

“angle of repose” means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on the surface, rather than sliding or crumbling away

“bulk mixing plant” means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

“client” means any person for whom construction work is being performed;

“competent person” means a person who-

a) has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: provided that where appropriate qualifications and training are registered in terms of the provisions of the national qualification framework act, 2000 (act no. 67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and

(b) is familiar with the act and with the applicable regulations made under the act;

“construction manager” means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

“construction site” means a work place where construction work is being performed;

construction supervisor” means a competent person responsible for supervising construction activities on a construction site;

“construction vehicle” means a vehicle use as a means of conveyance for transporting persons or material, or persons and material, on and off the construction site for the purposes of performing construction work.

“construction work permit” means a document issued in term of regulation 3 (Construction Regulation 2014)

“construction work” means any work in connection with:

(a) the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or

(b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

“contractor” means an employer who performs construction work;

“demolition work” means a method to dismantle, wreck, break, pull down or knock down of a structure or part thereof by way of manual labour, machinery, or the use of explosives;

“excavation work” means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

“explosive actuated fastening device” means a tool that is activated by an explosive charge and that is used for driving bolts, nails and similar objects for the purpose of providing fixing;

“fall arrest equipment” means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines or physical equipment such as guardrails, screens, barricades, anchorages or similar equipment;

“fall protection plan” means a documented plan, which includes and provides for-

- (a) all risks relating to working from a fall risk position, considering the nature of work undertaken;
- (b) the procedures and methods to be applied in order to eliminate the risk of falling; and
- (c) a rescue plan and procedures;

“fall risk” means any potential exposure to falling either from, off or into;

“health and safety file” means a file, or other record containing the information in writing required by these regulations;

“health and safety plan” means a site, activity or project specific documented plan in accordance with the client’s health and safety specification;

“health and safety specification” means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;

“material hoist” means a hoist used to lower or raise material and equipment, excluding passengers;

“medical certificate of fitness” means a certificate contemplated in construction regulation 7(8);

“mobile plant” means any machinery, appliance or other similar device that is able to move independently, and is used for the purpose of performing construction work on a construction site;

“national building regulations” means the national building regulations made under the national building regulations and building standards act, 1977 (act no. 103 of 1977), and promulgated by government notice no r. 2378 of 30 July 1990, as amended by government notices no’s r. 432 of 8 march 1991, r. 919 of 30 July 1999 and r. 547 of 30 may 2008;

“person day” means one normal working shift of carrying out construction work by a person on a construction site;

“principal contractor” means an employer appointed by the client to perform construction work;

“scaffold” means a temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

“shoring” means a system used to support the sides of an excavation and which is intended to and prevent the cave-in or the collapse of the sides of an excavation;

“structure” means-

- (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, bulk mixing plant, 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 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 construction work which includes installation, commissioning, decommissioning or dismantling and where any construction work involves a risk of a person falling;

“suspended platform” means a working platform suspended from supports by means of one or more separate ropes from each support;

“temporary works” means any false work, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during constructing work;

“the act” means the occupational health and safety act, 1993 (act no. 85 of 1993)

2.2 Employer

- 2.2.1 The employer to appoint the contractor after the bid evaluation process has been concluded.
- 2.2.2 The employer will take reasonable steps to ensure that the contractor’s health and safety plan is implemented and maintained. The steps taken will include periodic audits at intervals of at least once every 30 days.
- 2.2.3 The employer or his agent will stop the contractor from executing construction work should the contractor at any stage in the execution of the works:

- a) Fail to implement or maintain his health and safety plan;
- b) Execute construction work which is not in accordance with his health and safety plan or the Client's health and safety specifications; or
- c) Act in any way which may pose a threat to the health and safety of persons.

2.3 Principal contractor

- 2.3.1 The principal contractor shall accept the appointment under the terms and conditions of contract. The principal contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the department of labour of the intended construction work in terms of regulation 4 of the construction regulation. The principal contractor shall submit the notification in writing prior to commencement of work.
- 2.3.2 The principal contractor shall ensure that he is fully conversant with the requirements of the specification. The specification is not intended to supersede the act nor the construction regulations. Those sections of the act and the construction regulations which apply to the scope of work to be performed by the principal contractor in terms of this contract continue to be a legal requirement of the principal contractor.
- 2.3.3 The principal contractor shall provide and demonstrate to the employer a suitable and sufficiently documented health and safety plan based on this specification, the act and the construction regulations, which shall be applied from the date of commencement of and for the duration of or execution of the works.
- 2.3.4 The principal contractor shall provide proof of his registration and good standing with the compensation fund or with a licensed compensation insurer prior to commencement with the works.
- 2.3.5 The principal contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the act and construction regulations.
- 2.3.6 The principal contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the act and construction regulations.
- 2.3.7 The principal contractor shall ensure that a copy of his health and safety plan is available on request to the employer, an inspector, employee or sub-contractor.
- 2.3.8 The principal contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this specification, the act and the construction regulations, is opened and kept on site and made available to the employer or inspector upon request. Upon completion of the works, the principal contractor shall hand over a consolidated health and safety file to the employer.

- 2.3.9 Ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner.

Section 3: Construction Health and Safety Plan

3.1 General

The principal contractor has to demonstrate to the client that it has developed a suitable and sufficiently documented construction health and safety plan for the specific project appointed, as well as the necessary competencies, experience and resources to perform the construction work safely.

3.2 Contents of the Construction Health and Safety Plan

The health and safety management program should at least provide a detailed overview of the following matters, not limited to:

- a) Structure and organization of OHS Act responsibilities and appointments
- b) Management of the project's construction health and safety hazards and risks.
- c) Communication of the health and safety management program.
- d) Program for construction health and safety internal audits and inspections.
- e) Program for construction health and safety investigations regarding incidents/accidents.
- f) Program for management of emergency situations.
- g) Program for management of day-to-day activities, including data capturing.

3.3 Structures and Organization of OHS Act Responsibilities and Appointment

3.3.1 Contractor's Construction Safety Officer

Before commencing work, the contractor shall designate a competent construction safety officer (CHSO) who shall be acceptable to the agent to represent and act for the contractor, registration with the SACPCMP is required.

The contractor shall inform the agent in writing of the name and address of the contractor's CHSO and of any subsequent changes in the name and address of the officer, together with the scope and limitations of the CHSO's authority to act for the contractor.

The contractor's CHSO shall make available to the employer a telephone number at which the CHSO can be contacted at any time in the event of an emergency involving any of the contractor's employees, or other persons at the works.

3.3.2 Overall Supervision and Responsibility for Construction Health and Safety

The client and/or its agent on its behalf to ensure that the principal contractor, appointed in terms of construction regulation 5(1) (k), implements and maintains the agreed and approved H&S Plan. Failure on the part of the client or agent to comply with this requirement will not relieve the principal contractor from any one or more of his/her duties under the act and regulations.

The Chief Executive Officer of the principal contractor in terms of section 16(1) of the Act to ensure that the employer (as defined in the act) complies with the act.

All OHS Act (85/1993), section 16 (2) appointee/s as detailed in his/her/their respective appointment forms to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal contractor to become part of site records (health & safety file).

The construction manager and assistant construction manager appointed in terms of construction regulation 8 to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal contractor to become part of site records (health & safety file).

All health and safety representatives (she-reps) shall act and report as per section 18 of the act.

3.3.3 Specific Supervision Responsibilities for Construction Health and Safety

Several appointments or designations of responsible and/or competent people in specific areas of construction work are required by the act and regulations. The appointments must be in writing and competency of appointees must be available on the health and safety file.

3.4 Communication of the Health and Safety Management Program

The communication principles to be applied should cover the following:

- a) Construction health and safety goals for the project and arrangements for monitoring and reviewing health and safety performance.
- b) Arrangements for:
 - Regular liaison between stake holders on site; and
 - Consultation with the workforce.
- c) selection and control of contractors (sub-contractors)

- d) The exchange of construction health and safety information between all stake holders (client, contractors, sub-contractors, designers, etc.). This will include the following;
- Site security;
 - Site induction, onsite training;
 - Site facilities, e.g. Sanitation
 - First-aid facilities;
 - Reporting and investigation of accidents and incidents;
 - The production and approval of risk assessments and method statements ;
 - Site rules; and
 - Fire and emergency procedures.
- e) Reporting to the client, i.e. results and action of construction health and safety inspection, incident investigations and minutes of safety committee meetings.
- f) Reporting of incidents to the department of labour and compensation insurer where appropriate.

3.5 Construction Health and Safety Internal Audits and Inspections

The client and/or its agent on the client's behalf will be conducting periodic audits at times agreed with the principal contractor. This audit will monitor and ensure that the principal contractor has implemented, adhering to and is maintain the agreed and approved health and safety plan. Non – conformances will be highlighted for ratification to endure that the client is not unduly exposed regarding the requirements as stipulated by the OHS Act.

A representative and/or the relevant health and safety representative(s) of the principal contractor must accompany the client and/or it's agent on its behalf on all audits and inspections.

The principal contractor shall conduct his/her own inspections/internal audits at regular intervals. Copies of these inspections/internal audits must be handed to the client and/or its agent.

Copies of health and safety committee meeting minutes must be available to the client and/or its agent, reflecting recommendations made by the committee to the principal contractor for reference purposes.

3.6 Construction Health and Safety Incident/Accident Investigations and Reporting

The principal contractor shall report all incidents where an employee is injured on duty to the extent that the incident caused the following conditions:

- a) Fatal
- b) Unconscious
- c) Loses a limb or part of
- d) Becomes ill
- e) Permanent physical defect

The principal contractor shall report all investigations regarding incidents, where:

- a) Major incident (safety, health or environmental) occurred
- b) Health or safety of any person was endangered.
- c) Hazardous/danger substance was spilled
- d) Uncontrolled release of any substance under pressure occurred
- e) Machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects.
- f) Uncontrolled running of machinery

3.7 Construction Health and Safety Training

The contents and syllabi of all training required by the act and regulations including any other related or relevant training as required must be made available to the client if so required.

3.7.1 Construction Health and Safety Induction Training

All employees of the principal and any other contractor (sub –contractor) must be in possession of proof of construction health and safety induction training. This training will include:

- Risk identification
- Safe work procedures (SWP)
- Personal protective equipment (PPE) the use and the maintenance thereof
- Health and safety outside the workplace
- Legal impact of health and safety matters
- Introduction to the” workmen’s compensation act” (COIDA).
- Site security
- Sanitation facilities
- First aid facilities
- Fire and emergency procedures
- Roll of health and safety representatives and the selection of them
- Working hours and general working conditions
- Incident reporting and procedures
- Incident investigation and procedures

3.7.2 Other Training

All employees in jobs requiring competency in terms of the act and regulations must be in possession of valid proof of training/experience to be accredited for competency.

Specific construction health and safety training requirements for this project includes:

- Construction health and safety representative
- First aider – level 1
- Risk assessor

3.8 Construction Health and Safety Budget (Cost Management)

To enable the client to comply with construction regulation 5(1) (g), the principal contractor has to demonstrate to the client that sufficient provision has been made to implement and managed the health and safety plan of the principle contractor.

A detailed schedule of costs therefore has to be included in the health and safety plan submitted. This includes the following subjects:

3.8.1 Administration

- Compile a health and safety plan
- Notification of construction work
- Proof of good standing with the compensation fund or with a licensed compensation insurer

3.8.2 Construction Health and Safety Management Program

- Appointment of a safety officer(s) (full-time or part-time) and a health and safety representative to assist in the day-to-day management of health and safety measures on site
- Appointment of a health and safety consultant if required
- Other cost relating to the implementation and managing of the health and safety management program

3.8.3 Personal Protective Equipment (PPE)

The principal contractor is required to identify the hazards in workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable, take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.

Where it is not possible to create an absolutely safe and healthy workplace the principal contractor or his appointed sub-contractors is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present to allow them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the principal contractor maintains the said equipment, that he/she instructs and trains the employees in the use of the equipment and ensured that the prescribed equipment is used by the employee/s.

Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition(s), for which the equipment was prescribed but an alternative solution has to be found, that may include relocating the employee.

The principal contractor may not charge any fee for protective equipment prescribed by him or her but may charge for equipment under the following conditions:

- Where the employee requests additional issue in excess of what is prescribed;
- Where the employee has patently abused or neglected the equipment leading to early failure; and
- Where the employee has lost the equipment

All employees shall, as a minimum, be required to wear the following personal protective equipment on the project:

- Head protection. E.g. Hardhats
- Eye protection, e.g. Goggles
- Hearing protection, e.g. Earplugs
- Footwear, e.g. Safety shoes
- Hand protection e.g. Gloves
- Clothing, e.g. Overalls
- Fall protection, e.g. Harnesses (no monkey chain type harness will be allowed on site)
- Inhalation protection, e.g. Dust masks

3.8.4 Employee Site Facilities

Adequate and sufficient facilities shall be provided for employees on site, i.e.

- Protected change room for each gender
- Toilets for each gender (1 toilet for each gender and for every 30 employees)
- Hand wash facility
- Drinking water
- Sanitation station

3.8.5 Health and Safety Signage

Access to the construction site must be controlled. Health and safety signage to inform visiting public, employees, client, etc. must be prominently displayed.

The following signage shall be displayed:

- No unauthorized entry
- Danger: construction work in progress
- Visitors to report to site office
- Site office location
- First-aid facility location and responsible person (include contact details)
- Fire equipment location
- Specific designated areas signage for storage and stacking
- Construction work permit must be displayed at the entrance of the construction site

3.8.6 Health and Safety Notice Board

A health and safety notice board (2000mm x 1000mm) shall be erected on site with the following information displayed:

- Safety notices
- Safety awareness poster
- Site rules

Information regarding emergency contact numbers/details of:

- Doctor
- Ambulance
- Hospital
- Fire brigade
- Safety officer
- Project manager
- First aider
- Site evacuation map and zones

3.8.7 Training

Provision must be made to train employees regarding competency as required by the act and regulations, this will include the following activities:

- Health and safety representative(s)
Every contractor on site with twenty or more employees at the workplace must have a health and safety representative available during normal working hours.

In the case where 50 or more employees are at the workplace, every contractor must have at least one health and safety representative representing every group of 50 employees, available during normal working hours.

- First aider
Every contractor with ten or more employees at the work place shall have a person with a valid certificate of training in first aid – level 1. The first aider shall permanently be available at the workplace.

In the case where 50 or more employees are at the workplace, every contractor must have at least one first aider for every group 50 employees, available permanently.

- Risk assessor
Every contractor performing construction work shall before commencement of any construction work and during construction work, cause a risk assessment to be performed by a competent person.

The training provision should be read in conjunction with the act, construction regulations or any other regulation and safety requirements which were or will be promulgated under the act or incorporated into the act and be in force or come into force during the effective duration of the project.

3.8.8 First Aid Station

Every contractor with five or more employees shall have a first aid box on site. The first aid box shall contain suitable first aid equipment which includes at least the equipment stipulated in the annexure of the general safety regulations.

3.9 Logbooks and Registers

The following logbooks and registers shall be implemented and managed in terms of the Act and Regulations:

3.9.1 Health and Safety Appointments

An organogram depicting the necessary health and safety appointments, as identified in the OHS Act, must be displayed at the site office and notice board, where employees general report for duty.

3.9.2 Logbooks and Registers

The following logging shall be carried out and recorded for the initial start of the project:

- Fire extinguishing
- First aid
- Incident/accident reporting
- Incident/accident investigation
- Portable electrical equipment

- Excavation
- Construction vehicles
- Information signage
- Health and safety inspections by health and safety representatives
- Monthly health and safety committee meeting minutes
- Attendance register
- Induction training
- Toolbox talks

Other logbooks/registers shall be implemented during duration of the project as stipulated by the Act and Regulations.

3.9.3 Record Keeping Responsibilities

Record keeping responsibilities by the principle contractor and contractors have to be implemented for reference and made available on request to an inspector, the client, the client's agent or any authorized person/s.

3.10 Construction Health and Safety File

The Construction health and Safety File must at least contain the following:

- 1) Company OHS Management
 - OHS Company policy statement
 - Contractor's Health and Safety Management Plan/s
 - Letter of Good Standing
 - Notification of Construction Work
- 2) Risk Management
 - Hazard Identification and Risk Assessments
 - Revised Risk Assessments
- 3) Personnel
 - Appointments
 - Competency Certificates
 - Medical Fitness Certificates
 - Identification Documents
- 4) Induction and Communication
 - SHE Induction (General & Individual)
 - Site Rules
 - Toolbox Talks

- 5) Incident and Accident Management
 - Incident Register
 - Incident Reporting Procedures
 - Recording and Investigation of Incidents (Annexure 1)
 - Employers Report of an Accident (W.Cl.2)
 - First/Progress/Final Medical Report/s
- 6) Emergency Preparedness
 - Organogram
 - Emergency telephone numbers
 - Emergency Evacuation Plan
 - Minimum Contents of a First Aid box
 - Dressing Record
- 7) Sub-Contractor
 - Mandatary Agreement and Appointment Letters or Service Level Agreement
 - Monthly Audit/s
- 8) Acts, Regulations and MSDS
 - Occupation Health and Safety Act
 - Construction Regulations
 - COID Act
 - MSDS
- 9) Client
 - Appointment Letter
 - Mandatary Agreement
 - Health and Safety Specifications
 - Baseline Risk Assessments
- 10) Monthly Audit/s
 - Client, external
 - Principal Contractor, internal.
- 11) Inspection Registers

Section 4: Site Specific Health and Safety Requirements

4.1 Designated Danger Areas on Site

All designated danger areas on site shall be demarcated by the contractor with appropriate material and hazard notices posted at strategic locations to prevent unauthorized persons entering the danger area.

Appropriate material to safeguard danger areas includes:

- Safety netting 1m in height
- Timber boards or similar material
- Corrugated sheeting
- Wire fencing

Danger tape will not be allowed to be used as a single demarcation notice. It can only be used as a support of hazard identification with various materials as identified above.

4.2 Road Traffic Ordinance/Transportation Act

The contractor shall ensure that drivers and operators of vehicles, mobile plant and machinery are in possession of valid driver's licenses and competency certificates.

The contractor shall not permit any driver or operator to be in control of a vehicle or mobile plant or machinery at the works while under the influence of alcohol or drugs.

All vehicles of the contractor shall display a name board bearing the Contractors name. Hired vehicles shall bear an identifying sticker.

4.3. Existing Services

Overhead Power Lines

Work on, near or under overhead power lines may only be done by authorized personnel whom possesses the necessary competency. Various precautionary health and safety measures must be in place before commencement of such duties. Risk assessment and hazard identification training must be done prior to such work activities.

Underground services

The Principal Contractor shall contact the representative of existing underground services such as Eskom, Telkom, Maluti-a-Phofung Electrical Department, etc. to assist with the identification of these services. Way-leave's to be obtained from the user or owner of such services before excavation work may commence.

Where instructed by the Client or the Client's Representative services may be relocated, realigned, protected, repaired and/or removed.

4.4 Machine guarding

All power tools and machinery driven by belts, gears, ropes, chains, couplings and similar drives shall be adequately guarded; the contractor shall prohibit the use of any equipment with a damaged, missing or inadequate guard.

4.5 Concrete Mixing Equipment

The Contractor shall use or cause to be using any plant for the storage, gauging and mixing of materials for concrete unless:

- The aggregates of different nominal size are separately stored in such a way that segregation,
- intermixing of different materials and contamination by foreign matter is prevented
- The storage area shall be protected from unauthorized entry by an adequate barrier
- A safe and tidy approach shall be maintained to the aggregate storage area.
- The Contractor shall appoint operators skilled in the operation of the plant.
- On a weekly basis, the plant shall be inspected by a competent person. The inspections shall include a check of the calibration of all the measuring devices and shall be recorded in a logbook, which shall be made available to the Agent on request.

4.6 Excavation/Shoring

The Contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

The face of an excavation shall not be undercut.

All excavations, irrespective of depth, shall be adequately screened off with barrier netting or some other suitable means of warning persons of a hazardous area. Where the depth of the excavation exceeds 2m, a wooden or steel barrier shall also be erected around the excavation, particularly at the end of the working shift and at the start of weekends and holidays to prevent persons from falling into the excavations.

Ensure excavations are inspected by the Excavation Supervisor and the findings documented:

- Daily, prior to the commencement of working activities;
- After blasting operations;
- After the unexpected fall of ground/material;
- After damage to the support/shoring/bracing; and
- After rain.

Adequate shoring, according to the recommendations of SABS 1200, Section D, 1988, shall be provided by the Contractor when necessary. The shoring shall be approved by a competent person before excavation work continues, and shall be done in writing.

A Contractor must ensure where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, steps are taken to ensure to ensure the stability of such building, structure or road and the safety of persons.

Where hard excavation work requires the use of an excavator equipped with a pecker a “happy letter” system shall be implemented:

- a) A survey, prior to commencement of work, of adjoining building and/or structures must be done in writing, with photographic evidence of any defects;
- b) The owner, lessor or user must sign off on the above mentioned survey;
- c) After work has been completed a follow-up inspection of such buildings and/or structures must be done noting any changes in defects recorded during the initial survey.

4.7 Prevention of Uncontrolled Collapse

The contractor shall ensure that:

- 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 of construction work
- No structure or part of a structure is loaded in a manner that would render it unsafe.

4.8 Electrical Equipment and Procedures Used by the Contractor

All electrical equipment shall be regularly inspected by a qualified electrician, who shall be appointed by the Contractor, and the inspections shall be logged. The frequency of inspections shall be determined by the Agent.

A record of the inspections shall be kept and shall be made available to the Agent on request.

The Contractor shall ensure that all his electrical equipment conforms to operational and safety requirements

All earth leakage units shall be tested at intervals of not more than one month and signed for by the qualified electrician.

4.9 Commissioning Safety Precautions

The Contractor shall ensure that wherever repairs, adjustments or any other work are undertaken on any plant or machinery, the power supply is switched off, disconnected or the plant/ machinery disengaged until the work or repairs have been completed.

4.10 Toxic Materials

The Contractor shall exercise all necessary care in the handling of toxic compounds and shall be able to identify the major chemical components in the event of medical treatment being required.

4.11 Hazardous Chemicals and Materials

The Contractor shall provide suitable adequate protective equipment when working in an area where hazardous chemicals and materials are being used.

The Contractor shall ensure that its employees have familiarized themselves with the hazardous material data sheets applicable to the specific site as well as the location of the firefighting equipment, safety showers/baths and other washing facilities, prior to the commencement of work.

4.12 Indemnity of the Employer and His Agents

The BOQ contains a “Mandatory Form of Authority and Agreement in terms of Section 37(1) of the Occupational Health and Safety Act, No. 85 of 1993” which agreement shall be entire into an duly signed by both the Employer and Contractor prior to commencement with work. A copy of the signed agreement shall be included in the Contractor's Health and Safety File.

Any acceptance, approval, check, certificate, consent, examination, inspection, instruction, notice, observation, proposal, request, test or similar act by either the Employer or any of his Agents including lack of disapproval shall not relieve the Contractor from any responsibility he has under the Act and the Construction Regulations, including responsibility for errors, omissions, discrepancies and non-compliance.

4.13 Construction Sanitation and Domestic Facilities

The Contractor shall, depending on the number of workers and the duration of the project, provide at the construction site the following clean and maintained facilities:

- at least one sanitary facility for every 30 workers (one facility for each gender)
- changing facility for each gender
- sheltered eating area
- Clean drinking water

4.14 HIV/Aids Awareness

The Contractor has to implement a HIV/Aids awareness programme for raising awareness' about HIV/Aids through education and information on the nature of the

disease, how it is transmitted, safe sexual behavior, attitudes towards people affected and people living with HIV/Aids, how to live a healthy lifestyle with HIV/Aids, the importance of voluntary testing and counseling, the diagnosis and treatment of Sexually Transmitted infections and the closest Health Service Providers.

Informing workers of their rights with regard to HIV/Aids in the workplace and providing workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices.

4.15 Fire Precaution/Protection

The Contractor shall ensure:

- That all appropriate measures have been taken to avoid the risk of fire on site.
- Sufficient and suitable storage is provided for flammable liquids, solids and gases.
- Smoking is prohibited and notices in this regard are prominently displayed at all places
- containing readily combustible or flammable materials.
- Combustible materials do not accumulate on the construction site.
- Suitable and sufficient fire-extinguishing equipment is placed at strategic locations and that such equipment is maintained in good working order.
- Employees are trained to use firefighting equipment on site.

4.16 Pollution of Environment

The Contractor shall:

- Put measures in place to minimize dust generation
- Prevent the accumulation or littering of empty cement pockets, plastic wrapping/bags, packing materials etc.
- Spillage/discarding of oil, chemicals and diesel into storm water and other drains or into existing or newly dug holes/cavities on site are expressly prohibited.

4.17 Noise mitigation

The Contractor shall:

- Identified tasks where noise levels exceed 85 Db at any one time. All reasonable steps taken to reduce noise levels at the source.
- Hearing protection used where noise levels could not be reduced to below 85 Db.

4.18 Housekeeping

The Contractor shall:

- Implement a waste management program to ensure the removal of all items of scrap/unusable off-cuts/rubble and redundant material at appropriate intervals.

- Ensure that the stacking of construction material is:
 - Stable, on a firm surface/base level
 - Prevent from leaning or collapsing
 - Stacked to make collecting accessible
- Ensure that adequate storage areas are provided and that these areas are free from weeds, litter, etc.

4.19 Electricity

The Contractor shall ensure that the following safety precautions have been implemented for electricity works during the project period:

- a) Electrical distribution boards and earth leakages, site office's;
 - Are color coded/numbered/symbolic sign displayed
 - Area in front is kept clear and unobstructed
 - Are fitted with inside cover plate/openings blanked off/no exposed "live"
 - conductors/terminals/door kept close
 - Switches/circuit breakers are identified
 - Earth leakage protection unit fitted and operating
 - Tested with an instrument. Test results are within 15-30 milliamps aperture/opening/s
 - provided for the plugging in and removal of extension leads without the need to open the door.
 - Apertures and openings used for extension leads to be protected against the elements and especially rain
- b) Electrical installation and wiring (permanent or temporary);
 - Temporary wiring/extension leads in good condition and no bare/exposed wires
 - Earthing continuity/polarity correct cables protected from mechanical damage and moisture
 - Correct loading observed e.g. No beating appliance used from lighting circuit etc.
 - Light fittings/lamp protected from mechanical damage/moisture
 - Cable arrestors in place and used inside plugs
- c) Physical condition of electrical appliances and tools;
 - Insulation/casing in good condition
 - Earth wire connected/intact where not of double insulated design
 - Double insulation mark indicates that no earth wire is to be connected
 - Cord in good condition/no bare wires/secured to machine & plug
 - Plug in good condition, connected correctly and correct polarity

4.20 Site Vehicles, Mobile Plant and Machinery

The Contractor shall ensure:

- That only competent operators will be allowed to operate vehicles plant or machinery that he/she have been allocated to
- That daily inspections are carried out prior to the use of vehicles, plant or machinery
- That record of daily inspections are kept on site
- That written proof of competency of operators is available on site
- That a site speed limit is posted and not exceeded

4.21 Hand Tools

The Contractor shall ensure that hand tools used during the construction period will be of good quality and maintained in good working order.

4.22 Ladders

Every ladder shall be:

- a) Of good construction, sound material and adequate strength and suitable to the purpose for which it is used (e.g. electricians shall use suitable insulated ladders)
- b) Fitted with non-skid devices at the bottom of the stiles or with hooks or similar devices at the tops of the stiles.
- c) Except for extension ladders, no ladder shall be used which is longer than 4.5m and no ladder shall have its reach extended by tying together two or more ladders.
- d) All ladders shall be inspected weekly and a log shall be kept of the inspections.

4.23 Scaffold Design, Erection and Inspection

Scaffold Design, Erection and Inspection to comply with the SANS 10085-1:2004 The Design, Erections, Use and Inspection of Access Scaffolding, i.e.:

4.23.1 Foundations for Scaffolding

The surface on which scaffolding is to be erected shall be approved by a Scaffolding Supervisor. Where doubt exists regarding the bearing capacity of the surface, a detailed investigation shall be carried out and, if necessary, the approval of a professional engineer obtained.

4.23.2 Sole Boards

A sole board shall:

- a) Be of timber that complies
- b) Be of width at least 225mm and suitable in length

- c) Be of thickness at least 32mm, if the scaffold height does not exceed 15m; and
- d) Be of thickness at least 45mm if the scaffold height exceeds 15m.

4.23.3 Base Jacks

- a) Steel base jacks of nominal diameter 38mm shall have:
 - a) A welded base plate as specified, but without the spigot
 - b) An unthreaded length of 150mm or more at the opposite end of the shaft to the base plate
 - c) A safe working load of at least 30kn for axial loading at full extension; and
 - d) If the jack is constructed from tube, a rolled thread

Some lateral loading is to be expected in addition to the axial load, and a safe working load of 1,3Kn for lateral loading at full extension shall be required.

b) Swivel Base Jacks

- a) Base jacks may also be fitted with swivel base plates. In this case the supplier shall provide information regarding safe working loads.

4.23.4 Base Plates

A steel base plate shall:

- a) be of steel that complies with the SANS code
- b) be square, having sides of at least 150mm
- c) be of thickness at least 6mm
- d) have a spigot of length at least 50mm and of diameter not less than 10mm and not more than 20mm fixed centrally on one face.

4.23.5 Standards

Examples of the usage for which each class of scaffolding is suitable are given below:

Class	Example of usage	Maximum number of working platform levels	Maximum platform safe working load Kg/m ²	Maximum spacing of standards (m)	Platform width (excluding inside boards)	
Very light (VL)	Inspection Painting Stone cleaning	4 x VL	80	3	675	1150
Light (L)	Repointing Replacing windows Plastering Insulation	3 x L	160	2.5	900	1150
Medium (M) (General purpose)	New building brickwork Block work	2 x M 1 X VL	240	2	1125	1150
Heavy (H)	Masonry Heavy cladding	1 x H 1 X L 1 X VL	320	1,8	1125	1380

4.23.6 Ledgers

The requirements for the use of ledgers are:

- Ledgers shall be horizontal and secured at right angles to each standard, except the lowest ledgers shall be fixed to sloping ground.
- The lowest level of ledgers or foot ties shall be fixed not more than 300mm above the bottom of the standards.
- Joints in the ledgers shall be staggered by at least one bay in length and shall be located not more than 900mm from a standard.
- Ledgers shall be fixed at vertical spacing not exceeding 2.1m.
- The top ledger shall be fixed at least 1m below the top of a standard.

4.23.7 Ties

The ties used shall be either:

- Of the fixed type which is positively fixed to the structure
- Of the reveal type which relies on friction to provide the means of restraint.

4.23.8 Bracings

Bracing shall:

- Be provided to prevent distortion of scaffolding
- Be arranged in triangular-shaped patterns with connections at a distance not exceeding 300mm from the intersections of vertical and horizontal members.

4.23.9 Use of Couplers

A ledger shall be connected to a standard by means of a double coupler.

4.23.10 Working Platforms

Working platforms for scaffolding shall:

- a) Consist of boards that have minimal gaps between the edges, and that are of approximately equal thickness, and that are so arranged that the ends are in line across the width of the platform.
- b) have all boards tied down and secured
- c) Have guardrails so fixed that its center line is at a height of 900mm above the platform.

4.24 Ergonomic Risks

The Contractor shall ensure that the following ergonomic risks are considered during risk assessments of the project:

- Visual work place – fall from height and tripping over construction material and debris.
- Awkward posture – health complications from unnatural posture due to picking up heavy plant, machinery, construction material and debris.

4.25 Behavioral Risks

The contractor shall ensure that the following behavioral risks are considered during risk assessments of the project:

- a) Man and machine interaction – loose clothing caught in machinery and plant
- b) Workers not wearing issued PPE – disciplinary actions should be implemented if workers are not using their issued PPE.
- c) Using the right tool for the job- Home-made or damaged tools will not be allowed on site.
- d) Alcohol and other drugs – no use of alcohol or any other drug will be allowed on site.

4.26 Continuous Risk Assessment

The purpose of implementing continuous risk assessment as part of the required risk assessment program is to ensure that operational identified hazards and risks will be treated with due diligence.

The following activities must form the basis of continuous risk assessment:

- Safe work procedures
- Method statements
- Internal health and safety inspections

4.26.1 Safe Work Procedures (SWP)

The Contractor must ensure that SWP's for the project address the following elements:

- The work method to be followed to conduct work safely
- Mitigate/eliminate or control workplace risks and hazard
- Responsibilities of competent personnel to implement safety measures
- Identify PPE, if required
- Identify correct equipment/tools/machinery to be used
- Identify training needs
- Reference of relevant registers to be completed
- Set time-table to rectify any non-conformances

4.26.2 Method Statements

Method statements to rectify health and safety non-conformances shall be required from the Contractor during the project period.

Method statements shall be copied to the Client's Health and Safety Agent for evaluation and audit purposes.

4.26.3 Internal Health and Safety Inspections

The Contractor shall conduct internal health and safety inspections on a regular basis. These inspections shall be recorded and be available on the health and safety file.

Section 5: Site Specific Risk Assessment

5.1 Contractors Risk Assessment Requirements

5.1.1 Methodology

Prior to drafting the health and safety plan, and in consideration of the information contained here-in, the contractor shall set up a risk assessment program to identify and determine the scope and details of any risk associated with any hazard at the construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard. This risk assessment and the steps identified will be the basis or point of departure for the health and safety plan.

Due to the wide scope and definition of construction work, every construction activity and site will be different, and circumstances and conditions may change even on a daily/hourly basis. Therefore, due caution is to be taken by the principal contractor when dealing with the identification of hazards and risks.

The risk assessment to be conducted for this project shall be defined as workplace risk assessment. Workplace risk assessment is a set of ongoing management and engineering activities of the project, aimed at ensuring that the health, safety and environmental hazards/risks of the project are identified, understood and minimized to a reasonable, achievable and tolerable level.

The following guide can be helpful to conduct and manage risk assessments:

Step 1: Identifying the current, as well as emerging hazard, risks and/or exposures.

Step 2: Aim to identify major hazards, don't waste time on the minor and detail except if such hazard has the potential to repeat itself on a frequent basis.

Step 3: Involve as many people as possible in the ongoing risk assessment process especially those at risk.

Step 4: Gather all the information and analyze it.

Step 5: Look at what actually could or has occurred including non-routine operations.

Step 6: Use a systematic approach to ensure all hazards are adequately addressed.

Step 7: Assess the risks identified or the risk that occurred by taking into account the effectiveness of current as well as controls under consideration.

Step 8: Ensure the process is practical, realistic, cost and business effective.

Step 9: Always record the assessment in writing including i.e. assumptions, date and why a particular decision has been made.

5.1.2 Contents of the Risk Assessment Program

All risk assessments shall be conducted in terms of an acceptable methodology, prior to commencement of work, according to the provisions of Construction Regulation 9 and should cover at least the following:

- Movement of construction vehicles
- Earth works
- All work near overhead power lines and underground cables
- Locating underground cables/existing services
- Hand excavation of trenches
- Mechanical excavation of trenches
- All work carried out inside trenches, including compacting, pipe laying, backfilling etc.
- Working at heights
- Temporary works (formwork and support work)

- Lifting operations using various cranes (mobile, free standing, etc.)
- Electrical installations
- Housekeeping
- Fire precaution
- Temporary stockpiling and removal of excavated material
- Transporting material
- Storage and stacking of construction material
- Waste management of construction debris and litter
- Demolition work
- Working with hand tools
- Working with portable electrical tools
- All health hazards that can be present during any of the above activities and should include individual dusts,
- Gases, fumes, vapors, noise, extreme temperatures, illumination, vibration and ergonomic hazards due to
- Any of the above activities

The above list is by no means exhaustive and should not be limited to these activities but must cover all activities that forms part of the said construction work. Each activity must be split down to individual tasks and all associated hazards identified and listed in the risk assessment. This ensures that critical tasks and subsequent critical hazards are not missed.

The risk assessment to be included in the health and safety plan must clearly indicate:
The methodology used to conduct the risk assessments.

Breakdown of processes and activities covered

Risk grading anticipated i.e. high, medium or low

Safe work procedures and the communication thereof

All risk assessments are to be conducted by a competent person as appointed. The plan must include a declaration in this regard or the risk assessment must contain the signature(s) of this appointed persons.

Risk assessments are to be communicated to the client's OHS agent prior to commencement of work.

The OHS agent reserves the right to stop any work if such work is not conducted in terms of the recommendations of the risk assessment.

Risk assessments are to cover safety as well as health hazards.

MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND REFURBISHMENT OF SEWER
PUMP STATION INTABAZWE CORRIDOR**

PART C3.5.2

Baseline Risk Assessment

1. Baseline Risk Assessment

1.1 Project Description

Employer: Maluti-A-Phofung
Private Bax X 805
Wistieshoek
9870

Employer's Agent: Mphati & Associates (Pty) Ltd
38 Gedenk Street
Hospitaal Heuwel
Bethlehem
9701

Purpose: The purpose of this project is to upgrade water pump stations located in various towns within the Maluti a- Phofung Local Municipality. This is to ensure effective operation and maintenance of the pump stations.

1.2 Risk Rating Process

Severity		Probability/Frequency (P)		Expo	
(5) Catastrophic	Multiple fatalities Total Damage to tools, equipment, plant and/or surrounding structures	(5) Frequent	Incident can occur daily: Policy Failure	(5) Extensive	80% - 100% of work force Total Damage to tools, equipment, plant and/or surrounding structures
(4) Critical	Fatality or number of disabling injuries Major Damage to tools, equipment, plan and/or surrounding	(4) Regular	Incident can occur weekly: Management Failure	(4) Widespread	60% - 80% of work force Serious Damage to tools, equipment, plant and/or surrounding structures.
(3) Serious	Permanent disability or loss of a limb Substantial Damage to tools, equipment, plant and/or surrounding	(3) Occasional	Incident can occur monthly Supervision Failure	(3) Significant	40% - 60% of work force Damage to tools, equipment, plant and/or surrounding structures
(2) Marginal	Hospitalised for less than 14 days with no disability Medium Damage tools, equipment and/or plant	(2) Uncommon	Incident can occur within six months Procedural failure	(2) Restricted	20% - 40% of work force Damage to tools, equipment and/or plant
(1) Negligible	First aid on site is sufficient Minor Damage to tools and/or equipment	(1) Rare	Incident occur very rarely Personal Failure	(1) Negligible	1% - 20% of work force No Damage to tools and/or equipment
(SxP) E =					
Very Low	1 – 6	Employee			
Low	8 – 15	SHE Management, Employee			
Medium	16 – 30	Site Management, SHE Management, Employee			
High	32 – 60	Employer, Site Management, SHE Management, Employee			
Very High	62 – 125	Client, Employer, Site Management, SHE Management, Employee			

1.3 Hazard Identification and Risk Assessment

Building							
Discipline and Activity	Risk and Hazards	Calculation				Risk Rating	Control Measure
1. Foundation		S	P	E	T		
a) Excavation work, less than 1.5 meters	Collapse of trench walls	4	3	3	36	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work
	Existing service, water pipe burst: flooding excavation trench, saturated trench	3	5	5	45	High	Ascertain location of existing services (site plan) Expose existing services by hand first Protect existing services (concrete cast, identification markers, danger tape, etc.)
	Existing service, electrical cable: electrocution/short	5	5	2	50	High	
	Fall into open excavations – public safety	3	3	2	18	Medium	Barricade with danger netting or fence Post warning signs Illuminate at night
b) Excavation: Haul and Spoil material	Overfill tipper truck: materials loss	3	2	2	12	Low	Supervise loading
	Spoil in undesignated areas: fines or public liability	3	2	5	30	Medium	Designate spoil area Permission and/or authorisation Rehabilitation of spoil areas
c) Backfill and compact using a handheld compactor	Foot injury	3	3	2	18	Medium	Provide PPE (safety boots)
	Vibration cause collapse of trench	4	3	2	24	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work

	Petrol spill when refilling (environmental hazard), causing fire	3	2	2	12	Low	Provide HAZCHEM spill kit Provide fire extinguisher Provide funnel for refilling
d) Soil insecticide: SANS	Health hazard	4	1	1	4	Very Low	Approved Contractor/User MDSD training
e) Concrete work: Concrete delivery	Bump/reverse into structures causing damage	3	5	3	45	High	Accommodate/supervise delivery
f) Concrete work: Formwork and support work	"Kick" effect causing structural damage Injury to personnel Time loss	4	3	5	60	High	Temporary designs to be approved Pre- and post-inspection of temporary works Limiting personnel
g) Concrete work: Steel	Hand injury	2	2	1	4	Very Low	Provide PPE Provide first aider and first aid box
h) Masonry: Brick stacks	Collapse of brick stacks: structural damage or injury of personnel	2	2	2	8	Low	Supervise stacking (3/1 base/height stacking) Designated stacking areas Remove top to bottom
2. Concrete Formwork and Reinforcement	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Reinforcement: Steel delivery	Nuisance Tripp and fall hazard	2	2	1	4	Very Low	Designated stacking areas Supervise delivery
b) Reinforcement: Steel	Sharp edges: Cuts to hands	2	5	2	20	Medium	Designated stacking areas
d) Concrete delivery	Bump/reverse into structures causing damage	3	3	3	27	Medium	Accommodate delivery Supervise delivery
e) Concrete work: Finishing top of	Working at heights: fall risk	4	4	2	32	High	Provide scaffold as per SANS 10085-1 Supervise scaffold work

beams etc.	dropping tools causing serious injury						Prohibit/limit work under scaffold Provide hard hats
f) Concrete work: Surface beds	Power float: fire hazard. Risk of serious injury. Ergonomic discomfort	4	3	2	24	Medium	Maintain power float in good working order, daily inspections Provide fire extinguisher Provide funnel for refilling Provide training
g) Formwork: Materials	Protruding nails causing injury Fire hazards	2	2	1	4	Very Low	Procure, stack and store
h) Formwork at heights	Working at heights: fall risk dropping tools causing serious injury	5	4	4	80	Very High	Provide scaffold as per SANS 10085-1 Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats
i) Support work	Pre-mature removal Risk of collapse	5	3	5	75	Very High	Temporary designs to be approved Pre-and post-cast inspection of support work Written authorisation to cast Written authorisation to remove support work
3. Masonry	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Brickworks	Working at heights: fall risk dropping tools causing serious injury	2	3	4	24	Medium	Provide scaffold as per SANS 10085-1 Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats
b) Brickworks: stacking	Risk of collapse	3	3	3	27	Medium	Supervise stacking (3/1 base/height stacking) Designated stacking areas Remove top to bottom
4. Waterproofing	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Install: Damp-	Ergonomic discomfort	2	2	2	8	Low	Provide basic training on ergonomics

proofing materials to walls and floors							
b) Waterproofing	Fire hazard (gas bottle)	4	5	2	40	High	Designated storage areas Provide fire extinguishers Ensure device is fitted with a regulator
c) Joint sealant	Health hazard (fumes)	2	2	2	8	Low	Well ventilated working areas MSDS training
5. Roof Coverings	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Install: Sheetting etc.	Working at heights: fall risk dropping tools/materials causing serious injury	5	5	4	100	Very High	Provide scaffold as per SANS 10085-1 Provide safe access to working areas Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats Install life line/s Provide safety harnesses Provide accredited working at heights training Medical fitness certificates for employees working at heights
6. Carpentry and Joinery	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Install: Doors, including frames	Defective tools causing hand injuries	2	1	2	4	Very Low	Maintain tools and equipment in good working order
7. Ceilings, Partitions and	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Install: Ceilings, cornices	Working at heights: fall risk dropping tools causing serious injury	3	3	3	27	Medium	Provide scaffold as per SANS 10085-1 Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats

8. Floor Coverings, Wall Linings, etc.	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Install: Vinyl Sheeting (adhesive)	Health hazard (fumes)	2	3	2	12	Low	Well ventilated working areas MSDS training
b) Sealer: Apply	Health hazard (fumes)	2	1	1	2	Very Low	
c) Install: Carpets	Defective tools causing hand injuries	2	2	2	8	Low	Maintain tools and equipment in good working order Daily inspection of tools
9. Ironmongery	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Materials	Nuisance Tripp and fall hazard	2	1	1	2	Very Low	Designated storage areas
b) Install: Hinges, bolts, locks, handles, door closers, bathroom fittings, rails, etc.	Defective tools causing hand injuries	2	2	2	8	Low	Maintain tools and equipment in good working order Daily inspection of tools
10. Structural Steel Work	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Materials	Nuisance Tripp and fall hazard	4	4	3	48	High	Designated stacking and storage areas Supervise delivery
b) Install: Steel trusses, purlins, bracing, steel columns, cladding support, welding, etc.	Working at heights: fall risk dropping tools causing serious injury	5	5	5	125	Very High	Provide scaffold as per SANS 10085-1 Provide safe access to working areas Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats Install life line/s Provide safety harnesses Provide accredited working at heights training Medical fitness certificates for employees working at heights

	Crane operations: collapse Uncontrolled release of load	4	4	5	80	Very high	Provide stable base Competent operator Competent riggers Load test certificates (annually for crane, 6 months for hooks, slings, ropes, etc.) Daily inspection of crane
11. Metal Works	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Materials	Nuisance Tripp and fall hazard	2	2	1	4	Very Low	Designated stacking and storage areas Supervise delivery
b) Install: Door frames, steel roller shutters windows, doors, handrails, balustrades, etc.	Defective tools causing hand injuries	2	2	2	8	Low	Maintain tools and equipment in good working order Daily inspection of tools
c) Welding	Health hazard: permanent eye defect Fire risk Burn risk	5	4	2	40	High	Provide necessary eye protection(welding helmet) Provide welding screen Designated working areas Provide necessary PPE (welding apron and gloves) Provide fire extinguisher Competent welder
12. Plastering	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Screed to concrete, granolithic, internal & external plaster, etc.	Working at heights: fall risk dropping tools causing serious injury	5	4	2	40	High	Provide scaffold as per SANS 10085-1 Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats

-13. Tiling	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Wall tiling and Floor Tiling	Working at heights: fall risk dropping tools causing serious injury	3	2	2	12	Low	Provide scaffold as per SANS 10085-1 Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats
14. Plumbing and Drainage	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Excavation 2m	Collapse of trench walls	4	3	3	36	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work
	Existing service, water pipe burst: Flooding excavation trench, saturated trench walls may	3	5	5	45	High	Ascertain location of existing services (site plan) Expose existing services by hand first Protect existing services (concrete cast, identification markers, danger tape, etc.)
	Existing service, electrical cable: electrocution/short	5	5	2	50	High	
	Fall into open excavations – public safety	3	3	2	18	Medium	Barricade with danger netting or fence Post warning signs Illuminate at night
b) Bedding, laying, backfill	Foot injury	3	3	2	18	Medium	Provide PPE (safety boots)
	Vibration cause collapse of trench	4	3	2	24	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work
	Petrol spill when refilling (environmental hazard), causing fire	3	2	2	12	Low	Provide HAZCHEM spill kit Provide fire extinguisher Provide funnel for refilling
c) Rainwater disposal:	Working at heights:	4	5	2	40	Medium	Provide scaffold as per SANS 10085-1

vertical	fall risk dropping tools causing serious injury						Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats
d) Install: Sanitary fittings, waste unions, traps, valves, pipework, etc. and connecting to sewage	Defective tools causing hand injuries	1	2	1	2	Very Low	Maintain tools and equipment in good working order Daily inspection of tools
15. Glazing	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Install: Panels, mirrors, etc.	Defective tools causing hand injuries	1	1	2	2	Very Low	Maintain tools and equipment in good working order
16. Paintwork	Risk and Hazards	S	P	E	T	Risk Rating	Note/Ref.
a) Paint work	Working at heights: fall risk dropping tools causing serious injury	4	3	2	24	Medium	Provide scaffold as per SANS 10085-1 Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats
External							
1. General Site Works	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Site clearing: Clearing and grubbing	Unauthorised operating of machinery causing structural damage or injury	3	2	2	12	Low	Appoint competent operators Supervise work
b) Excavation Work	Collapse of trench walls	4	3	3	36	Medium	Shoring or bracing Slope to the angle of repose

							Supervising excavation work
	Existing service, water pipe burst: flooding excavation trench, saturated trench walls may	3	5	5	45	High	Ascertain location of existing services (site plan) Expose existing services by hand first Protect existing services (concrete cast, identification markers, danger tape, etc.)
	Existing service, electrical cable: electrocution/short	5	5	2	50	High	
	Fall into open excavations – public safety	3	3	2	18	Medium	Barricade with danger netting or fence Post warning signs Illuminate at night
c) Bulk Excavation: 2m (include hauling and spoiling)	Overfill tipper truck: materials loss	3	2	2	12	Low	Supervise loading
	Spoil in undesignated areas: fines or public liability claims,	3	2	5	30	Medium	Designate spoil area Permission and/or authorisation Rehabilitation of spoil areas
d) Filling: compacted using a roller	Vibration causing structural damage to existing building of structures	3	2	2	12	Low	Pre-inspections and documentation of existing buildings and structures
2. Road, Parking, Paving, etc.	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Excavation: Not exceeding 2m	Collapse of trench walls	4	3	3	36	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work
	Existing service, water pipe burst: flooding excavation trench,	3	5	5	45	High	Ascertain location of existing services (site plan) Expose existing services by hand first Protect existing services (concrete cast,

	collapse						danger tape, etc.)
	Existing service, electrical cable: electrocution/short	5	5	2	50	High	
	Fall into open excavations – public safety	3	3	2	18	Medium	Barricade with danger netting or fence Post warning signs Illuminate at night
b) Filling: compacted using a roller	Vibration causing structural damage to existing building of structures	3	2	2	12	Low	Pre-inspections and documentation of existing buildings and structures
c) Block Paving and Kerbs	Collapse of stacks	3	2	2	12	Low	Designated stacking areas Supervise delivery
d) Block paving	Ergonomic discomfort	2	1	5	10	Low	Provide basic training of ergonomics
e) Kerbs	Heavy loads: back injury	2	1	3	6	Very Low	Engineering control measures (kerb clamp)
3. Fencing	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Excavations, less than 1000mm	Tripp/fall hazard	3	2	2	12	Low	Identify open excavations using danger tape
b) Steel fencing	Defective tools causing hand injuries	4	5	2	40	High	Maintain tools and equipment in good working order
c) Concrete palisade fencing	Heavy loads: back injury	3	4	2	24	Medium	Use of TLB and chain to assist
d) Welding	Health hazard: permanent eye defect Fire risk Burn risk	5	4	2	40	High	Provide necessary eye protection(welding helmet) Provide welding screen Designated working areas Provide necessary PPE (welding apron and gloves)

							Competent welder
4. External Plumbing and Drainage	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Concrete delivery: Storm-water disposal, culverts, wing walls, etc.	Bump/reverse into structures causing damage	3	3	3	27	Medium	Accommodate delivery Supervise delivery
b) Concrete work: Steel binding	Hand injury	2	2	1	4	Very Low	Provide PPE Provide first aider and first aid box
c) Excavations, less than 1000mm	Tripp/fall hazard	3	2	2	12	Low	Identify open excavations using danger tape
d) Compacting (wacker)	Foot injury	3	3	2	18	Medium	Provide PPE (safety boots)
	Vibration cause collapse of trench	4	3	2	24	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work
	Petrol spill when refilling (environmental hazard), causing fire	3	2	2	12	Low	Provide HAZCHEM spill kit Provide fire extinguisher Provide funnel for refilling
e) Steel binding	Hand injury	2	2	1	4	Very Low	Provide PPE Provide first aider and first aid box
f) Materials: Brick stacks and precast concrete pipes	Collapse of stacks Pipes roll	2	3	3	18	Medium	Designated stacking areas Secure pipes Supervise delivery

g) Install: Precast concrete pipes and/or prefabricated manhole	Use of TLB and chain: loss of load causing injury or damage	5	5	3	75	Very High	Load test certificate of chain Competent operator Supervise operation Engineering controls (concrete clamp)
Electrical							
1. Nominated Contractor	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Sub-contractor	Not qualified	5	5	5	125	Very High	Pre-qualification before appointment Approve statutory documentation (LOG, Registration certificates, wireman's license, etc.) Appoint in writing Mandatory Agreement Approve H&S Plan Perform monthly Audits.
2. General Specifications for	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Equipment, materials, cables, etc.	Security risk: Theft	2	2	1	4	Very Low	Provide security Designated storage areas
b) Install: Conduits, Wiring and trunking. Switches, socket outlets, switchgear and switchboards	Working at heights: fall risk dropping tools causing serious injury	3	5	2	30	Medium	Provide scaffold as per SANS 10085-1 Provide safe access to working areas Supervise scaffold work Prohibit/limit work under scaffold Provide hard hats Install life line/s Provide safety harnesses Provide accredited working at heights training

							Medical fitness certificates for employees working at
3. Cables, Termination, Joints and Installation	Risk and Hazards	S	P	E	T	Risk Rating	Control Measure
a) Cables: Excavation (1m) and laying	Tripp/fall hazard	3	2	2	12	Low	Identify open excavations using danger tape
b) Cables: Bedding and backfill	Foot injury	3	3	2	18	Medium	Provide PPE (safety boots)
	Vibration cause collapse of trench	4	3	2	24	Medium	Shoring or bracing Slope to the angle of repose Supervising excavation work
	Petrol spill when refilling (environmental hazard), causing fire	3	2	2	12	Low	Provide HAZCHEM spill kit Provide fire extinguisher Provide funnel for refilling

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C3.6 Environmental Specifications

Below is a list of items that should typically be in place during the construction phase. Note that not all these items are always applicable, and the list should be used as a general guide.

- Stormwater management plan
- Fire management plan
- Firefighting equipment
- Complaints register and procedure for reporting incidents and near misses
- Waste management plan
- General waste receptacles
- Hazardous waste storage
- Oil spill kit
- Drip trays to place underneath stationary vehicles, diesel bowzers, etc.
- Bund wall around large fuel tanks. The bund wall should contain 110% of the total fuel capacity
- Erosion management:
 - Soil nets
 - Reseeding with indigenous plant species
- Speed limit signs
- Signage for hazardous materials and dangerous equipment
- Construction netting to barricade trenches/excavations and or protected plant species
- Notice boards to display important information
 - Health and safety protocols
 - Important environmental protocols/conditions
 - Emergency contact details
- Sanitary facilities shower / wash room and chemical toilets
 - These facilities need to be serviced on a regular basis

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C3.7 Management of the Works

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PART	HEADING	PAGE NO.
C3.7.1	Scope	C 3-7-2

C3.7 Management of the Works

C3.7.1 Scope

The management of the site shall be in accordance with the provisions of General Conditions of Contract (2015) and the SANS 1200 Standard Specification for Civil Engineering Construction (1981 edition).

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C4 Site Information

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C4.2	Site specific EIA requirements	C 4-2
C4.3	Accommodation, Water and Electricity	C 4-3
C4-4	Photographic Report	C 4-4

C4 SITE INFORMATION

C4.1 Surveys/Beacons

The Bidder is to note that all survey control and beacons are based on localized grid positions and levels.

The details for the relevant survey control will be issued to the successful contractor at the commencement of the contract.

C4.2 Site specific EIA requirements

The Bidder is to refer to Part C3.5 of this document for pertinent information regarding the environmental requirements relating to this contract.

C4.3 Accommodation, Water and Electricity

The Bidder is to refer to Part C3.1 of this document for pertinent information regarding the requirements for accommodation, water and electricity.

C4.4 Photographic Report



MALUTI-A-PHOFUNG LOCAL MUNICIPALITY



BID NO.: : SCM/BID05/2025/2026

**PROCUREMENT OF A SERVICE PROVIDER FOR REPAIRS AND
REFURBISHMENT OF SEWER PUMP STATION INTABAZWE CORRIDOR**

PHOTOGRAPHIC REPORT FOR INFORMATION PURPOSES

CLIENT: MALUTI-A-PHOFUNG LOCAL MUNICIPALITY PRIVATE BAG X805 WITSIESHOEK 9870 TEL: 058 718 3700  CONTACT PERSON: MR T SELEPE	CONSULTANT: MPHATI & ASSOCIATES (PTY) LTD P O BOX 1631 BETHLEHEM 9700 TEL: 082 448 3809  CONTACT PERSON: MR TW BARTLEMAN
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Pump station: : CORRIDOR SEWER PUMP STATION (28°30'48.45"S, 28°47'23.26"E)

Schedule Reference : CIVIL WORKS

PHOTOS



**PROPOSED SCOPE OF WORKS
(BUT NOT LIMITED TO)**

Refurbishment of existing Pump Station:
Repaint of interior walls, ceilings and floors
Repaint access doors
Refurbish roof
Refurbishment of existing gantry
Removal of vegetation
Refurbish existing guardrails
Repairing cracked floors outside the pump station structure
Construction of new access road
Install new gantry

Pump station: : CORRIDOR SEWER PUMP STATION (28°30'48.45"S, 28°47'23.26"E)

Schedule Reference : MECHANICAL WORKS

PHOTOS



**PROPOSED SCOPE OF WORKS
(BUT NOT LIMITED TO)**

Installation of new pipework
Installation new pump sets
Installation of valves and control equipment
Installation of lifting equipment

Pump station: : CORRIDOR SEWER PUMP STATION (28°30'48.45"S, 28°47'23.26"E)

Schedule Reference : ELECTRICAL WORKS

PHOTOS



**PROPOSED SCOPE OF WORKS
(BUT NOT LIMITED TO)**

Installation of new MCC Panel
Installing new pressure transmitters
Installation of new electrical cables
General electrical refurbishment (lights & plugs)
Installation of exterior flood lights
Installation of security system, including:
CCTV cameras
Entrance prevention (Pepper spray)

Pump station: : INTABAZWE SEWER PUMP STATION (28°16'5.00"S, 29° 5'12.25"E)

Schedule Reference : CIVIL WORKS

PHOTOS



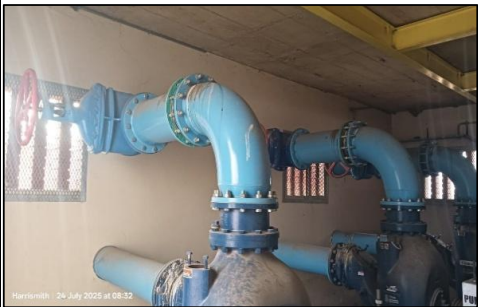
PROPOSED SCOPE OF WORKS (BUT NOT LIMITED TO)

Refurbishment of existing Pump Station:
Repaint of interior walls and floors
Repaint access doors
Refurbish roof
Refurbishment of existing gantry
Removal of vegetation
Refurbish existing guardrails
Repairing cracked floors outside the pump station structure
Construction of new access road
Install new gantry
Refurbishment of existing Guardroom:
Repaint of interior walls, ceilings and floors
Installation of new door
Refurbish roof
Installation of new windows and frames
Refurbishment of ablution facilities
Refurbishment of existing Generator room:
Repaint of interior walls and floors
Repaint access doors

Pump station: : INTABAZWE SEWER PUMP STATION (28°16'5.00"S, 29° 5'12.25"E)

Schedule Reference : MECHANICAL WORKS

PHOTOS



PROPOSED SCOPE OF WORKS (BUT NOT LIMITED TO)

Refurbishment of existing pipework
Refurbishment of existing pump sets
Refurbishment of existing valves and control
equipment
Refurbishment of lifting equipment

Pump station: : INTABAZWE SEWER PUMP STATION (28°16'5.00"S, 29° 5'12.25"E)

Schedule Reference : ELECTRICAL WORKS

PHOTOS



PROPOSED SCOPE OF WORKS (BUT NOT LIMITED TO)

Refurbishment of existing MCC Panel
Installing new pressure transmitters
Fault finding and replacement of existing electrical
General electrical refurbishment (lights & plugs)
Installation of exterior flood lights
Installation of security system, including:
CCTV cameras
Entrance prevention (Pepper spray)
Installation of backup generator