TENDER

TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS

SCMU5-23/24-0073

NAME OF COMPANY:

_____

CSD Nr:

_____

CRS Nr (CIDB):

_____

CLOSING DATE: 26 October 2023 TIME: 11:00 am

Department of Public Works and Infrastructure
Independence Avenue
Qhasana Building
Bhisho
5605

TABLE OF CONTENTS

THE TENDER

PART T1: TENDERING PROCEDURES

T1.1 Tender Notice and Invitation to Tender

The Eastern Cape Department of Public Works and Infrastructure invites contractors with a CIDB Grading of **7CE or higher** in the following Class of works (**CE)** to tender for the **"TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS"** for a **15-month** contract. The contract will be based on the General Conditions of Contract third Edition of 2015 and the Eastern Cape Public Works and Infrastructure will enter a contract with the successful tenderer.

Only tenderers who have suitable experience and suitably qualified personnel in providing similar services to those that are required are eligible to submit tenders.

Bid documents are downloadable free of charge from Department of Public Works and Infrastructure website (www.ecdpw.gov.za/tenders) or from National Treasury's tender portal (http://www.etender.gov.za/content/advertised-tenders). Bid documents will be available on **22 September 2023**. No bid documents will be available at departmental offices.

There will be **Non-Compulsory** briefing meeting on **11 October 2023**, at **Taylor Bequest Hospital, Mt. Fletcher.** Prospective bidders to meet **at the main entrance of the site at 11h00.**

Queries relating to the issue of these documents may be addressed in writing to SCM email: supply.chain@ecdpw.gov.za **Technical enquiries:** may be addressed in writing to **Mr. M. Ngamlana**– email: Mkanyiseli.Ngamlana@ecdpw.gov.za

The closing time for receipt of tenders by the ECDPWI is **11:00am** on **26 October 2023**. Telegraphic, telephonic, telex, facsimile, e-mail and late tenders will not be accepted. Bids must be submitted in sealed envelopes clearly marked **"SCMU5-23/24-0073: "TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS"** must be deposited in the bid box, **DEPARTMENT OF PUBLIC WORKS, FRONT CORNER OF QHASANA BUILDING ON THE WAY TO CIDB OFFICES LABELLED "TENDERS", BISHO.**

It is the responsibility of the tenderer/s to ensure that bid documents /proposals are submitted on or before closing time and the correct location as the department will not take responsibility of wrong delivery. Tenderers using courier services for delivery of their bid documents must ensure the delivery is at the correct place / location and time as the department will not be held responsible for wrong delivery. Not delivered to Departmental officials. The Department will not accept responsibility if bids received by officials are not timely deposited in the Bid Box.

Tenders may only be submitted on the tender documentation that is issued. Tenderers must be registered on the National Treasury Central Supplier Data Base and proof of registration must be submitted with the proposal (https://secure.csd.gov.za). Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

B. BID EVALUATION:
This bid will be evaluated in Two (2) phases as follows:

Phase One: Compliance, responsiveness to the bid rules and conditions, thereafter they will be evaluated on PPPFA.

Phase Two: Bidders passing all stages above will thereafter be evaluated on PPPFA.

PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT (PPPFA) POINTS WILL BE AWARDED AS FOLLOWS:

Maximum points on price	-	**80 points**
Maximum points for Specific goals	-	**20 points**
Maximum points	-	**100 points**

Maximum points on price	-	**90 points**
Maximum points for Specific goals	-	**10 points**
Maximum points	-	**100 points**

C. BID SPECIFICATIONS, CONDITIONS AND RULES

1. The minimum specifications, other bid conditions and rules are detailed in the bid document under Tender Data
2. The specifications, rules, special conditions of bid, evaluation criteria, and rules for evaluation for compliance to local content and other bid conditions are detailed in the document.
3. The Department of Public Works and Infrastructure SCM policy applies.
4. Tender validity period is **120 days.**

D. TENDER SUBMISSIONS:

Bids must be submitted in sealed envelopes clearly marked **"SCMU5-23/24-0073": "TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS:"** must be deposited in the bid box, **DEPARTMENT OF PUBLIC WORKS, FRONT CORNER OF QHASANA BUILDING ON THE WAY TO CIDB OFFICES LABELLED "TENDERS", BISHO**.

E. ENQUIRIES WITH REGARD TO THIS ADVERT MAY BE DIRECTED TO:

- **SCM RELATED ENQUIRIES**
  Email Address: supply.chain@ecdpw.gov.za

  TECHNICAL ENQURIES
  Mr. M. Ngamlana
  Tel No: **040 402 4014**
  Cell No**: 071 294 6702**
  Email Address: Mkanyiseli.Ngamlana@ecdpw.gov.za

FOR COMPLAINTS, FRAUD, & TENDER ABUSE:
Call: 0800 701 701

T1.2 Tender Data

The conditions of tender are the latest edition of SANS 10845-3, *Standard conditions of tender*.

SANS 10845-3 makes several references to the Tender Data for details that apply specifically to this tender.

The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the provisions of SANS 10845-3 *and* as contained in **Annexure C** of **Standard for Uniformity in Construction Procurement (Board Notice 423 of 2009 Government Gazette No 42622 of August 2019)**.

Each item of data given below is cross-referenced to the clause in SANS 10845-3 to which it mainly applies.

Clause number	Tender Data
3.1	The Employer is Public Works and Infrastructure
3.2	The tender documents issued by the employer comprise the following documents: **THE TENDER** **Part T1: Tendering procedures** T1.1 - Tender notice and invitation to tender T1.2 - Tender data **Part T2: Returnable documents** T2.1 - List of returnable documents T2.2 - Returnable schedules **THE CONTRACT** **Part C1: Agreements and Contract data** C1.1 - Form of offer and acceptance C1.2 - Contract data C1.3 - Dispute Resolution Mechanism **Part C2: Pricing data** C2.1 - Pricing Instructions C2.2 - Bills of Quantities **Part C3: Scope of works** C3.1 - Standard Specifications C3.2 - Project Specifications C3.3 - Particular Specifications **Part C4: Site information** C4.1 - General C4.2 - Project Location **Part C5: Annexures** Annexure 1 - Mechanical & Electrical Scope of Works Annexure 2 - List of Drawings Annexure 3 - Construction Health & Safety Specification Annexure 4 - EPWP Specification
3.3	The tender documents issued by the employer comprise the documents listed on the contents page
3.4	The employer's agent is: Name: Mr. L. Khumalo Triakon Engineering (Pty) Ltd D20 Waterford Court 234 Glover Avenue Die Hoewes Tel No: Head Office **012 941 9876** Email Address: projects@triakon.co.za
3.5	The language for communications is English
3.6	The competitive negotiation procedure shall be applied.
3.7	Method 2: Two (2) stage procurement procedure shall be applied.
4	**Tender's obligations**
4.1	The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated: a) contractors who have a contractor grading designation CIDB **Grade 7CE OR HIGHER** class of construction work; and b) Joint ventures.
4.2	The employer **will not** compensate the tenderer for any costs incurred in attending interviews or making any submissions in the office of the employer.

4.3	It is the responsibility of the tenderer to check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.
4.4	**Confidentiality and copyright of documents** Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.
4.5	Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are incorporated into the tender documents by reference.
4.6	Acknowledge receipt of addenda to the tender documents, which the employer may issue, and, if necessary, apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.
4.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list. **Tender documents will not be made available at the clarification meeting**
4.8	**Seek clarification** *Request clarification of the tender documents, if necessary, by notifying the employer at least* ***7 (Seven) working days*** ***before the closing time stated in the tender data.***
4.9	Tenderers are required to state the rates and currencies in Rands. Include in the rates, prices, and the tendered total of the prices (if any), all duties, taxes which the law requires to be paid [except value added tax (VAT)], and other levies payable by the successful tenderer, that are applicable 14 days before the closing time stated in the tender data. Show the VAT payable by the employer separately as an addition to the tendered total of the prices. 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. State the rates and prices in monetary value of the contract unless otherwise instructed in the tender data.
4.10	Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer or to correct errors made by the tenderer and ensure that all signatories to the tender offer initial all such alterations. Do not make erasures using masking fluid.
4.11	Main tender offers are not required to be submitted together with alternative tenders.
4.12	No alternative tender offers will be considered
4.13.1	Parts of each tender offer communicated on paper shall be submitted as an original. Submit a) the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with a translation of any documentation in a language other than the language of communication established in 3.5, and b) The parts communicated electronically by the employer of its agents on paper format with the tender.
4.13.2	Sign the original and all copies of the tender offer where required in terms of the tender data. State in the case of a joint venture which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer. NOTE The employer holds all authorized signatories liable on behalf of the tenderer.
4.13.3	A tender security in the amount of **N/A** is required and shall remain valid for a period not exceeding N**/A** days after the closing date for tender offers. The form of the tender security shall not differ substantially from the sample provided in Annex D of SANS 10845-3.
4.13.4	The employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are: **Location of tender box: DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE, FRONT CORNER OF QHASANA BUILDING ON THE WAY TO CIDB OFFICES LABELLED "TENDERS", BISHO**. **Physical address:** Independence Avenue, Ground Floor, Qhasana Building, Bhisho 5605

	Identification details: SCMU5-23/24-0073: "TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS" **Closing time and date: 26 October 2023** at **11:00**
4.13.5	The tenderer is required to submit with his tender the following certificates: 1) A copy of the CSD report showing, amongst other things, that tax matters of the service provider are in order the South African Revenue Services. *In the case of a Joint Venture/Consortium/Sub-contractors each party must submit a separate* CSD report showing, amongst other things, that tax matters of the service provider are in order the South African Revenue Services. 2) CIDB Grading certificate or CRS number.
4.13.6	A two-envelope procedure will not be required.
4.13.7	Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted. The tenderer accepts that the employer does not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
4.14	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender. Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Proof of posting shall not be accepted as proof of delivery. Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of the standard conditions of tender in this part of SANS 10845 apply equally to the extended deadline.
4.15.1	The tender offer validity period is **120 days**. Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data. If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period, with or without any conditions attached to such extension. Extend the period of the tender security, if any, to cover any agreed extension requested by the employer.
4.15.2	**Placing of contractors under restrictions / withdrawal of tenders** If any tenderer who has submitted a tender offer or a contractor who has concluded a contract has, as relevant: withdrawn such tender or quotation after the advertised closing date and time for the receipt of submissions; after having been notified of the acceptance of his tender, failed or refused to commence the contract; had their contract terminated for reasons within their control without reasonable cause; offered, promised or given a bribe in relation to the obtaining or the execution of such contract; acted in a fraudulent, collusive or anti-competitive or improper manner or in bad faith towards the Provincial Government; or, made any incorrect statement in any affidavit or declaration with regard to a preference claimed and is unable to prove to the satisfaction of the Provincial Government that the statement was made in good faith or reasonable steps were taken to confirm the correctness of the statements, such tenderer/s may be placed under restriction from tendering with the state. Procedures are outlined in the EC SCM Policy for Infrastructure procurement and Delivery Management and also on **CIDB** Inform Practice Note #30. Excerpts of the policy can be availed on request of any interested tenderer.
4.16	Access shall be provided for the following inspections, tests and analysis: **N/A**
4.17	the preferred tenderer will be required to submit an approved insurer undertaking to provide the Performance Bond / Guarantee / Surety / Security to the format and/or standard as per DPWI policy
5	**Employer's undertakings**
5.1	The Employer will respond to requests for clarification received up to **Seven (7)** working days before the tender closing time. If, as a result of the issuing of addenda, it is necessary to extend the closing time stated in the tender data, grant such extension and notify all respondents accordingly.
5.2	The employer shall issue addenda until **Seven (7)** working days before tender closing time.
5.3	Tenders will be opened immediately after the closing time for tenders at **11:00am hours.**
5.4	Do not disclose to tenderers, or to any person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and

<table>
<tr><td></td><td>recommendations for the award of a contract, until after the award of the contract to the successful tenderer.</td></tr>
<tr><td>5.5</td><td>Determine, after opening and before detailed evaluation, whether each tender offer that was properly received
a) complies with the requirements of the standard conditions of tender in this part of SANS 10845,
b) has been properly and fully completed and signed, and
c) is responsive to the other requirements of the tender documents.
A responsive tender is one that conforms to all the terms, conditions, and scope of work of the tender documents, without material deviation or qualification. A material deviation or qualification is one which, in the employer's opinion, would
d) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the scope of work,
e) significantly change the employer's or the tenderer's risks and responsibilities under the contract, or
f) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.
Reject a non-responsive tender offer, and do not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.</td></tr>
<tr><td>5.6</td><td>Arithmetical errors, omission and discrepancies
Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.
For VAT related discrepancies, National and Provincial Treasury prescripts in relation to VAT procedures apply.</td></tr>
<tr><td>5.7.1</td><td>The financial offer will be reduced to a comparative basis using the Tender Assessment Schedule.
Table F.1: Formulae for calculating the value of A
<table>
<tr><th>Formula</th><th>Comparison aimed at achieving</th><th>Option 1[a]</th><th>Option 2[a]</th></tr>
<tr><td>1</td><td>Highest price or discount</td><td>$A = \left(1 + \frac{(P - P_m)}{P_m}\right)$</td><td>$A = P/P_m$</td></tr>
<tr><td>2</td><td>Lowest price or percentage commission / fee</td><td>$A = \left(1 - \frac{(P - P_m)}{P_m}\right)$</td><td>$A = P_m/P$</td></tr>
<tr><td>a</td><td colspan="3">P_m is the comparative offer of the most favourable comparative offer.
P is the comparative offer of the tender offer under consideration.</td></tr>
</table></td></tr>
<tr><td>5.7.2</td><td>The procedure for the evaluation of responsive tenders is Method 2: Administrative, Price and Preference
Phase 1: Administrative requirements and Mandatory requirements
Phase 2: Price and preference (80/20 system)/(90/10 system)</td></tr>
<tr><td></td><td>1. <u>PHASE ONE: RESPONSIVENESS TO THE BID REQUIREMENTS AND RULES</u>

Bidders' proposals must meet the following minimum requirements and supporting documents must be submitted with the completed bid document in a sealed envelope in the bid box at the closing date and time. Failure to comply will automatically eliminate the bid for further consideration:
2. Bid Document (This Document must be submitted in its original format)
3. Bids which are late, incomplete, unsigned or submitted by facsimile or electronically, will not be accepted.
4. Bidder must be registered with CIDB in the correct grading and class of works as per the tender notice and requirements. The status on CIDB must be active. It is the responsibility of the bidder to keep the status on CIDB active throughout bidding process (advert till award stage).
5. Bidders must be a legal entity or partnership or consortia.
6. Form of offer and Acceptance (fully completed and signed).
7. SBD 4- Declaration of Interest (fully completed and signed). SBD4 must be duly completed and signed. Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in</td></tr>
</table>

	any other related enterprise whether or not they are bidding for this contract, such interest must be disclosed on question 2.3.1. **8.** Incomplete or unsigned or poorly completed forms **SBD 4 will lead to a bidder being declared non-responsive**. **9.** Compulsory Enterprise Questionnaire (Completed and signed) (JV partners must complete separate Questionnaire forms and submit). 10. If the offer is "Vat Inclusive", the VAT registration number of service provider must be indicated and if a service provider is not a VAT Vendor but include VAT in its prices, the successful service provider will be given 21 days to register as a VAT Vendor with SARS, after the issuing of an appointment letter. If a bidder is a VAT vendor/registered, the bidder is required to explicitly state the VAT amount. VAT vendors must include VAT at 15% in the bid offer(s). **11.** If the Bid Sum (amount in words) differ from the Bid Sum (amount in figures), the Bid Sum (amount in words) will govern. **12.** Resolution to Sign (must be completed, if applicable). **13.** Declaration of Employees of the State or other State Institutions. **14.** Only one offer per bidder is allowed and alternative offers will not be considered. If more than one offer is received, none of the offers will be considered. 15. Attendance of compulsory briefing meeting (if applicable) 16. Bidders must have completed three (3) projects of similar nature in water and waste water treatment works. **Other Conditions of bid (Non eliminating unless expressly mentioned in the document):** 1. The bidder must be registered on the Central Supplier Database (CSD) prior the award 2. All bidders' tax matters must be in order prior award. Bidders' tax matters will be verified through CSD. In cases where bidder's status found non-compliant the bidder will be granted 7 days to correct status. **A bidder that fails to rectify its tax matters with SARS will declared non-responsive**. 3. The bidder has duly completed and signed the **SBD 1**, and **SBD 6.1**. **4.** Bidders need to complete and sign **SBD 6.1** to claim points for specific goals. **Failure will lead in non-awarding of points for specific goals.** **5.** Bidders must submit a minimum of three (3) written contactable references for projects successfully completed in the past (clearly indicating client name, contract value, contract term, contact person, contact details). Refer to Annexure I and Annexure M. This is not an elimination factor, but important for the department to make a decision. Unless it is used for Quality/functionality Points.
	6. Bidders must submit a list of projects where he or she has submitted tender offers but tender results have not been confirmed by the client. Refer to Annexure L. This is not an elimination factor, but important for the department to make a decision. Unless it is used for Quality/functionality Points. 7. Bidders must submit their company profiles, list of available resources, plant and machinery and any other additional capacity with the bid. Refer to Annexure K and H. This is not an elimination factor, but important for the department to make a decision. Unless it is used for Quality/functionality Points. 8. The bidder must also list all projects where there are pending litigations or litigations have been concluded. The form for this is also attached after Annexure J. 9. The Department will contract with the successful bidder by signing a formal contract. 10. This tender will be awarded as a whole. All trades listed in the Bills of Quantities or Pricing schedule must be priced for (except provisional sums and allowances which also need to be added to the total), failure to do so will increase commercial risk of the bid and may lead to elimination or passing over of the bidder. 11. Wherever a brand name is specified in this document (i.e. specifications, pricing schedule, bill of quantities or anywhere), the department requires an item similar/equivalent or better. 12. DPWI Policy applies. 13. Protection of personal information: Consent (POPIA). 14. The successful tenderer (after being informed) will be required to bring along an unsigned copy of the form of contract to be signed by parties (e.g. GCC Third Edition of 2015)

15. Contractor has committed to support local SMMEs (EME /QSEs which are at least 100% owed by Black people). The work to be implemented by the local should amount to 15% of the total work. The work packages to be implemented by the local SMMEs are already set or allocated in the Bills of Quantities of the project as provisional sum that a contractor will price only Profit and Attendance for. The responsibility to sub-contract with competent and capable sub-contractor's rests with the main contractor/supplier. Once awarded, to bring harmony on site, the department reserves the right to intervene in the selection of local sub-contractors or SMMEs on site

1. **PHASE TWO: EVALUATION POINTS ON PRICE AND SPECIFIC GOALS/PPPFA OF 2022**

The **80/20 or 90/10 preference point system** shall be applied for the purposes of this bid as per the requirements of the *Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000)* and Specific goals/ PPPFA Regulations *of 2022*

Criteria	Points
POINTS ON PRICE	80 or 90
SPECIFIC GOALS	20 or 10
TOTAL	100

Please note:

1. **Bidders need to complete and sign SBD 6.1 to claim points for specific goals. Failure will lead to the non-awarding of points for specific goals.**
2. **The Department intends to award this to the highest point scorer as whole, unless circumstances justify otherwise.**
3. **All information will be verified through CSD.**
4. **SBD 6.1 is attached.**

The 90/10 preference point system for acquisition of services, works or goods exceeding Rand value of R50 million:

(a) The following formula must be used to calculate the points for price in respect of tenders (including price quotation) with a Rand value equal to, or above R 30 000 and up to Rand value of R 50 000 000 (all applicable taxes included):

The financial offer will be scored using the following formula:

	A = (1 - (P - Pm)) Pm The value of value of W_1 is: 1) **90** where the financial value inclusive of VAT of all responsive tenders received have a value in **excess of R50 000 000** or 2) **80** where the financial value inclusive of VAT of one or more responsive tender offers have a value that **equals or is less than R 50 000 000**.
5.7.3	The procedure for the evaluation of responsive tenders is **Method 2** (Administrative, price and preference)
5.7.4	The quality criteria and maximum score in respect of each of the criteria are as follows: **N/A**
5.7.5	Each evaluation criteria will be assessed in terms of five indicators – **N/A**
5.7.6	The prompts for judgment and the associated scores used in the evaluation of quality shall be as follows: **N/A**
5.8	**Tender offers will only be accepted if:** a) the tenderer is registered on the Central Supplier Database (CSD) for the South African government (see https://secure.csd.gov.za/) unless it is a foreign supplier with no local registered entity b) the tenderer is in good standing with SARS according to the Central Supplier Database. Bidders must submit a CSD no. or tax status compliance pin. c) the preferred tenderer will be required to submit an approved insurer undertaking to provide the Performance Bond / Guarantee / Surety / Security to the format and/or standard as per DPWI policy. d) the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation; e) the tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector. f) the tenderer has not: i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect. g) the tenderer has completed the Compulsory Declaration and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.
	h) the tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process and persons in the employ of the state are permitted to submit tenders or participate in the contract; i) Bids which are late, incomplete, unsigned or submitted by facsimile or electronically will not be accepted. j) the tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer; k) The tenderer undertakes to maximize the sourcing of building material or infrastructure input material from Eastern Cape-based suppliers or manufacturers. l) the employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely. m) The tender has offered a market related offer. If the offer is believed not to be market related, the department through its Supply Chain Management bid committees will attempt to negotiate the offer with identified bidder/s to a reasonable amount. Bidders are not allowed to increase their tender offers during this process.

	n) A Resolution of signatory form has been completed and signed by director/s or a letter bearing a letterhead of the tenderer has been attached (specific to this bid) to the bid submission; it must be duly signed by all directors and submitted with the bid. Only a duly authorized official can sign the bid. o) Prospective bidders must register on CSD prior submitting bids (open tenders). Any prospective bidder found to have Tax matters not in order with SARS (verified through CSD) during the evaluation process (after being given an opportunity to rectify tax matters) will be eliminated and not be considered further in the process. Preferred bidder/s will be afforded an opportunity to rectify their tax affairs within 7 days. A bidder that fails to rectify its tax matters with SARS will be eliminated. p) **NOTE:** The amount reflected on the Form of Offer and Acceptance takes precedence over any other total amount indicated elsewhere in bidder's tender submission. If the Form of Offer and Acceptance has no value or figure, the bidder will be regarded as having made no offer. q) The department reserves the right not to award the bid to the most favourable tenderer, if any of the situations occur: if it is not assisting in the advancement of designated groups; risk profile of the favourable firm is too high; the bidder has been awarded a considerable number of projects by the department or provincial government; has performed unsatisfactorily in the past, etc. r) Contractor must have a CIBD grading of 7CE OR HIGHER.
5.9	The number of paper copies of the signed contract to be provided by the employer is 1.
	The additional conditions of tender are: • Wherever a brand name is specified in this document (i.e., specifications, pricing schedule, bill of quantities or anywhere), the department requires an item similar/equivalent or better.
T.2.1	**List of returnable documents**
1	**Documentation to demonstrate eligibility to have tenders evaluated i.e.,** *List all documentation to demonstrate eligibility to have a submission evaluated.* • Appropriate CIDB grading suitable for the works (as stated in 4.1).
2	**Returnable Schedules required for tender evaluation purposes.** The tenderer must fully and appropriately complete and sign the following returnable schedules as relevant: • Record of Addenda to Tender Documents • Proposed amendments and qualifications • Compulsory Enterprise Questionnaire (In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted). • SBD 1, 4, 6.1, • Protection of personal content: Consent • Form of Offer and Acceptance • Complete priced Bills of Quantities, including Final Summary
3	**Other documents required for tender evaluation purposes.** The tenderer must provide the following returnable documents: • A CSD Report for a contractor with valid and correct information. • A letter of good standing from the Compensation Fund or a licensed insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act 1993 (Act No. 130 of 1993)
4	**Returnable Schedules that will be used for tender evaluation purposes and be incorporated into the contract.** The tenderer must complete the following returnable documents: • A duly completed form of Offer and Acceptance (and any revision of prices if there are any).
5	**Only authorized signatories may sign the original and all copies of the tender offer where required.** • In the case of a **ONE-PERSON CONCERN** submitting a tender, this shall be clearly stated.

	• In the case of a **COMPANY** submitting a tender, include a copy of a **resolution by its board of directors** authorizing a director or other official of the company to sign the documents on behalf of the company. • In the case of a **CLOSE CORPORATION** submitting a tender, include a copy of a **resolution by its members** authorizing a member or other official of the corporation to sign the documents on each member's behalf. • In the case of a **PARTNERSHIP** submitting a tender, **all the partners** shall sign the documents, unless one partner or a group of partners has been authorized to sign on behalf of each partner, in which case **proof of such authorization** shall be included in the Tender. • **Accept that failure to submit proof of authorization to sign the tender shall result in the tender offer being regarded as non-responsive.**
6	**Information and data to be completed in all respects.** Accept that tender offers, which do not provide all the data or information requested completely and, in the form, required, may be regarded by the employer as nonresponsive.
7	**Canvassing and obtaining of additional information by tenderers.** The Tenderer shall not make any attempt either directly or indirectly to canvass any of the Employer's officials or the Employer's agent in respect of his tender, after the opening of the tenders but prior to the Employer arriving at a decision thereon. The Tenderer shall not make any attempt to obtain particulars of any relevant information, other than that disclosed at the opening of tenders.
8	**Prohibitions on awards to persons in service of the state** The Employer is prohibited to award a tender to a person - a) who is in the service of the state; or *b)* if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state; or *c)* a person who is an advisor or consultant contracted with the Department or municipal entity. **In the service of the state** means to be - a) a member of:- *a* any municipal council; *b* any provincial legislature; or *c* the National Assembly or the National Council of Provinces; *d)* a member of the board of directors of any municipal entity; *e)* an official of any Department or municipal entity; *f)* an employee of any national or provincial department; *g)* provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999); *h)* a member of the accounting authority of any national or provincial public entity; or *i)* an employee of Parliament or a provincial legislature. In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in part T2 of this procurement document must be completed.
9	**Awards to close family members of persons in the service of the state** Accept that the notes to the Employer's annual financial statements must disclose particulars of any award of more than R2000 to a person who is a spouse, child, or parent of a person in the service of the state (defined in clause 8 above), or has been in the service of the state in the previous twelve months, including - *a)* the name of that person; *b)* the capacity in which that person is in the service of the state; and *c)* the amount of the award.

	In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in part T2 of this procurement document must be completed.
10	**Respond to requests from the tenderer** The employer will respond to requests for clarification up to **7 (seven) working days** before the tender closing time.
11	**Opening of tender submissions** Tenders will be opened immediately after the closing time for tenders
12	**Scoring quality / functionality:** N/A
13	**Cancellation and re-invitation of tenders** An organ of state may, prior to the award of the tender, cancel the tender if- (a) due to changed circumstances, there is no longer a need for the services, works or goods requested; or (b) funds are no longer available to cover the total envisaged expenditure; or (c) no acceptable tenders are received. (d) Tender validity period has expired. (e) Gross irregularities in the tender processes and/or tender documents. (f) No market related offer received (after attempts of negotiation processes) Where applicable, the decision to cancel the tender will be published in the CIDB website and in the Tender Bulletin or the media in which the original tender invitation as advertised.
14	Dispute resolution mechanism will be done through the **Adjudication** route**.**
15	The department must when be acting against the tenderer or person awarded the contract on a fraudulent basis, considers the provisions of Regulation 22: The remedies provided for in Preferential Procurement Regulations 2022 do not prevent an institution from instituting remedies arising from any other prescripts or contract.
16	Where the employer terminates the contract due to default of the contractor in whole or in part, the employer may decide to: a) Refer the breach in contract to the **cidb** for investigation as a breach of the **cidb Code of Conduct** in terms of the **cidb Regulations**; or b) may impose a restriction penalty on the contractor in terms of Section 14 of the Preferential Procurement Regulations. The outcomes of such investigations in terms of both the cidb Regulations and the Preferential Procurement Regulations may prohibit the contractor from doing business with the public sector for a period not exceeding 10 years.

PART T2: RETURNABLE DOCUMENTS

T2.1 List of Returnable Documents

The tenderer must complete the following returnable documents:

1 Returnable Schedules required for quotation evaluation purposes.

- Compulsory enterprise questionnaire (In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted).
- Record of addenda issued (Only if addenda is issued)
- Certificate of authority for joint ventures (Only where the tender/ quotation is submitted by a joint venture)

2 Other documents required for quotation evaluation purposes.

- Form of Offer and Acceptance
- Complete Priced Bills of Quantities & Final Summary

3 Returnable Schedules that will be incorporated into the contract

- Details of the Project Team, CV, Qualifications and Proof of Registration to be completed for each individual of the proposed Project Team.
- Schedule of Plant and Equipment.
- Record of projects: current, past and on tender.
- Project References – at least 3
- SBD 1, 4, 6.1,
- Protection of personal content: Consent

SBD 1 - INVITATION TO BID

PART A

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE					
BID NUMBER:	**SCMU5-23/24-0073**	CLOSING DATE:	**26 October 2023**	CLOSING TIME:	11:00
DESCRIPTION:	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT					
DEPARTMENT OF PUBLIC WORKS, FRONT CORNER OF QHASANA BUILDING ON THE WAY TO CIDB OFFICES LABELLED **"TENDERS"**, BHISHO.					

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO		**TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**	
CONTACT PERSON		CONTACT PERSON	**Mkanyiseli Ngamlana**
TELEPHONE NUMBER		TELEPHONE NUMBER	**040 602 4014**
FACSIMILE NUMBER		FACSIMILE NUMBER	
E-MAIL ADDRESS	supply.chain@ecdpw.gov.za	E-MAIL ADDRESS	Mkanyiseli.Ngamlana@ecdpw.gov.za

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					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	[TICK APPLICABLE BOX] ☐ Yes ☐ No	

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

(a) ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES, COMPLETE QUESTIONNAIRE BELOW]

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.

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 IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**
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 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NAME OF BIDDER REPRSENTATIVE ……

SIGNATURE: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……
(Proof of authority must be submitted e.g., company resolution)

DATE: ……..……...

COMPULSORY ENTERPRISE QUESTIONNARE

A

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: The attached SBD 4 must be completed for each tender and be attached as a tender requirement.

Section 7: The attached SBD 6.1 must be completed for each tender and be attached as a requirement.

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

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

ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004; iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

iv) 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 .....

SBD4 –

DECLARATION OF INTEREST

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest[1] in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:
……
……

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:
……
……

3 DECLARATION

I, the undersigned, (name)…… in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;
3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

[1] ***the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.***

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[2] will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

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

3.6 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.7 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.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....	.....
Signature	Date
.....	.....
Position	Name of bidder

[2] ***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.***

SBD 6.1 - PREFERENTIAL PROCUREMENT REGULATIONS 2022 CLAIM FORM

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

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

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

---

1. GENERAL CONDITIONS

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

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

  OR

- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 To be completed by the organ of state

a) The applicable preference point system for this tender is the 80/20 or 90/10 preference point system.

b) The lowest acceptable tender will be used to determine the accurate system once tenders are received.

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

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS	POINTS
PRICE	80	90
SPECIFIC GOALS	20	10
Total points for Price and SPECIFIC GOALS	**100**	100

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

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

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

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

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method

envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

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

3. FORMULA FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

80/20 or 90/10

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

Where

Ps = Points scored for price of tender under consideration
Pt = Price of tender under consideration
Pmin = Price of lowest acceptable tender

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

3.2.1. POINTS AWARDED FOR PRICE

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

80/20 or 90/10

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

Where

Ps = Points scored for price of tender under consideration
Pt = Price of tender under consideration
Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

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

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.
(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.
Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points claimed (80/20 system) (To be completed by the tenderer)	Number of points claimed (90/10 system) (To be completed by the tenderer)
Historically Disadvantaged Individual:-				
(a) 100% black ownership	6	4		
(b) 51% to 99% black ownership	4	2		
(c) Less than 51% black ownership	0	0		
Black women ownership:-				
(a) 100% black women ownership	4	2		
(b) 30% to 99% black women ownership	2	1		
(c) Less than 30% black women ownership	0	0		
Black youth ownership:-				
(a) 100% black youth ownership	4	2		
(b) 30% to 99% black youth ownership	2	1		
(c) Less than 30% black youth ownership	0	0		
People with disability:-				
(a) 20% or more disabled people ownership	2	1		
(b) Less than 20% disabled people ownership	0	0		
Locality:-				
(a) Within the Eastern Cape	4	1		
(b) Outside the Eastern Cape	0	0		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm……

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that

person's conduct;

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

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

(e) forward the matter for criminal prosecution, if deemed necessary.

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

SURNAME AND NAME: .....
DATE: .....

ADDRESS: .....

.....

.....

.....

PROOF OF REGISTRATION ON THE NATIONAL TREASURY CENTRAL SUPPLIER DATABASE (CSD REPORT)

(ATTACH HERE)

VALID CIDB CERTIFICATE OF A TENDERER

(ATTACH HERE)

PROTECTION OF PERSONAL INFORMATION: CONSENT (POPIA)

The introduction of The Protection of Personal Information Act (POPIA) ensures the regulation of personal information through its entire life cycle of collection, transfer, storing and deletion.
As part of its business activities, the Department of Public Works and Infrastructure obtains and requires access to personal data from a wide range of internal and external parties, including without limitation bidders who respond to requests for proposals that are published by the Department of Public Works and Infrastructure from time to time. The Department of Public Works and Infrastructure confirms that it shall process the information disclosed by Bidders for the purpose of evaluating and subsequently awarding/appointing a successful Bidder.

The Department of Public Works and Infrastructure hereby states that it does not and will never modify, amend, or alter any personal information submitted to it by a Bidder. Not unless directed to do so by an order of court, the Department of Public Works and Infrastructure does not disclose or permit the disclosure of any personal information to any Third Party without the prior written consent of the owner of the information.

Similarly, Bidders will from time-to-time access and be seized with information of a personal nature pertaining to the Department of Public Works and Infrastructure. Some of the information may because of legislative compliances be available in the public domain, whilst some is uniquely provided to bidders in pursuit of procurement or other business-related activities. In this regard, the Department of Public Works and Infrastructure requires that Bidders which receive or have access to its personal information, process any such information in a manner compliant with the requirements of the POPIA.

AGREEMENT

1. The Department of Public Works and Infrastructure and the Bidder (the Parties) agree and undertake that upon obtaining and
   having access to personal information relating to either of them, they shall always ensure
   that:
   a) They process the information only for the express purpose for which it was obtained.
   b) Information is provided only to designated and authorized personnel who require the personal information to carry out the Parties' respective obligations in terms of the Procurement processes.
   c) They will introduce, and implement all reasonable measures ensure the protection of all personal information from unauthorized access and/or use.
   d) They have taken appropriate measures to safeguard the security, integrity, and authenticity of all personal information in its possession or under its control.
   e) The Parties agree that if personal information will be processed for any other purpose other than the one for which the accessing of the information was intended, explicit written consent will be obtained prior to the execution of such reason.
   f) The Parties shall carry out regular assessments to identify all reasonably foreseeable internal and external risks to the interception of personal information in its possession or under its control and shall implement and maintain appropriate controls in mitigation of such risks.

2. The Parties agree that they will promptly return or destroy any personal data in their possession or control which belongs to the other Party once it no longer serves the purpose for which it was collected, subject to any legal retention requirements. The information will be destroyed in such a manner that it cannot be reconstructed to its original form, linking it to any individual or organization.

3. Bidder's Obligations

   a) The Bidder is required to notify the Information Officer of Department of Public Works and Infrastructure, in writing as soon as possible after it becomes aware of or suspects any loss, unauthorized access or unlawful use of any of the Department of Public Works and Infrastructure's personal information.
   b) The Bidder shall, at its own cost, promptly and without delay take all necessary steps to mitigate the extent of the loss or compromise of personal data.
   c) The Bidder shall be required to provide the Department of Public Works and Infrastructure with details of the persons affected by the compromise and the nature and extent of the compromise, including details of the identity (if known) of the unauthorized person who may have accessed or acquired the personal data.

d) The Bidder undertakes to cooperate with any investigation relating to security breach which is carried out by or on behalf of The Department of Public Works and Infrastructure.

On behalf of the Bidder:

…….. ……
Signature Date

…… ……
Position Name of the Bidder

On behalf of the Client:

…….. ……
Signature Date

…….. ……
Position Name of Client Representative

THE CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

C1.1: FORM OF OFFER AND ACCEPTANCE

Annex C

(normative)

FORM OF OFFER AND ACCEPTANCE

Project title	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU number	**SCMU5-23/24-0073**

OFFER

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

……

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

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

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

…… Rand (in words) ;

R ……..……..(in figures) (or other suitable wording)

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

Signature ……
Name ……...
Capacity ……...
for the tenderer
……...
(Name and address of organization)
Name and signature
of witness ……..… ….. Date ……

ACCEPTANCE

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

Part C1 Agreements and contract data, (which includes this agreement)
Part C2 Pricing data
Part C3 Scope of work.
Part C4 Site information and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this form of offer and acceptance. No amendments to or deviations from said documents are valid unless contained in this schedule.
The tenderer shall within 3 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 securities, 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 tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor**)** within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.[1]

Signature ……
Name ……
Capacity ……
for the Employer
……
(Name and address of organization)
Name and signature
of witness …….. Date ……..

Schedule of Deviations

1 Subject _____
Details
_____

2 Subject _____
Details
_____

3 Subject _____
Details
_____

4 Subject _____
Details
_____

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

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

[1] *As an alternative, the following wording may be used:*

*Notwithstanding anything contained herein, this agreement comes into effect two working days after the submission by the employer of one fully completed original copy of this document including the schedule of deviations (if any), to a courier-to-counter delivery / counter-to-counter delivery / door-to counter delivery /door-to-door delivery /courier service (delete that which is not applicable), provided that the employer notifies the tenderer of the tracking number within 24 hours of such submission. Unless the tenderer (now contractor**)** within seven working days of the date of such submission 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*

A RECORD OF ADDENDA TO BID DOCUMENTS

PROJECT TITLE	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**

I / We confirm that the following communications received from the Department of Public Works before the submission of this tender offer, amending the tender documents, have been taken into account in this bid offer: (Attach additional pages if more space is required)

Item	Date	Title or Details	No. of Pages
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Attach additional pages if more space is required.

Signed ..... Date .....

Name ..... Position .....

Tenderer .....

B PROPOSED

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualifications in a covering letter to his tender and reference such letter in this schedule. The Tenderer's attention is drawn to clause 5.8 of SANS 10845-3 regarding the employer's handling of material deviations and qualifications.

PROJECT TITLE	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**

Page	Clause /Item	Proposal
The undersigned, who warrants that she/ he is duly authorised to do so on behalf of the enterprise, confirms that the content of this schedule that presented by the tenderer are within my personal knowledge and are to the best of my knowledge both true and correct		

Signed ---------- Date ----------

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

Enterprise name

C RESOLUTION FOR SIGNATORY

A: CERTIFICATE OF AUTHORITY FOR SIGNATORY

Signatory for companies shall confirm their authority hereto by attaching a duly signed and dated copy of the relevant resolution of the board of directors to this form or on company letterhead.

An example is given below:

"By resolution of the board of directors passed at a meeting held on _____

Mr/Ms_____, whose signature appears below, has been duly authorised to

sign all documents in connection with the tender for Contract No. _____

and any Contract which may arise there from on behalf of (Block Capitals) _____

_____

_____

SIGNED ON BEHALF OF THE COMPANY: _____

IN HIS/HER CAPACITY AS: _____

DATE:_____

SIGNATURE OF SIGNATORY: _____

WITNESSES:

DIRECTOR (NAMES)		SIGNATURE	
DIRECTOR (NAMES)		SIGNATURE	
DIRECTOR (NAMES)		SIGNATURE	
DIRECTOR (NAMES)		SIGNATURE	
DIRECTOR (NAMES)		SIGNATURE	
DIRECTOR (NAMES)		SIGNATURE	

If you cannot complete this form, attach a separate sheet (in a company letterhead, project specific and signed by all directors):

D CERTIFICATE OF AUTHORITY FOR JOINT VENTURES

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorize Mr/Ms . . . . . .
. . . ., authorized signatory of the company . . . . . .
. . . . , acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

PROJECT TITLE	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**

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

E SCHEDULE OF PROPOSED SUBCONTRACTORS

PROJECT TITLE	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**

We notify you that it is our intention to employ the following Subcontractors for work in this contract. The Subcontractors will all be CIDB registered and their CIDB Registration number shall be submitted below. This should also be declared on **SBD 6.1 form.**

If we are awarded a contract, we agree that this notification does not change the requirement for us to submit the names of proposed subcontractors 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 subcontractors who are or to be contracted are registered on Central Supplier Database (CSD).

No.	Name and address of proposed Subcontractor	Nature and extent of work	Year completed	Value	Contact details
1					
2					

3					
4					
5					
The undersigned, who warrants that she/ he is duly authorised to do so on behalf of the enterprise, confirms that the content of this schedule that presented by the tenderer are within my personal knowledge and are to the best of my knowledge both true and correct					

Signed ---------- Date ----------

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

Enterprise name

F CAPACITY OF THE BIDDER

PROJECT TITLE	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**

WORK CAPACITY: (The Bidder is requested to furnish the following capacity particulars and to attach additional pages if more space is required. Failure to furnish the particulars may result in the Bid being disregarded.)

Artisans and Employees: (Artisans and Employees to be, or are, employed for this project)

Quantity / No. of Resources	**Categories of Employee - Key Personnel (part of Business Enterprise)**	**Professional Registration No.**	**Date of Employment**
	Site Agent		
	Project Manager		
	Foreman		
	Quality Control & Safety Officer-Construction Supervisor		
	Artisans		
	Unskilled employees		
	Others		

The undersigned, who warrants that she/ he is duly authorised to do so on behalf of the enterprise, confirms that the content of this schedule that presented by the tenderer are within my personal knowledge and are to the best of my knowledge both true and correct.

Signed:	……	**Date**	……
Name:	……	**Position**	……

Enterprise Name: ……

G RELEVANT PROJECT EXPERIENCE – COMPLETED PROJECTS

Tenderers must submit a max one-page description of at least three projects successfully completed.

Attach a Completion Certificate for each of the projects provided.

The description of each project must include the following information:

1. Essential introductory information:
   - 1.1. Name of project.
   - 1.2. Name of client.
   - 1.3. Contact details of client.
   - 1.4. Contact details (including telephone numbers and email addresses) of currently contactable references.
   - 1.5. The period during which the project was performed, and also, if this is different, the period during which the tenderer's team members were contracted.
   - 1.6. Cost of works and/or contract value (making it clear in broad terms what this cost/value purchased, and to what extent (if any) this cost/value was part of a larger project budget or programme budget).

NO.	NAME OF PROJECT.	NAME OF CLIENT.	CONTACT DETAILS OF CLIENT.	PROJECT VALUE	DATE COMPLETED
1					
2					
3					

If there are more projects, attach a separate page to address this issue (the above table is just for reference purposes).

The undersigned, who warrants that she/ he is duly authorised to do so on behalf of the enterprise, confirms that the content of this schedule that presented by the tenderer are within my personal knowledge and are to the best of my knowledge both true and correct.

Signed…….. Date……..

Name……. Position…….

Enterprise name…… ……

H RELEVANT PROJECT EXPERIENCE – CURRENT PROJECTS

Tenderers must submit a max one-page description of at least three projects under construction/ on hold/ just handed over/ towards completion (if they exist). **Attach an Appointment letter for each of the project provided.**

The description of each project must include the following information:

2. Essential introductory information:
   - 2.1. Name of project.
   - 2.2. Name of client.
   - 2.3. Contact details of client.
   - 2.4. Contact details (including telephone numbers and email addresses) of currently contactable references.
   - 2.5. The period during which the project was performed, and if this is different, the period during which the tenderer's team members were contracted.
   - 2.6. Cost of works and/or contract value (making it clear in broad terms what this cost/value purchased, and to what extent (if any) this cost/value was part of a larger project budget or programme budget).

NO.		NAME OF PROJECT.	NAME OF CLIENT.	CONTACT DETAILS OF CLIENT.	PROJECT VALUE	STAGE OF PROJECT
1						
2						
3						

Attach a separate page to address this issue (the above table is just for reference purposes).

The undersigned, who warrants that she/ he is duly authorised to do so on behalf of the enterprise, confirms that the content of this schedule that presented by the tenderer are within my personal knowledge and are to the best of my knowledge both true and correct.

Signed ---------- Date ----------

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

Enterprise name ----------

I OTHER OFFERS SUBMITTED AT TIME OF THIS TENDER FOR WHICH RESULTS ARE PENDING (if they exist)

(Any other client's tender must also be included)

BID NO. / PROJECT NUMBER	PROJECT NAME	CLIENT NAME & CONTACT NO.	VALUE TENDERED IN RANDS	DATE SUBMITTED	CONTACT DETAILS (CLIENT)
1					
2					
3					
4					

Signed ---------- Date ----------

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

Enterprise name

If there are more projects, attach a separate page to address this issue (the above table is just for reference purposes)

J SCHEDULE OF TENDERER'S LITIGATION HISTORY

The tenderer shall list below details of any litigation with which the tenderer (including its directors, shareholders or other senior members in previous companies) has been involved with any organ of state or state department within the last ten years. The details must include the year, the litigating parties, the subject matter of the dispute, the value of any award or estimated award if the litigation is current and in whose favour the award, if any, was made.

NO.	NAME OF CLIENT.	OTHER LITIGATING PARTY	BRIEF DETAILS OF DISPUTE	PROJECT VALUE	DATE RESOLVED OR STATUS OF LITIGATION
1					
2					
3					
4					

Date

Name

Position

Tenderer name

K Project Reference Forms – 1

Project title:	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
Project Number:	**SCMU5-23/24-0073**

NOTE: This returnable document must be completed by the person who was the Engineer/Project Manager on a project of similar value and complexity that was completed successfully by the tenderer.

I, _____ (name and surname) of _____ (company name) declare that I was the Project Manager on the following building construction project successfully executed by _____ (name of tenderer):

Project name: _____

Project location: _____

Construction period: _____ Completion date: _____

Contract value: _____

A. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting "Yes" in the relevant box below:

Key Performance Indicators	Very Poor 1	Poor 2	Fair 3	Good 4	Excellent 5	Total
1. Project performance / time management / programming						
2. Quality of workmanship						
3. Resources: Personnel						
4. Resources: Plant						
5. Financial management / payment of subcontractors / cash flow, etc						
TOTAL						

B. Would you consider / recommend this tenderer again:

YES	NO

C. Any other comments: _____

_____

D. My contact details are:

Telephone: _____ Cellphone: _____ Fax: _____

E-mail: _____

Thus signed at _____ on this _____ day of _____ 2023.

_____

Signature of principal agent

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to get hold of the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points. It is the responsibility of the tenderer to put referees who are reachable.

_____
Name of Tenderer

_____ _____
Signature of Tenderer Date

Project Reference Forms – 2

'NOTE: This returnable document must be completed by the person who was the Engineer/Project

Project title:	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
Project Number:	**SCMU-22/23-0073**

NOTE: This returnable document must be completed by the person who was the Engineer/Project Manager on a project of similar value and complexity that was completed successfully by the tenderer.

I, _____ (name and surname) of _____ (company name) declare that I was the Project Manager on the following building construction project successfully executed by _____ (name of tenderer):

Project name: _____

Project location: _____

Construction period: _____ Completion date: _____

Contract value: _____

A. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting "Yes" in the relevant box below:

Key Performance Indicators	Very Poor 1	Poor 2	Fair 3	Good 4	Excellent 5	Total
1. Project performance / time management / programming						
2. Quality of workmanship						
3. Resources: Personnel						
4. Resources: Plant						
5. Financial management / payment of subcontractors / cash flow, etc.						
TOTAL						

B. Would you consider / recommend this tenderer again:

YES	NO

C. Any other comments: _____

_____

D. My contact details are:

Telephone: _____ Cellphone: _____ Fax: _____

E-mail: _____

Thus, signed at _____ on this _____ day of _____ 2023.

_____
Signature of principal agent

COMPANY STAMP

NOTE:

If reference cannot be verified due to the inability to get hold of the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points. It is the responsibility of the tenderer to put referees who are reachable.

_____
Name of Tenderer

_____ _____
Signature of Tenderer Date

Project Reference Forms – 3

Project title:	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
Project Number:	**SCMU5-22/23-0073**

NOTE: This returnable document must be completed by the person who was the Engineer/Project Manager on a project of similar value and complexity that was completed successfully by the tenderer.

I, _____ (name and surname) of _____ (company name) declare that I was the Project Manager on the following building construction project successfully executed by _____ (name of tenderer):

Project name: _____

Project location: _____

Construction period: _____ Completion date: _____

Contract value: _____

A. Please evaluate the performance of the Tenderer on the abovementioned project, on which you were the principal agent, by inserting "Yes" in the relevant box below:

Key Performance Indicators	Very Poor 1	Poor 2	Fair 3	Good 4	Excellent 5	Total
1. Project performance / time management / programming						
2. Quality of workmanship						
3. Resources: Personnel						
4. Resources: Plant						
5. Financial management / payment of subcontractors / cash flow, etc.						
TOTAL						

B. Would you consider / recommend this tenderer again:

YES	NO

C. Any other comments: _____

_____

D. My contact details are:

Telephone: _____ Cellphone: _____ Fax: _____

E-mail: _____

Thus signed at _____ on this _____ day of _____ 2023.

COMPANY STAMP

_____
Signature of principal agent

NOTE:

If reference cannot be verified due to the inability to get hold of the referee or failure on his/her part to respond to a written request to do so, that reference will not score any points. It is the responsibility of the tenderer to put referees who are reachable.

_____
Name of Tenderer

_____ _____
Signature of Tenderer Date

L BASELINE RISK ASSESSMENT

PROJECT TITLE	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**
PLEASE NOTE THAT THIS IS A BASELINE RISK ASSESSMENT AND NOT A DETAILED RISK ASSESSMENT OF ALL ANTICIPATED ACTIVITIES ON SITE	

Activity	Risk to Safety	Risk to Health	Risk to Environmental	Risk to Public Safety	Control Measures
Brickwork	Physical injury, Fatality				PPE, Use of Scaffolding
Roofing	Physical injury, Fatality				PPE, Use of Scaffolding
Plastering	Skin irritation, temporary blindness	Long term breathing problems	Ground contamination	Dust inhalation	Use of PPE, guarding off site on work areas
Paintwork	Skin irritation, temporary blindness	Long term breathing problems	Ground contamination	Air pollution	Use of PPE, guarding off site on work areas
Construction activities / demolition	Temporary deafness	Permanent deafness	Noise pollution	Noise pollution	Guarding / barricading of site
Moving machines	Driven over by machines	Injury to workers	Fuel spillage	Driven over by machines	Signage and slow driving

You can list all activities on a separate page to address this issue (the above table is just for reference purposes).

M

A. EASTERN CAPE INFRASTRUCTURE INPUT MATERIAL

PROJECT NAME	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
PROJECT DESCRIPTION (SCOPE)	**TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS**
SCMU NUMBER	**SCMU5-23/24-0073**
CONTRACTOR NAME:	

1. Below is the list of building materials which must be sourced from Eastern Cape-based suppliers, manufacturers or accredited agents.
2. On a monthly basis, the contractor will report the purchasing of any of this material.
3. The report will then be communicated to PT & OTP on a quarterly basis at whichever intervals, as prescribed by PT & OTP.

A. BUILDING MATERIAL LISTS– BUILDING-RELATED STRUCTURES (NEW, REFURBISHMENTS & RENOVATIONS)

ITEM	BUILDING MATERIAL (TYPE)	ESTIMATE AMOUNT (Rands)
1	**Foundations:**	
1.1	Concrete	
1.2	Reinforcement	
1.3	Brickwork	
2	**Superstructure:**	
2.1	Brickwork	
2.2	Brickwork Sundries	
2.3	Lintels (precast concrete)	
2.4	Roof Structure (Steel Structures)	
2.5	Roof Covering (Steel)	

2.6	Rainwater Goods	
2.7	Doors (Timber)	
2.8	Doors Frames (Steel)	
2.9	Aluminium windows	
2.10	Aluminium doors	
3	**Internal Finishes:**	
3.1	Floor finishes and skirtings (Vinyl and screeds)	
3.2	Internal Plaster	
3.3	Internal Wall Finishes	
3.4	Waterproofing products	
4	**Services:**	
4.1	Plumbing Pipes	
4.2	Plumbing Fittings	
5	**External Works:**	
5.1	Paving	
5.2	Kerbing	
5.3	Fencing	
5.4	Stormwater pipes	

5.5	Stormwater channels	
5.6	Water pipes	
5.7	Sewer Pipes	
	TOTAL	

B. CONFIRMATION

1. I……(***Contractor name***) acknowledge and confirm the above mentioned material will be sourced in the Eastern Cape Province, from Eastern Cape based material suppliers and manufacturers.
2. I confirm that on monthly basis I will produce a proof of purchase of this material used or to be used, either in the form of delivery notes, tax invoices or any formal document which verifies that the material or goods were sourced from an Eastern Cape based supplier or manufacturer.

---------- ---------- ----------
Representative of the Contractor (Name) Signature Date

C1.2: CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

GENERAL CONDITIONS OF CONTRACT

The *General Conditions of Contract for Construction Works,* Third Edition, 2015, published by the South African Institution of Civil Engineering, is applicable to this Contract. (Short title: "General Conditions of Contract 2015).

The document is available from the South African Institution of Civil Engineering, Tel: 011 805 5947, web page: www.saice.org.za.

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

SPECIAL CONDITIONS OF CONTRACT

The Special Conditions of Contract (SCC) in the table below shall amplify, modify, or supersede, as the case may be, the General Conditions of Contract.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or sub-clause in the GCC 2015.

Special Conditions of Contract

Clause	Amendments
SCC2.4.1	*Add at the beginning of the sub-clause*: "The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence: (a) The Form of Offer and Acceptance (b) The Contract Data (c) The Special Conditions of Contact (d) The General Conditions of Contract (e) The Particular Specifications (f) The Variations and Additions to the Standardized Specifications (g) The Standardized Specifications (h) The Drawings (i) The Schedules and any other documents forming part of the Contract" *At the end of the sub-clause replace the full stop by a comma and add:* "using the above order of priority as reference."
SCC4.4.2	Liability for subcontractors *Add the following to Clause 4.4.2 after the last sentence:* "The Contractor shall not subcontract any part of the Contract without the prior written consent of the Employer's Agent, which consent shall not be unreasonably withheld."

Special Conditions of Contract

Clause	Amendments
SCC5.6.4	*Add to the sentence after "Contractor" and before the colon:* "within 7 days after receiving the instruction from the Employer's Agent"
SCC5.7.1	*Add to the end of the clause:* "Failure to comply with the requirements of presenting a programme and any adjustments thereto as instructed by the Employer's Agent, shall entitle the Employer's Agent to use a programme based on his own assumptions to evaluate claims for extension of time for completion of the works, or for additional compensation."
SCC 5.11.4	*Add the following new sub-clause:* "The Contractor may, after giving fourteen (14) days written notice to the Employer, with a copy to the Engineer, (with specific reference to this sub-clause) suspend the progress of the Works where the Engineer or the Employer has failed in terms of sub-clause 6.10.4 to: 5.11.4.1 Deliver a payment certificate, or 5.11.4.2 Make full payment of the amount certified in the payment certificate, within the times prescribed in the sub-clause, without prejudice to the Contractor's other rights under this Contract or in law."
SCC5.14.1	Practical Completion *Replace the last sentence of the second paragraph:* "Should the Engineer … on the Due Completion Date." *with the following:* "Should the Engineer not issue such a list within 14 days, Practical Completion shall be deemed to have been achieved on the said fourteenth day."
SCC5.14.2	Issue of Certificate of Practical Completion *Replace* "the Engineer" *in the second line with the following:* "the Contractor shall notify the Engineer, who shall inspect the Works and the Engineer"
SCC5.14.4	Certificate of Completion *Replace* "the Engineer" *in the second line of the first paragraph with:* "the Contractor shall notify the Engineer, who shall inspect the Works and the Engineer"
SCC6.2.1	*In the last line of the sub-clause delete "selected" and replace with:* "specified".
SCC6.2.2	*Delete this sub-clause entirely*

Special Conditions of Contract

Clause	Amendments
SCC6.2.3	*In the first two lines delete the text " If the Contractor…….ensure that it" and replace with* "The Contractor shall ensure that the performance guarantee"

PART 1: DATA PROVIDED BY THE EMPLOYER

Clause	Contract Data
1.1.1.5	The Commencement Date shall be the date on which the Contractor receives a copy of the signed Form of Offer and acceptance and schedule of deviations if applicable or on any other date thereafter to which the Employer may agree to.
1.1.1.13	The Defects Liability Period is 12 months, measured from the date of the Certificate of Completion.
1.1.1.14	The time for achieving Practical Completion, from the Commencement Date is 10 months. The period as stated in 5.3.2, and 5.3.3, are included in the above time for achieving Practical Completion. The Operation and Maintenance Period is 24 months. The special non-working dates are stated in 5.8.1 are excluded from the above time for achieving Practical Completion
1.1.1.15 & 1.2.1.2	The Employer's address for receipt of communications and notices is: EASTERN CAPE DEPARTMENT OF HEALTH Dukumbana Building Independence Avenue Bhisho 5605 The Implementing Agent's address for receipt of communications and notices is: EASTERN CAPE DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE Physical address: Postal address: 3rd Floor. Office 3-46 Private Bag X0022 Independence Avenue Bhisho Qhasana Building, Bhisho 5605 5605
1.1.1.16	The Employer's Agent for receipt of communications and notices is Triakon Engineering (Pty) Ltd D20 Waterford Court Die Hoewes 0157
1.1.1.26	The Pricing Strategy is a Re-measurement Contract.

3.1.3	The Employer's Agent shall obtain the specific approval of the Employer before executing any of the following functions or duties: 1. Issuing instructions for dealing with fossils and the like in terms of Clause 4.7. 2. Authorizing the Contractor to repair and make good, excepted risks in terms of Clause 8.2.2.2. 3. Issuing a variation order in terms of Clause 6.3. 4. Reducing a penalty for delay in terms of Clause 5.13. 5. Agreeing the adjustment of the sums for general items in terms of Clause 6.11.1.
5.2.1	The Commencement Date shall be the date the Contractor receives a copy of the contract that has been fully completed and signed by the Employer.
5.3.1	The documentation required before commencement with the Works execution is: 1. Health and Safety Plan (Refer to the Health and Safety Specification). 2. Environmental Site Management and Rehabilitation (ESM&R) Plan (Refer to Environmental Management Plan). 3. Initial programme (Refer to Clause 5.6.1). 4. Security (Refer to Clause 6.2.1). 5. Insurances (Refer to Clause 8.6.1).
5.3.2	The Contractor is required, within 14 days of the Commencement Date, to submit the documents listed below to the Employer's Agent for his approval. **Health and Safety Plan** A health and safety plan in terms of Clause 7(1) of the Construction Regulations (2014). **Environmental Site Management and Rehabilitation (ESM&R) Plan** (Refer to Environmental Management Plan in the specifications). **Initial Programme** An Initial Programme of work in terms of Clause 5.6. **Security** A guarantee from an Insurance Company to be jointly and severally bound with the Contractor for an amount equal to ten per cent (10%) of the Contract Price. The wording of the Guarantee shall be identical to the pro forma currently in use by the Employer on civil engineering contracts. **Insurance** Submit copies of receipts of registration, or payment for the premiums for the following insurances, as required by the new Clause 8.6 in this Contact Data. (a) Proof of registration with the Department of Labour as an employer, in terms of the Compensation for Occupational Injuries and Diseases Act 1993, as amended. (b) Common Law Liability Insurance for the duration of the Contract Period and with a minimum Limit of Indemnity of not less than R5 000 000 for any one accident but the Contractor must assess the risk and provide for additional cover at his own cost; (c) Insurance on an All Risks basis for construction plant, equipment and other things (except those intended for incorporation into the works) brought onto the site to the full value of such construction plant, equipment and other things; (d) Motor Vehicle Liability Insurance, comprising a minimum of Balance of Third Party motor risks, including Passenger Liability, subject to a minimum limit of R2,5 million but the Contractor must assess the risk and provide for additional cover at his own cost. (e) Where the Contract involves manufacturing and/or fabrication of the works or part thereof at premises other than the site, the Contractor shall satisfy the employer that all materials and equipment for incorporation in the works are adequately

<table>
<tr><td></td><td>insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such works during manufacture or fabrication, then such interest shall be noted by endorsement to the Contractor's Policies of Insurance.

(f) Imported equipment or component parts or materials to be supplied in terms of this Contract which require any process of assembly or finishing in South Africa prior to delivery to the site are to be insured by the Contractor up to the commencement of transit to site of the assembled or finished equipment, component parts or materials, unless special arrangements are made with the Employer.

These insurances shall be maintained in force for the duration of the Contract, including any Defects Liability Period and O & M period and in respect of Sub-Contractors, the Contractor shall be deemed to have complied with the provisions of the requirements relating to insurance by ensuring that the Sub-Contractors have effected such insurance..</td></tr>
<tr><td>5.4.2</td><td>The access to the site shall not be exclusive to the contractor.</td></tr>
<tr><td>5.6</td><td>Add the following sub-clause 5.6.6 to Clause 5.6:

"Failure on the part of the Contractor to deliver to the Engineer, the
• programme of the Works in terms of Clause 5.6.1 and
• supporting documents in terms of Clause 5.6.2

within the period stated in the Contract Data, shall be sufficient cause for the Engineer to retain 25 percent of the value of the Fixed Charge and Value-related items in assessment of amounts due to the Contractor, until the Contractor has submitted aforementioned first Programme of the Works and Supporting Documents".</td></tr>
<tr><td>5.8.1</td><td>The non-working days are Saturdays and Sundays.

The special non-working days are:
• Public holidays not falling within the year end break.
• The year-end break commencing on the first working day after the 15th December and ending on the first working day after 5th January of the following year.
• Any additional statutory public holiday proclaimed during the construction period.</td></tr>
<tr><td>5.12.2.2</td><td>In the event of normal climatic conditions, the number of working days per month that can be expected to be lost as a result of rainfall and extreme winds are shown in Table 5.12.2.2. The Contractor shall allow for these number of days in his programme.

<table>
<tr><td></td><td>Precipitation</td></tr>
<tr><td>Months</td><td>Normal</td></tr>
<tr><td>January</td><td>10</td></tr>
<tr><td>February</td><td>9</td></tr>
<tr><td>March</td><td>9</td></tr>
<tr><td>April</td><td>6</td></tr>
<tr><td>May</td><td>4</td></tr>
<tr><td>June</td><td>3</td></tr>
<tr><td>July</td><td>3</td></tr>
<tr><td>August</td><td>5</td></tr>
<tr><td>September</td><td>7</td></tr>
<tr><td>October</td><td>10</td></tr>
<tr><td>November</td><td>12</td></tr>
<tr><td>December</td><td>10</td></tr>
<tr><td colspan="2">Tabular view for precipitation per month</td></tr>
</table>
</td></tr>
</table>

	During the execution of the Works, the Employer's Agent Representative will certify a day lost due to climatic conditions if at least 75% of the work force and plant on site could not work during that specific working day. All relevant facts regarding any work stoppages resulting from prevailing climatic conditions shall be recorded in the daily Site Diary. Extension of time as a result of abnormal climatic conditions shall be calculated monthly being equal to the number of working days certified by the Employer's Agent Representative as actually lost due to climatic conditions, less the number of days allowed for as in Table 5.12.2.2. These monthly values may be negative. The total extension of time shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as nil.
5.13.1	The penalty for failing to complete the Works by the due completion dates shall be R 5,500.00 per calendar day.
5.16.3	The latent defect period is 10 years.
6.2.1	The type of security shall be a Performance Guarantee, issued by an insurance company or bank, of 10% of the Contract Sum. If the Guarantor is an Insurance Company, it shall be one listed in the Financial Services Board "List of Registered Insurers" (see www.fsb.co.za). If the Guarantor is a bank it shall be one listed in the South African Reserve Bank list of "Registered Banks and Representative Offices" and appear either in the list of "locally Controlled Banks" or in the list of "Branches of Foreign Banks" (see www.resbank.co.za). The Performance Guarantee shall be provided in accordance with the approved format and wording as indicated in the Pro-Forma Performance Guarantee contained in the returnable documents.
6.2.2	Delete the entire contents of Clause 6.2.2 and replace with: "Failure to deliver an acceptable security as selected in the Contract Data within the stipulated period is a fundamental breach of Contract".
6.3	Omit the words "Provided that" under Clause 6.3.2 and omit Clause 6.3.2.1.
6.8.2	Contract Price Adjustment shall not apply on this contract.
6.10	Add to the end of Clause 6.10.1 the following paragraph: "The Contractor shall complete the 'Contractor's Monthly Report Schedule', which pro forma documentation is obtainable from the Engineer. Pursuant to Sub-Clause 6.10.1.8, these, duly signed by all concerned, together with the Contractor's statement and a VAT invoice in original format are to be submitted to the Engineer. Issue by the Engineer to the Employer and Contractor of any signed payment certificate is conditional to this information being fully endorsed, accurately and timeously submitted to the Engineer".
6.10.1.5	The maximum percentage advance on materials not yet built into the Permanent Works is 80% of the invoice value.
6.10.2	Add to the end of Clause 6.10.2 the following paragraph: "All documentary evidence of such materials shall be unambiguous with respect to ownership having fully passed to the Contractor on or before the date of submittal of the Contractor's monthly statement. Should the Contractor fail to supply unambiguous documentary evidence, he shall, prior to submittal of his monthly statement, deliver to the Employer a Guarantor Guarantee in the form contained in the Appendices to the Contract Data."
6.10.3	The percentage retention shall be 10% of the monthly amounts certified for payment. The Limit of retention money shall be 10% of the Contract Sum.
6.10.4	Delivery, dissatisfaction with and payment of payment certificate *Replace* "28 days" *in the seventh line with* "30 days".

8.6.1.1.2	The value of Plant and Materials supplied by the Employer to be included in the insurance sum is "Nil".
8.6.1.3	The limit of the liability insurance required is R10 000 000 for any single claim with the number of claims unlimited during construction and defects liability period.
10.5.2	Dispute resolution shall be by ad-hoc adjudication if necessary.
11.1.	**Minimum requirements of employees:** **Construction Manager (Site Agent):** The site agent must have at least a NQF 5 qualification directly relevant to the construction industry and a at least 7 years of experience in civil engineering construction of which at least 2 years in the position as Site Agent. The Site Agent must have experience in civil engineering construction that covers reservoirs or water treatment plants or wastewater treatment plants, retaining structures, or installations of services like sewers or water pipelines, or construction of pumping stations or other similar. **Contract Manager:** The Contracts Manager must have at least and NQF 5 qualification directly relevant to the construction industry and at least 10 years of experience in civil contracting of which at least 3 years in the position as Contract Manager. The Contract Manager must have experience in civil engineering construction that covers reservoirs or water treatment plants or wastewater treatment plants, retaining structures, or installations of services like sewers or water pipelines, or construction of pumping stations or other similar. The Contracts manager must also have experience as representative of the principal contractor on a project where the mechanical and electrical installations subcontractors was under his control. This includes water treatment plants, wastewater treatment plants or industrial processing plants. **Specialist Mechanical and Process Designer:** This Contractor must have in his employ experienced and qualified person(s) that has the theoretical contextual knowledge and experience to design biochemical processes for wastewater treatment and water purification plants. These persons must have at least a NQF 7 relevant qualification, and at least 15 years of experience and proof of the designs of plants that have been operational for at least 5 years. The Engineer may request to inspect these plants prior to granting approval for the plants and equipment that the Contractor proposes to install. The Contractor must ensure, prior to submission of his tender, that the owners of the plants consent to such inspections. The Process designer must liaise with the Engineer to seek approval of designs. He/ they must attend site meeting and inspections when required to do so. He/they must also be on-site during commissioning of the systems included in the Works. He must also control and be involved in the monitoring of the systems after commissioning to ensure compliance, fault tracing when systems or equipment fails and modification to the system should it be required. He must also be experienced with the design and commissioning of the mechanical installations like pumps and blowers.
12.1	Only contractors whose ECB Registration is for Three Phase installations will be considered and the contractor shall be of CIDB grading 3EB. Contractor to submit accreditation papers of the electrical contractor within fourteen days of being appointed

PART 2: DATA PROVIDED BY THE CONTRACTOR

Clause

1.1.1.9 The name of the Contractor is ……

1.2.1.2 The Contractor's address for receipt of communications is:

Physical address:	Postal address:
……	.....
……	.....
……	.....
……	.....

Telephone: .....

Fax: .....

E-mail: ……

6.5.1.2.3 The percentage allowance to cover overheads and charges shall be as per those stated in the Schedule of Quantities.

C1.3: PERFORMANCE GUARANTEE (PROFORMA)

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

Physical address:

"Employer" means: .....

"Contractor" means: .....

"Engineer" means: .....

"Works" means:

"Site" means: .....

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

"Contract Sum" means: The accepted amount inclusive of tax of R .....

Amount in words:

"Guaranteed Sum" means: The maximum aggregate amount of R.....

Amount in words:

"Expiry Date" means:

CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2 The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3 The Guarantor hereby acknowledges that:

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

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

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

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

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

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

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

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

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

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

6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7 Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8 Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9 Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

10 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

11 The Guarantor chooses the physical address as stated above for the service of all notices for al purposes in connection herewith.

12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

13 This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

14 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No. 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at

Date .....

Guarantor's signatory: (1) .....

Capacity .....

Guarantor's signatory (2) .....

Capacity .....

Witness signatory (1).....

Witness signatory (2).....

C1.4: AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 75 OF 1993)

THIS AGREEMENT made at .....

on this the ..... day of ..... in the year ……

between …… *[hereinafter called "the Employer"]* of the one

part, herein represented by .....

in his capacity as .....

and .....

[hereinafter called "the Mandatory"] of the other part, herein represented by.....

.....

in his capacity as .....

WHEREAS the Employer is desirous that certain works be constructed and has accepted a Tender by the Mandatory for **TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS.**

Construction, completion and maintenance of such Works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1 The Mandatory shall execute the work in accordance with the Contract Documents pertaining to this Contract.

2 This Agreement shall hold well from its Commencement Date, which shall be the date of a written notice from the Employer or Engineer requiring him to commence the execution of the Works, to either.

(a) The date of the Final Approval Certificate issued in terms of Clause 5.16.1 of the General Conditions of Contract (GCC 2015).

(b) The date of termination of the Contract in terms of Clauses 9.1, 9.2 or 9.3 (GCC 2015) of the GCC.

3 The Mandatory declares himself to be conversant with the following:

(a) All the requirements, regulations and standards of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following sections of The Act:

(i) Section 8 : General duties of employers to their employees;

(ii) Section 9 : General duties of employers and self-employed persons to persons other than employees;

(iii) Section 37 : Acts or omissions by employees or mandatories, and

(iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.

(b) The procedures and safety rules of the Employer as pertaining to the Mandatory and to all his subcontractors.

4 In addition to the requirements of Clause 8.4 of the GCC 2015 and all relevant requirements of the Contract, the Mandatory agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

5 The Mandatory is responsible for the compliance with the Act by all his subcontractors, whether or not selected and/or approved by the Employer.

6 The Mandatory warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

7 The Mandatory undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:

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

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

(c) The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Mandatory and/or his employees and/or his subcontractors.

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER: .....

WITNESS 1 .....…… 2

NAME 1 .....…… 2
(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATORY: .....

WITNESS 1 .....…….. 2 .....

NAME 1 .....…… 2
(IN CAPITALS)

CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatory in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on 20……,

Mr/Ms ..... whose signature

appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL

HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993) on behalf of .....

.....

SIGNED ON BEHALF OF THE COMPANY : .....

IN HIS/HER CAPACITY AS : .....

DATE : .....

SIGNATURE OF SIGNATORY : .....

WITNESS: 1. ..... 2.

NAME (IN CAPITALS): 1. ..... 2.

C1.3: DISPUTE RESOLUTION MECHANISM

C3.1.3: CIDB ADJUDICATOR'S AGREEMENT

This agreement is made on the . . . . day of . . . . between:. . . . . (name of company / organization) of . . . . (address) and. . . . . (name of company / organization) of . . . . (address) (the Parties) and. . . . . (name) of . . . . (address) (the Adjudicator).

Disputes or differences may arise/have arisen* between the Parties under a Contract dated . . . . and known as. . . . . and these disputes or differences shall be/have been* referred to adjudication in accordance with the CIDB Adjudication Procedure, (hereinafter called "the Procedure") and the Adjudicator may be or has been requested to act.

* Delete as necessary

IT IS NOW AGREED as follows:

1 The rights and obligations of the Adjudicator and the Parties shall be as set out in the Procedure.
2 The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the Procedure.
3 The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses in accordance with the Procedure as set out in the Contract Data.
4 The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.
5 The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

SIGNED by: ______________	SIGNED by: ______________	SIGNED by: ______________
Name:	Name:	Name:
who warrants that he / she is duly authorized to sign for and on behalf of the first Party in the presence of	who warrants that he / she is duly authorized to sign for and behalf of the second Party in the presence of	the Adjudicator in the presence of
Witness ______________	Witness: ______________	Witness: ______________
Name: ______________	Name ______________	Name: ______________
Address:	Address:	Address:

Date: _____ Date: _____ Date: _____

Contract Data

1	The Adjudicator shall be paid at the hourly rate of R. . . . . in respect of all time spent upon, or in connection with, the adjudication including time spent travelling.
2	The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to: a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs. b) Telegrams, telex, faxes, and telephone calls. c) Postage and similar delivery charges. d) Travelling, hotel expenses and other similar disbursements. e) Room charges. f) Charges for legal or technical advice obtained in accordance with the Procedure.
3	The Adjudicator shall be paid an appointment fee of R . . . . . This fee shall become payable in equal amounts by each Party within ….. days of the appointment of the Adjudicator, subject to an Invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 1 and/or item 2 of the Contract Data. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.
4	The Adjudicator is/is not* currently registered for VAT.
5	Where the Adjudicator is registered for VAT it shall be charged additionally in accordance with the rates current at the date of invoice.
6	All payments, other than the appointment fee (item 3) shall become due in 30 days after receipt of invoice, thereafter interest shall be payable at 5% per annum above the Reserve Bank base rate for every day the amount remains outstanding.

* Delete as necessary

PART C2: PRICING DATA

C2.1 Pricing Instructions

1. The pages in the schedule of quantities are numbered continuously. The tenderer must check the pages before he submits his tender, and if any pages are missing, duplicated, or unclear or contain obvious errors, the engineer should be notified to have these errors rectified.

2. The Project Specifications, the General Conditions of Contract, the Contract Data, the special conditions of contract if any, the drawings, site information and notice(s) to the tenderers are to be read in conjunction with the schedule of quantities.

3. Descriptions in the schedule of quantities are abbreviated and the schedule has been drawn up generally in accordance with the 1990 issue of Civil Engineering Quantities. Should any requirements of the measurement and payment Clause of the applicable standardised specification, or the project specification, or the project or standard specification or section conflict with the terms of the schedule, or, when relevant, the said Civil Engineering Quantities, the requirement of the standardised project, or project specification section, as applicable shall prevail.

   The measurement and payment Clauses of each specification, read together with the relevant Clauses of the project specification, set out what ancillary or associated activities are included in the rate for the works specified.

4. Unless otherwise stated, items are measured nett in accordance with the drawings and specifications, and no allowance has been made for waste. All quantities are provisional, and payment will be made after the actual quantities have been measured on site after completion of the works and agreed to.

5. The prices and rates to be inserted in the schedule of quantities are to be the full inclusive prices to the employer for the work described under each item. Such prices shall cover all costs and expenses that may be required in and for the construction of the work described, and shall cover the cost of all general risks, liability, and obligations set forth or implied in the documents on which the bid is based. These prices and rates must be nett and not include value added tax. Value added tax must be added as a separate item on the summary page.

6. A price or rate is to be entered against each item in the schedule of quantities, whether the quantities are stated or not. An item against which no price is entered will be considered to have a price or rate of R0-00. It will be accepted that items against which no price has been inserted are covered by other prices or rates in the schedule.

7. Arithmetical errors will be corrected in accordance with the Standard Conditions of Tender. (The tender price remains fixed, and rates and prices are adjusted and balanced.) it is important to note however, that such balancing will not include the altering of provisional sums made by the Engineer. Moreover, all balancing will be approved by the Engineer and/or Employer prior to it being accepted.

8. The contractor must not order the quantities of materials stated in the schedule of quantities until he has confirmed from the construction drawings or measurement on site and with the engineer that such quantities are in fact the correct quantities.
9. Reference to Clauses in this and other documents and drawings are generally abbreviated as follow:

   Document/ Source Abbreviation

   PS…. Project Specification

   BS….. Particular Specification

   SABS/ SANS SABS 1200 standardized specification

   E765 -….. Drawings

   LI Labour Intensive

10. An ordinary number in the reference column refers to the standardized specifications. A letter followed by a number in the reference column refers to an applicable Clause of the project specifications or particular specifications.

    The absence of a reference must not be construed that no specification is applicable. The tenderer must ensure that all the requirements of the project specifications and standard specifications are covered by the items and rates tendered. If he is of the opinion that a specific Item needs to be added, he must insert such an Item with a price or a rate as applicable. Therefore, the items in the schedule of quantities are considered to cover the project specifications entirely.

11. The tenderer must price and extend each item and total each section in the schedule of quantities in BLACK INK.

C2.2: Bill of quantities

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 1				
	PRELIMINARY AND GENERAL				
	Fixed-charge items:				
1.1	Contractual requirements:	Sum	1		
1.2	Setting Out of the works	Sum	1		
	Establishment of facilities on the Site				
1.3	Name Boards	Sum	1		
1.4	Facilities for the Engineer	Sum	1		
1.5	Facilities for the Contractor including offices, storage sheds, workshops, living accommodation, ablution and latrine facilities, tools, plant and equipment, water supplies, electric power, communications	Sum	1		
1.6	Deal with access, including construction of temporary access roads	Sum	1		
1.7	Remove temporary site roads and reinstate site	Sum	1		
1.8	Deal with traffic	Sum	1		
	Deal with water				
1.9	Deal with surface water	Sum	1		
1.10	Deal with subsurface water	Sum	1		
1.11	Other fixed-charge obligations	Sum	1		
1.12	Removal of Engineer's and Contractor's site establishment and reinstatement of site on completion	Sum	1		
	Health and safety:				
1.13	General safety obligations	Sum	1		
1.14	Risk assessment	Sum	1		
1.15	Health and safety plan	Sum	1		
1.16	Training	Sum	1		
1.17	Medical assessment of employees	Sum	1		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
1.18	All other costs to comply with the requirements of the OHS Act and Health and Safety specification	Sum	1		
	Time-related items:				
1.19	Contractual requirements:	Mth	10		
	Operation and maintenance of facilities on Site				
1.20	Facilities for Engineer	Mth	10		
1.21	Facilities for Contractor	Mth	10		
1.22	Deal with access, including construction and maintenance of temporary access roads	Mth	10		
1.23	Deal with traffic	Mth	10		
	Deal with water				
1.24	Deal with surface water	Mth	10		
1.25	Deal with subsurface water	Mth	10		
1.26	Deal with sewer flow	Mth	10		
1.27	Supervision and company head office overhead costs	Mth	10		
1.28	Other time-related obligations	Mth	10		
	Health and safety:				
1.29	General safety obligations	Mth	10		
1.30	Complying with Health and safety plan	Mth	10		
1.31	All other costs to comply with the requirements of the OHS Act and Health and Safety specification	Mth	10		
1.31	Other time related obligations not listed above	Mth	10		
1.32	Provision of Security Personnel	Mth	10		
1.33	Dealing with the Aquatic mitigation measures required in Specifications	Mth	10		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Value-related items:				
1.34	Value-related obligations	Sum	1		
	Existing services				
	Provision of equipment for detecting services				
1.35	Water and sewer pipes	Sum	1		
1.36	Electrical and other cables	Sum	1		
1.37	Other	Sum	1		
	Provision of Temporary Sceptic Tanks for the Hospital Sewage during Construction				
1.38	Complete Installation of Sceptic tanks	Sum	1		
1.39	Periodical deslugding of temporary tanks and disposal of waste at approved facility	mth	10		
	Facilities for Engineer				
1.40	Telephone calls, faxes, photocopy paper and consumables to be paid by Employer	Prov Sum	-	-	R20 000,00
1.41	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R20 000,00		
1.42	Internet connection (min 4 mbps speed) including data usage to be paid by Employer	Prov Sum	-	-	R20 000,00
1.43	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R50 000,00		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Environmental management				
1.44	Compliance with Environmental Management Plan and all other environmental requirements	Sum	1		
1.45	Environmental rehabiliation where required by the Engineer and Employer not covered under the specifications	Prov Sum	-	-	R80 000,00
1.46	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R80 000,00		
1.47	Environmental Control Officer	Prov Sum	-	-	R100 000,00
1.48	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R180 000,00		
1.54	**Miscellaneous**				
1.49	Survey for and preparation of as-built data	Sum	1		
1.50	Obtain all wayleaves from the relevant service authorities (e.g. Eskom, Telkom, etc.)	Sum	1		
1.51	Quaility management plan by Contractor	Sum	1		
1.52	Occupational Health & Safety Training requested by the Employer or additional requirements not covered in the scope	Prov Sum	-	-	R80 000,00
1.53	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R180 000,00		
1.54	Community liason	Prov Sum	-	-	R100 000,00
1.55	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R100 000,00		
1.56	Additional testing where instructed by Employer or Engineer	Prov Sum	-	-	R75 000,00
1.57	Percentage adjustment on the item above for	%	R75 000,00		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
1.58	EPWP-related Training as instructed by the Employer	Prov Sum	-	-	R100 000,00
1.59	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R100 000,00		
1.60	Institutional Social Development (Students and Graduates)	Prov Sum	-	-	R180 000,00
1.61	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R180 000,00		
	TOTAL SECTION 1 Carried to Summary			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 2				
	DAYWORKS (PROVISIONAL)				
	Daywork				
	Labour				
2.1	Skilled (incl. artisans)	h	45		
2.2	Semi-skilled	h	45		
2.3	Unskilled (incl flagmen)	h	45		
2.4	Foreman	h	45		
	Material				
2.5	(Not subject to price adjustments)				
2.6	Net cost of goods or material	Prov Sum	-	-	R100 000,00
2.7	Percentage adjustment on the item above for Contractor's overheads and profit *(State % and extend as an amount)*	%	R100 000,00		
	Hire of construction equipment (Wet Rates)				
2.8	Self-propelled grader (Cat 14H or similar)	h	45		
2.9	48 kW capacity TLB	h	45		
2.10	10m³ Tipper Truck	h	45		
2.11	Pneumatic-tyred roller with 10 to 25 tons	h	45		
2.12	Vibratory roller with 8 tons capacity	h	45		
2.13	20t Excavator	h	45		
	TOTAL SECTION 2 Carried to Summary			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 3 **DEMOLITIONS (PROVISIONAL)** Unless otherwise stated, prices are to include for demolishing and removing from the site the complete structures including surface beds, foundations, bases, structural steel, cladding, brickwork, services, etc, up to two meters below surface, including decommissioning and making good of services reticulation up to main supply/feed Descriptions and dimensions contained in this Schedule are approximate and it is the responsibility of the Contractor to familiarise him/her self either during the Site Inspection Visit of subsequent authorised visits during the Tender period as to the exact extent of the work including quantities, foundation depths, etc. and no claims of any kind whatsoever will be entertained in connection with the works, unless qualified with tender submission. The use of explosives will not be permitted, without prior approval by the Client. The contractor is responsible for locating a suitable spoil area for all material to be carted away from the site and is to allow for the haulage, royalty fees, etc in the rates for each item.				
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Existing Sewer Ponds				
	Removal of sludge and raw watsewater and the Demolition of existing sewer ponds				
3.1	Desludging of existing sewer ponds and disposing of waste at an approved facility	Sum	2		
3.2	Removal of sewer pond linings and disposing of at a facility located by the Contractor	Sum	2		
3.3	Demolition of existing sewer ponds including inlet works and sewer chanels	Sum	2		
3.4	Carting away concrete rubble to a facility located by the contractor (Provisional)	m^3	3600		
3.5	Excavation and carting away of surrounding contaminated soil to a facility located by the contractor (Provisional)	m^3	300		
	TOTAL SECTION 3: Carried to Summary			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 4 **WASTEWATER TREATMENT STATION :** **SITE LAYOUT AND EARTHWORKS**				
	Site Clearing				
4.1	Clear and grub areas of wastewater treatment station and reservoir site, including internal access roads:	m²	11 000		
	Remove and grub large trees and tree stumps of girth:				
4.2	Over 1,0 m and up to and including 2,0 m	No	10		
4.3	Over 2,0 m and up to and including 3,0 m	No	2		
4.4	Take down and dispose of existing fence Including swing gates	m	400		
4.5	Remove topsoil to nominal depth of 150mm and stockpile	m³	1 650		
	EARTHWORKS				
	Bulk excavation:				
4.6	Excavate in all materials for wastewater treatment platform for use to fill removed sewer ponds	m³	400		
4.7	Excavate in all materials for temporary sceptic tanks and reapply after completion	m³	300		
4.8	Temporary stockpile of material	m³	700		
	Extra over Items C3.6 & 3.7: Bulk excavation. Backfill to structures, using approved cohessionless material from stockpile				
4.9	To removed sewer ponds	m³	800		
4.10	To temporary sceptic tanks	m³	300		
4.11	To wastewater treatment station platform	m³	120		
4.12	Import G7 material from commercial sources, place and compact in not more than 150 mm layers	m³	480		
4.13	Import dumprock from commercial sources, place and compact in not more than 150 mm layers	m³	2 640		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Extra-over Items C3.6 & 3.7: Bulk excavation				
4.14	Hard rock excavation by means of explosives	m³	100		
4.15	Hard rock excavation without explosives (other methods)	m³	100		
	Restricted excavation:				
	Excavate for following in all materials and use or dispose:				
4.16	Wastewater treatment station footings	m³	40		
4.17	Valve chambers and the like	m³	23		
4.18	Stormwater culvert and headwalls	m³	15		
4.19	Subsoil pipework	m³	75		
4.20	Pipework between inspection chambers	m³	10		
4.21	Inspection chambers	m³	5		
4.22	Stormwater drainage pipework	m³	60		
4.23	Reno mattress	m³	60		
4.24	Stilling Basin complete with headwall	m³	15		
4.25	Sewer outlet pipe, infiltration gallery and septic tank	m³	75		
4.26	Cable conduits	m³	200		
4.27	Potable water pipeline	m³	180		
	Extra-over for restricted excavation				
4.28	Hand excavation in soft material	m³	50		
4.29	Hand excavation in intermediate material	m³	50		
4.30	Hard rock excavation	m³	65		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Topsoiling (to 150mm deep) from stockpile for:				
4.31	Embankments and cut slopes	m³	50		
4.32	Grassing of embankments by means of hydroseeding	m²	330		
4.35	**LAYERWORKS** **Wastewater Treatment Station and Temporary Sceptic Tanks**				
	Treatment of roadbed				
	Platform preparation and compaction of material to a minimum of 93% MOD AASHTO (or 100% for sand)	m³	1080		
	Subbase:				
4.33	Construct the subbase course using material from commercial sources.				
4.34	300 mm G5 selected material below station surface bed	m³	400		
4.35	150 mm G7 selected material for wastewater station platform layerworks	m³	300		
	Base				
	Construct the base course using material from commercial sources (G5 stabilized to C4) to a thickness of:				
4.36	150 mm G5 selected material to wastewater station platform compacted	m³	300		
	Process base material by:				
4.37	(d) Stabilization	m³	300		
4.38	Stabilizing using portland cement	t	30		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	KERBING **<u>Access Road and Treatment Station</u>** **Kerb Figure: 8C (incl concrete bedding)**				
4.39	Radius up to 4 m	m	20	Included elsewhere	R0.00
4.40	Radius over 4 m up to 20 m	m	16	Included elsewhere	R0.00
4.41	Radius over 20 m and straight sections	m	240	Included elsewhere	R0.00
	Kerb Type: 7 (incl concrete bedding)				
4.42	Radius up to 4 m	m	10	Included elsewhere	R0.00
4.43	Radius over 4 m up to 20 m	m	16	Included elsewhere	R0.00
4.44	Radius over 20 m and straight sections	m	920	Included elsewhere	R0.00
	SEGMENTED PAVING **<u>Reservoir and Pump Station</u>** Construction of paving complete on 20mm sand:				
4.45	80 mm thick Type S-A blocks (45MPa) in herringbone pattern	m²	3500	Included elsewhere	R0.00
4.46	Cutting units to fit edge restraints	m	112	Included elsewhere	R0.00
4.47	Cast in-situ kerbs	m	112	Included elsewhere	R0.00
	PIPELINES **Trench Excavation** Excavate in all materials for trenches, backfill, compact and disposal of surplus material for: Pipes of up to DN 300 mm for depths: **Over and Up to**				
4.48	0 m 2,0 m	m	150		
4.49	2,0 m 3,0 m	m	100		
4.50	3,0 m 4,0 m	m	10		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Extra Over Trench Excavations above:				
4.51	Hard rock excavation	m^3	45		
4.52	Boulder excavation Class A	m^3	45		
4.53	Boulder excavation Class B	m^3	45		
4.54	Hand excavation and backfill where ordered by the Engineer	m^3	100		
4.55	Backfill stabilised by 5% where ordered by the Engineer	m^3	25		
	Interconnecting Pipework				
	PVC pipes				
	Supply, lay and bed on bedding for flexible uPVC pipes, complete with couplings (Class 34) :				
4.56	110 mm dia	m	300		
4.57	200 mm dia	m	50		
	Extra over for PVC pipes for supplying, laying and bedding of uPVC specials with couplings				
4.58	90°, 110 mm dia bends (Class 34):	No	18		
4.59	Additional fittings that may be required	Prov Sum	-		
4.60	Percentage adjustment on the item above for Contractor's overheads and profit (state % and extend as an amount)	%	R0,00		
	HDPE pipes				
	Supply, lay and bed on bedding for HDPE PE 100 pipe				
4.61	DN 50 pipe, PN 10	m	10		
4.62	DN 63 pipe, PN 10	m	10		
4.63	DN 75 pipe, PN 10	m	10		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Extra over for HDPE pipes for supplying, laying and bedding of HDPE specials with couplings				
4.64	DN 50 pipe, PN 10	No	1		
4.65	DN 63 pipe, PN 10	No	1		
4.66	DN 75 pipe, PN 10	No	2		
4.67	45° DN 50 bends (PN 10)	No	2		
4.68	90° DN 75 bends (PN 16)	No	2		
	Supply and install subsurface drains complete:				
4.69	110mm dia uPVC subsoil drain complete around the wastewater treatment station structure including 4 x 90 deg bends	m	260		
4.70	110mm dia uPVC rodding eye with cap for subsoil pipes, complete with mass concrete for the above subsoils	No	6		
	STORMWATER STRUCTURES				
	Gabions and Reno Mattresses				
	Gabions of galvanised wire, 80 mm x 100 mm mesh, 2.7 mm dia wire:				
4.77	3.0 m x 1.0 m, 0.5 m	m^3	65		
4.78	3.0 m x 1.0 m x 1.0 m	m^3	65		
4.79	2.0 m x 1.0 m x 1.0 m	m^3	65		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Reno mattresses				
4.80	2.0 m x 1.0 m 0.3 m	m³	100		
	Geotextile				
4.81	Geotextile (A2 Bidim)	m²	400		
	Extra over for Gabions and Reno Mattresses				
4.82	Tie reno matress into concrete with Y16 eye bolts	No	300		
	Stormwater concrete structures				
4.83	Inspection concrete chamber	No	4		
4.84	Stormwater concrete headwall complete for up to 500 mm dia pipe, 20/19 MPa	No	6		
	Cast Iron Gratings, Covers, etc				
4.85	1000 x 600mm Saint Gobain double seal manhole cover and frame (Type 8B) with locking bar	No	2		
	TOTAL SECTION 4: Carried to Summary			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 5 **FENCING DWG: CIV-01-FC-01**				
5.1	Galvanised security fence with hot dip galvanised steel posts, stays, gates, etc including hot dip galvanised steel bolts, straining eye bolts, etc:				
5.2	Remove existing galvanised security fence with hot dip galvanised steel/ timber posts, stays, gates, etc including hot dip galvanised steel bolts, straining eye bolts, etc and cartaway to dumping site.	m	400		
5.3	Security fence 1,8m high formed of four 4mm straining wires passed through posts or fixed to posts and straining eye bolts, covered 100 x 50 x 2,5mm welded wire mesh (Class A) with vertical wires facing outwards secured to straining wires with galvanised 'Howgring' clips at 300mm centres. (posts elsewhere)	m	400		
5.4	700mm Diameter flatwrap razor wire (Class A) fixed to and including three straining wires passed through posts or fixed to posts or straining eye bolts with 2mm binding wire. (Posts elsewhere)	m	400		
5.5	75mm Diameter x 2.5mm intermediate post 2,40m long with and including mushroom cap, 150 x 150 x 3mm base plate welded on and cast into 400 x 400 x 600mm unreinforced concrete (15MPa/19mm) base.	No	214		
5.6	75mm Diameter x 2.5mm incline stay 2,5m long with and including150 x 150 x 3mm base plate welded on, top end flattened and bolted through post with two 10mm diameter bolts, the other end cast into 400 x 400 x 600mm unreinforced concrete (15MPa/19mm) base.	No	46		
	Carried forward			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward			R	
	FENCING DWG: CIV-01-FC-01				
5.7	100mm Diameter x 4,0mm straining, corner or gate post 3,0m long with and including mushroom cap, 175 x 175 x 3mm base plate welded on and cast into 400 x 400 x 600mm unreinforced concrete (15MPa/19mm) base.	No	32		
	Hot dip galvanised steel gates:				
5.8	Single swing gate 1,2 x 1,8m high overall formed of 50mm diameter x 2,5mm framing, transomes and bracing, covered with 1,8m high welded wire mesh on straining wires to match fencing, including three heavy duty adjustable eyebolt hinges, U-catch and 500mm long heavy duty chain welded on(posts elsewhere).	No	2		
5.9	Double swing gate 4,0 x 1,8m high overall formed of 50mm diameter x 2,5mm framing, transomes and bracing, covered with 1,8m high welded wire mesh on straining wires to match fencing, including 700mm diameter flatwrap razor wire, including three heavy duty adjustable eyebolt hinges, U-catch and 500mm long heavy duty chain welded on(posts elsewhere).	No	2		
	TOTAL SECTION 5 Carried to Summary			R	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 6 **TREATMENT STATION & ELEVATED TANK :** **STRUCTURAL WORKS**				
	Restricted excavation:				
	Excavate in all materials and use for embankment or backfill or dispose, up to 1 m deep, as ordered:				
6.1	For structure, from platform level established by bulk excavation, if applicable	m³	800		
6.2	Extra over restricted excavations item 6.1 for hard rock excavation (without explosives)	m³	100		
6.3	Extra over restricted excavations item 6.1 for hand excavations	m³	80		
	Importing of material:				
	Sand filling compacted to 100% of modified AASHTO density:				
6.4	Under Paving, false floor, surface beds (between channel brick walls, plinths, etc. in confined spaces)	m³	160		
6.5	In cable trenches (after installation of cables)	m³	30		
	Testing:				
6.6	Provision for additional tests as ordered by the engineer	Sum	1		
	WATER RETAINING CONCRETE				
	Scheduled formwork items: Degree of Acurracy II **Rough:**				
	Plane vertical to:				
6.7	Sides of bases and floor slabs and	m²	800		
6.8	Sides of walls	m²	1200		
6.9	Sides of beams	m²	25		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Box out holes/form voids:				
6.10	Square - 300 mm x 300 mm in 300 mm thick concrete	No	2		
6.11	Circular - 500mm diamneter in 300mm thick concrete	No	2		
6.12	Square - 900mm x 900mm in 300 mm thick concrete	No	1		
6.13	Square - 1,4 m x 2,7 m in 300 mm thick concrete	No	1		
6.14	Circular - 0mm - 200mm sleeves in 300mm thick concrete	No	30		
	Scheduled reinforcement items:				
	Mild steel bars:				
6.15	8 mm dia	t	0		
6.16	10 mm dia	t	0		
	High-tensile steel bars:				
6.17	10 mm dia	t	3,5		
6.18	12 mm dia	t	6		
6.19	16 mm dia	t	7		
6.20	20 mm dia	t	7		
6.21	25 mm dia	t	0,1		
6.22	32 mm dia	t	0		
	High tensile mesh in the following:				
6.23	Ref No 395 in surface beds and slabs	kg	3 367		
	Scheduled concrete items:				
	Blinding layer:				
	Grade 15 MPa/19 mm concrete to:				
6.24	50 mm thick in blinding	m^2	1200		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Joints:				
	Isolation joints :				
6.25	10 mm Jointex between vertical or horizontal concrete surface and brickwork, 230 mm wide	m	53		
6.26	Vertical construction joint in concrete walls 300mm wide	m	26		
6.27	Horizontal construction joint in concrete foors 400 mm	m	96		
	Sawn joints:				
6.28	4 mm x 40 mm saw-cut joint	m	36		
	Sealing of joints with two part polysulphide "Sondor Thioflex 600" sealant including backing cord etc.:				
6.29	4 mm x 10 mm in saw joints	m	36		
6.30	10 x 10 mm in isolation joints	m	127		
6.31	Allowance for application of expansion/movement joint bridging flexible waterstop	m	20		
6.32	Allowance for application of an expansive watertight seal in a construction joint	m	119		
	Manufacture (or supply) and erect precast elements for small units not exceeding 0,5 m³ of formed concrete:				
	The following types and sizes:				
6.33	35 MPa cover slabs, size 1 400 mm x 1 350 mm x 250 mm thick with100 kg/m³ reinforcing and recessed lifting lugs	No	2		
	Grouting:				
6.34	Under base plates	m³	0,5		
6.35	In walls	m³	1		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Casting items in concrete:				
6.36	Up to 300 mm nominal bore in up to 300 mm thick concrete	No	2		
6.37	Over 300 mm up to 600 mm nominal bore in up to 300 mm thick concrete	No	2		
	Subsoil drainage:				
6.38	Subsoil drainage - 450x450mm subsoil drain with 110 diamater perforated pipe (uPVC) core drain and 19mm clean stone wrapped in grade 3 geotextile.	m	430		
6.39	Kaytech wick drain GPW 100 to perimeter of structure at 1m centers.	m	300		
	Supply, fabrication, delivery and erection of steelwork:				
	Hot-dipped galvanized steel including erection bolts: Shop drawings to be submitted for the engineer`s approval prior to fabrication				
	Submersible pump hoist				
6.40	Hot-rolled sections	t	0		RATE ONLY
6.41	Cold-rolled sections	t	0		RATE ONLY
	Holding-down (HD) bolts:				
6.42	M20 Hilti Hit HY 200, 300 mm long HDG	No	16		
6.43	M20 Hilti Hit HY 200, 200 mm long HDG	No	12		
6.44	M16 chemical anchors 150 mm long	No	8		
	M16 chemical anchors 250 mm long	No	8		
6.45	M24 chemical anchors 300 mm long	No	12		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	STRUCTURAL STEELWORK (SUNDRY) ITEMS)				
	Handrails, including erection:				
	Galvanized steel industrial tubular handrails 1000 mm : Matlock or similar approved				
6.46	Handrail assembly complete	m	13		
6.47	Rails only (hand and knee rails measured)	m	74		
6.48	Stanchions only	No	38		
6.49	Closed ends	No	10		
6.50	Corners/bends	No	18		
6.52	Knees	No	10		
6.53	HD bolts, nuts and washers for each stanchion (fixed to concrete)	No	38		
	Flooring, complete and installed with frames:				
6.54	Rectagrid RS40 HDG grating, with 40 x 4,5 mm bars in both directions, banded	m²	36		
	Flooring, complete and installed (frames measured separately):				
	Open grid floors, hot-dipped galvanized:				
6.55	Rectagrid RS 40 or equal approved bonded gratings with 40 mm x 4,5 mm bearing bars, in suitable panel sizes	m²	28		
	TOTAL SECTION 6 Carried to Summary			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 7 **WASTEWATER STATION & ELEVATED TANK** **CONCRETE WORKS** **WATER RETAINING CONCRETE**				
	SCHEDULED FORMWORK ITEMS				
	Rough:				
	Vertical formwork to:				
7.1	External and Internal face of concrete sump as per DWG CIV-01-TP-01	m^2	400		
7.2	Vertical faces to mass concrete encasements	m^2	35		
7.3	Sump outlet walls and Bund walls	m^2	200		
7.4	Sump slab propped-up exceeding 1,5m high and not exceeding 3,5m high including removing formwork through 600 x 600 opening	m^2	180		
	Smooth (off-form):				
	Vertical formwork to:				
7.5	Sump surface bed, square in plan 250 mm high	m^2	100		
7.6	Access opening in slab, 250 mm high	m^2	1		
7.7	Sump columns 350mm square	m^2	135		
7.8	Sump wall, internal face	m^2	200		
7.9	Sump wall, external face	m^2	200		
7.10	Other slabs including beams and inverted beams	m^2	30		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	SCHEDULED REINFORCEMENT ITEMS				
	Mild steel bars:				
7.11	8 mm dia	t	0		
7.12	10 mm dia	t	0		
7.13	12 mm dia	t	0		
	High tensile steel bars:				
7.14	10 mm dia	t	1		
7.15	12 mm dia	t	3		
7.16	16 mm dia	t	4		
7.17	20 mm dia	t	0		
7.18	25 mm dia	t	0		
	SCHEDULED CONCRETE ITEMS				
	Blinding layer:				
	Class 15MPa/19 mm concrete for:				
7.19	Bases and surface beds, 50 mm thick	m^2	180		
	Watertight concrete:				
	Class 30 MPa/19 mm Watertight Concrete to:				
7.21	Surface Beds	m^3	170		
7.22	Sump floor (including thickenings in floor)	m^3	140		
7.23	Sump slab	m^3	12		
7.24	Sump slab propped-up exceeding 1,5m high and not exceeding 3,5m high including removing formwork through 600 x 600 opening	m^3	40		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Class 15 MPa/19 mm:				
7.25	Mass concrete for encasement of pipework and subsurface drain pipes under wall footing	m^3	50		
7.26	Mass concrete for filling overbreak of pipework and subsurface drain trenches below reservoir	m^3	55		
7.27	200 mm wide x 100 mm high divider strips under floor	m^3	2		
	Unformed surface finishes:				
	Wood-floated finish to:				
7.28	Top of floors and surface beds	m^2	300		
7.29	Top of upstand beams	m^2	3		
7.30	Top of column bases	m^2	50		
	Steel-floated finish to:				
7.31	Top of mass concrete under column footings & mass concrete encasements r and footings	m^2	125		
7.32	Top of walls	m^2	35		
7.33	Top of divider strips under floor	m^2	20		
7.34	Top of blinding	m^2	230		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
7.35	**Testing for watertightness (Concrete Sump)**	Sum	1		
	SUPPLY OF SPECIALS				
	Supply of the following SS 316 pipe specials, PN 10 with all jointing material				
7.36	DN 600 Inlet bend with extension end and bellmouth, 6mm wall thickness	No	1		
7.37	DN 600 overflow bend with extension end 6mm wall thickness	No	1		
7.38	DN 600 overflow pipe with bellmouth, 6mm wall thickness	No	1		
7.39	DN 600 outlet pipe, 6mm wall thickness	No	1		
7.40	DN 250 scour bend with extension end and bellmouth, 4mm wall thickness	No	1		
	Supply and install subsurface drains complete:				
7.41	110mm dia uPVC subsoil drain complete as per Dwg No.CIV-01-SW-01	m	320		
7.42	110mm dia uPVC ring subsoil system complete	m	225		
7.46	110mm dia uPVC Class 34 (solid wall)	m	90		
	Rodding eye with cap for subsoil pipes, complete with mass concrete encasement				
7.47	110mm dia uPVC	No	6		
	TOTAL SECTION 7.: Carried to Summary			**R**	

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 8 **GENERATOR ROOM & PUMPHOUSE** **SUPPLEMENTARY PREAMBLES** BRICKWORK Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick. Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats 'Flintkote 3' or equal and approved bitumen emulsion waterproof coating. Walls in thicknesses of more than one skin (one brick walls and cavity walls) shall have at least nine wire ties per m². Wire ties shall be galvanised steel "Butterfly" type and of sufficient length to allow not less than 75mm of each end to be built into brickwork Samples of all masonry building units, except those for walls described as 'load bearing', shall consist of a minimum of 6 units. Samples of building units to be used in walls described as 'load bearing' shall consist of 30 units from every 30 000 units delivered to site. Additional ties every 4th course (340mm) at sides of openings and discontinuities in masonry.				
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Fair faced brick-on-edge header course, copings, sills, etc of approved 21MPa NFX E bricks (prime cost of R3 500.00 per thousand exclusive of VAT delivered to the site), pointed with recessed joints on all exposed surfaces:				
8.1	Extra over for fair face	m²	116	Included elsewhere	R0.00
8.2	Fair racking cutting	m²	23	Included elsewhere	R0.00
8.3	108 x 70mm Lintels in lengths exceeding 1.5m not exceeding 3.0m.	m	13	Included elsewhere	R0.00
8.4	108 x 70mm Lintels in lengths exceeding 3m not exceeding 4,5m.	m	25	Included elsewhere	R0.00
	Brickwork of NFP bricks in class II mortar:				
8.5	Piers and pilasters.	No	1	Included elsewhere	R0.00
8.6	Half brick walls.	m²	88	Included elsewhere	R0.00
8.7	Half brick walls in beamfilling.	m²	16	Included elsewhere	R0.00
	10mm Bitumen impregnated fibre board built in vertically between brick surfaces not exceeding 300mm wide.				
	Galvanised brick reinforcement:				
8.8	75mm Wide reinforcement built in horizontally.	m	50	Included elsewhere	R0.00
8.9	150mm Wide reinforcement built in horizontally in foundations.	m	200	Included elsewhere	R0.00
8.10	150mm Wide reinforcement built in horizontally in cavity walls	m	950	Included elsewhere	R0.00
8.11	One layer 250µm black polyethylene waterproof sheeting (SANS 952-1985 Type C) laid with minimum 150mm overlaps and sealed with pressure sensitive tape:	m²	115	Included elsewhere	R0.00
8.12	1.6mm mild steel Galvanised 1800 x 920mm Transformer Doors complete with frames (22kg/m)	No	2	Included elsewhere	R0.00
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	ROOF COVERINGS Roof coverings: The roof sheeting system is to be installed in strict accordance with the Manufacturer's and/or Supplier's specifications. Fixing of all roof sheeting is to be in accordance with the Manufacturer's approved instruction book. The Manufacturer shall comply with ISO9002 Quality Management System. A written and approved five year guarantee of the site workmanship and watertightness shall be issued after final inspection of the roofing by the Manufacturer. PROFILED METAL SHEETING AND ACCESSORIES 0.60mm IBR 686 profile ZincAl AZ150 spelter ColorPlus coated one side G550 steel roof sheeting in single lengths and accessories fixed in strict accordance with manufacturer's instructions to timber purlins at not exceeding 1500mm centres:				
8.13	Roof covering with pitch not exceeding 25° in transportable lengths not exceeding 20m.	m²	125	Included elsewhere	R0.00
8.14	Ridge capping 462mm girth, three times bent along girth.	m³	22	Included elsewhere	R0.00
8.15	Barge flashing 462mm girth, three times bent along girth.	m	33	Included elsewhere	R0.00
8.16	Narrow flute moulded polyethylene eaves closer to suit profile.	m	43	Included elsewhere	R0.00
8.17	Broad flute moulded polyethylene ridge closer to suit profile.	m	43	Included elsewhere	R0.00
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	PROFILED POLYCARBONATE SHEETING 1.25mm Polycarbonate IBR 686 roof sheeting in panels between metal sheeting (metal sheeting elsewhere) with White Opal 50 finish fixed in strict accordance with manufacturer's instructions to timber purlins at not exceeding 1500mm centres:				
8.18	Roof covering with pitch not exceeding 25° in transportable lengths not exceeding 20m.	m²	3	Included elsewhere	R0.00
	TOTAL SECTION 8: **Carried to Summary**			**R**	**0.00**

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 9				
	ACCESS ROAD				
	Site Clearing				
9.1	Clear and grub areas of wastewater treatment station and roadway including internal access roads:	m²	11 000		
	Remove and grub large trees and tree stumps of girth:				
9.2	Over 1,0 m and up to and including 2,0 m	No	10		
9.3	Over 2,0 m and up to and including 3,0 m	No	2		
9.4	Take down existing fence	m	400		
9.5	Remove topsoil to nominal depth of 150 mm and stockpile	m³	3 055		
	EARTHWORKS				
9.6	Cut to fill for site access roads	m³	3 600		
9.8	Import to fill for access roads, minimum G7 quality material	m³	1 230		
9.9	Temporary stockpile of material	m³	500		
	Extra-over for bulk excavation:				
9.10	For hard rock excavation	m³	80		
	Topsoiling (to 150 mm deep) from commercial sources for:				
9.11	Embankments and cut slopes	m²	1 400		
9.12	Grassing of embankments by means of hydroseeding	m²	1 400		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	LAYERWORKS				
	Treatment of roadbed				
9.13	Roadbed preparation and compaction of material to a minimum of 93% MOD AASHTO (or 100% for sand), 150 mm thick	m³	1 460		
9.13	150 mm G7 selected material compacted to 93% MOD AASHTO	m³	1 260		
	Subbase:				
	Construct the subbase course using material from commercial sources.				
9.14	150 mm G5 wearing course compacted to 95% MOD AASHTO	m³	1 110		
	Base:				
	Construct base with material from commercial source:				
9.15	150mm C4 Compacted to 96% MOD AASHTO	m³	180		
	Segmented Paving				
	Construction of paving complete				
9.16	80mm Thick Type S-A blocks on 20mm sand:	m²	1 400	Included elsewhere	R0.00
	KERBING AND CHANNELING				
	Precast concrete edging				
	Kerb: type E1 (Fig.10)	m	600	Included elsewhere	R0.00
	Ancillary Roadworks				
9.17	Supply and erect galvanized guardrails on timber posts	m	40		
	Supply and erect permanent regulations road sign				
9.18	"STOP" sign (R1) 610mm DIA	No	3		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	STORMWATER				
	Pipe Trenching				
9.19	Excavate in all materials for trenches, backfill, compact and dispose of surplus material for:				
	Pipes up to 600 mm dia for depths:				
	Over and Up to				
9.20	0,0 m 1,0 m	m	43		
9.21	1,0 m 2,0 m	m	15		
9.20	Side drains in all materials	m^3	1 210		
9.22	Additional excavation in all material for stone pitching	m^3	1 130		
	Extra-over item 9.22 for:				
9.22	Excavate unsuitable material from trench bottom and dispose of off site	m^3	30		
9.23	Hard excavation	m^3	80		
	Excavation ancillaries				
	Make up deficiency in backfill material:				
9.24	From other necessary excavations on Site	m^3	505		
9.25	Additional compaction in road reserves	m^3	505		
	SECTION LB: BEDDING (PIPES)				
	Provision of bedding from trench excavation				
9.26	Selected granular material	m^3	15		
9.27	Selected fill material	m^3	20		
	From other necessary excavations:				
9.28	Selected granular material	m^3	15		
9.29	Selected fill material	m^3	20		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	From commercial sources: (Provisional)				
9.30	Selected granular material	m^3	15		
9.31	Selected fill material	m^3	20		
	Existing services that intersect or adjoin a trench				
	Services that intersect a trench:				
9.32	Watermains up to 200 mm dia	No	5		
9.33	Sewers up to 200 mm dia	No	5		
9.34	Stormwater pipes 300 mm to 600 mm dia	No	5		
9.35	Cables	No	5		
	Services that adjoin a trench:				
9.36	Watermains up to 200 mm dia	m	5		
9.37	Sewers up to 200 mm dia	m	5		
	SECTION LE: STORMWATER DRAINAGE				
	Pipes				
	Supply, lay, joint and bed Class C reinforced concrete pipes Type SC Class 100D with ogee joints wrapped with geofabric				
9.38	375 mm dia	m	65		
9.39	450 mm dia	m	10		
9.40	525 mm dia	m	10		
9.41	600 mm dia	m	15		
	Headwalls				
	Supply and install Inlet Structure				
9.42	On pipes up to 450 mm dia	No	2		
9.43	On pipes up to 600 mm dia	No	2		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				
	Supply and install headwall				
9.44	Pipes up to 450 mm dia	No	6		
9.45	Pipe up to 600 mm dia	No	2		
	Gabions and Pitching				
	Medium grouted stone pitching for:				
9.46	Side drain	m^2	2 400	Included elsewhere	R0.00
9.47	Headwall outlet	m^2	25	Included elsewhere	R0.00
	Concrete Small Works				
	Repair or replacement of existing road side drain at access road intersection				
9.48	Formwork: Rough	m^2	40		
9.49	20MPa Concrete	m^3	20		
	Retaining Walls				
	Terraforce L13 precast concrete interlocking blocks finished smooth on exposed surfaces:				
9.50	Retaining walls with stepped face and curves as required comprising one row of 340 x 425 x 225mm high interlocking blocks per course laid with horizontal bed joints and 10MPa/19mm concrete keys to suit slopes including filling units with selected earth obtained from excavations and/or prescribed stock piles compacted to 90% Mod ASSHTO density as the work proceeds.	m^2	25		
9.51	Extra over last for 850 wide x 250mm thick unreinforced concrete (15MPa/19mm) strip footing cast against excavated surfaces including excavation, risk of collapse, keeping excavations free from water, backfilling and carting away surplus excavated material.	m	5		
9.52	Ditto but for filling top row of blocks with unreinforced concrete (15MPa/19mm).	m	5		
	TOTAL SECTION 9: Carried to Summary				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	SECTION: 10 **SPECIALIST WORK & PROVISIONAL SUMS**				
10.1	Provide the sum of R9 500 000.00 (Nine Million Five Hundred Thousand) for the procurement and installation of a 200kl/day Waste Water Treatment Plant Civil Works are Measured Elsewhere. The contractor is to submit at least three itemised commercial proposals(quotes) from specialists for the engineer`s approval before appointing a subcontractor.	Prov Sum	-	-	R 9 500 000,00
10.2	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R9 500 000,00		
10.3	Provide the sum of R3 500 000.00 (Five Million Rand) for the procurement and installation of a 200kl/ elevated storage tank including HD bolts - Civil Works are Measured Elsewhere. The contractor is to submit at least three itemised commercial proposals(quotes) from specialists for the engineer`s approval before appointing a subcontractor.	Prov Sum			R 3 500 000,00
10.4	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R3 500 000,00		
10.5	Provide the sum of R650 000.00 for Geotechnical surveys, to be used by the Engineer	Prov Sum	-	-	R 650 000,00
10.6	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R650 000,00		
10.7	Provide the sum of R300 000.00 for Topographical Surveys, to be used by the Engineer	Prov Sum	-	-	R 300 000,00
10.8	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R300 000,00		
10.8	Provide the sum of R1 100 000.00 for EIA & WULA, to be used by the Engineer	Prov Sum			R 1 100 000,00
10.9	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R 1 100 000,00		
10.10	Provide the sum of R700 000.00 for Effluent testing and monitoring, to be used by the Engineer	Prov Sum			R 700 000,00
10.11	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R 700 000,00		
10.12	Provide the sum of R465 116.28 for Mechanical Works, to be used by engineer	Prov Sum			R 465 116,28
10.13	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R 465 116,28		
	Carried forward / …				

Item No	Short Description	Unit	Quantity	Rate	Amount R c
	Brought forward / …				0,00
	PROVISION SUMS FOR SMME PACKAGES				
10.14	Provide the sum of R2000 000.00 for Paving and Kerbing works, to be used by the Engineer	Prov Sum			R 2 000 000,00
10.15	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R 2 000 000,00		0,00
10.16	Provide the sum of R150 000.00 for Stone Pitching Drains, to be used by the Engineer	Prov Sum			150 000,00
10.17	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R 150 000,00		0,00
10.18	Provide the sum of R180 000.00 for the Generator Room and Pump House, to be used by the Engineer	Prov Sum			R 185 000,00
10.19	Percentage adjustment on the item above for Contractor's profit & attendance *(State % and extend as an amount)*	%	R 185 000,00		0,00
	TOTAL SECTION 10: Carried to Summary			**R**	**2 335 000,00**

SUMMARY

SECTION 1:	PRELIMINARY AND GENERAL	R	
	CIVIL WORKS		
SECTION 2:	DAYWORKS	R	
SECTION 3:	DEMOLITIONS	R	
SECTION 4:	SITE LAYOUT AND EARTHWORKS	R	
SECTION 5:	FENCING	R	
SECTION 6:	STRUCTURAL WORKS	R	
SECTION 7:	WATER RETAINING CONCRETE	R	
SECTION 8:	GENERATOR ROOM	R	0.00
SECTION 9:	MAIN ACCESS ROAD	R	
SECTION 10:	SPECIALIST WORK & PROVISIONAL SUMS	R	
	MECHANICAL AND ELECTRICAL WORKS		
SECTION E.1:	ELECTRICAL WORKS (IMPORTED FROM ELECTRICAL MINI BOQ)	R	
	TOTAL OF PRICED ITEMS	R	
	Allow 10% contingencies (*to be expended as directed by the Engineer and to be deducted in whole or in part if not required*)	R	
	SUB-TOTAL OF TENDER	R	
	Add 15% for Value Added Tax	R	
	GROSS TOTAL OF TENDER **Carried to Form C1.1, Form of Offer**	R	

SECTION A: BILL PREAMBLES & BILL OF QUANTITIES

GENERAL NOTES

1 This Bill of Quantities forms part of, and must be read in conjunction with the specification

2 The quantities given in the Bill for cables, cable markers, earth wire laid with cables and excavations cannot be regarded as exact and are subject to measurement on site after completion of the service and adjustments will be made according to the unit rates given in the bill.

In the event of discrepancies between the drawings, specifications and Bill of Quantities, the responsible engineer shall decide weather the work as executed shall be remeasured on site or whether re-measurement shall be effected from the working drawings only.

NOTE:
Checking of Cable Lengths

Notwithstanding the fact that the lengths of cables as given in the Bill of Quantities have been measured from scaled drawings, the contractor shall check such lengths on site before ordering the cable as he / she will not be paid for excess cables after the completion of the service. Any allowance for off-cuts shall be made in the unit rates. The final measurements shall be based on the nett route length of the cables concerned.

Checking of quantities for other materials
Notwithstanding the fact that the quantities for cables and accessories given in the Bill of Quantities have been measured from drawings, the contractor shall check such lengths on site before ordering the cable as he/she will not be paid for excess quantities after the completion of the service. Any ambiguous or dubious wording or quantities must be cleared with the responsible Engineer before work is started. Wrong interpretation of the specification and/or drawings and Bill of Quantities, resulting in alterations and/or additional costs, is solely the responsibility of the contractor.

3 Where alternative prices for the switchgear of different manufacture are quoted the lowest alternative price for switchgear as per the specification must be quoted against the relevant item in the Bill of Quantities. The remaining alternative prices must be furnished seperately.

4 The unit prices quoted in the Bill of Quantities must include for such small installation materials as are required for the complete installation in accordance with the specification.

5 All equipment, components and material shall be new, unused and best quality and shall comply with the relevant current specifications of the SABS, SANS and as stated in this document, wherever possible, be of South African manufacture.

6 No alteration, erasure or addition is to be made in the text of the Bill of Quantities. Should any alteration, erasure or addition be made, it will not be recognised but the original wording of the Bill of Quantities will be adhered to.

7 The Engineer will check the completed Bill of Quantities and reserves the right to adjust any individual price and to rectify any descrepancy whilst the total tender price as quoted remains unaltered.

8 Electrical materials associated with the external reticulation, for example termination accessories and wiring accessories, will not be re-measurable and the tenderer must therefore allow for the supply of all necessary accessories of materials for the successful execution and completion of the installation.

9 The unit rate for each item in the Bill of Quantities shall include for all materials, labour, profit, transport, etc., everything necessary for the execution and complete installation of the work in accordance with the description of the works.

10 The Bills of Quantities shall not be used for ordering purposes. The contractor shall check the lengths of cables on site and quantities of all other materials on drawings ordering any of these materials. Any allowance for off-cuts of cables shall be made in the unit rates.

11 The rates shall exclude Value-Added Tax (VAT) and the total carried over to the final summary.

12 The contractor is required to label all kiosks and distribution boards, supply and install all danger warning signs etc and all costs shall be deemed to have been provided for and included in the unit rates and sum amounts tendered for the items scheduled in the Bill of Quantities and separate additional payment will not be made.

13 Black ink shall be used for pricing the document, any other prices marked in other colours or pencil shall not be considered for the total price of the bill.

Item	Description	Unit	Qty	Rate	Amount
1	**BILL No. 1: SITE RETICULATION**				
1.1	**Distribution Boards**				
	Distribution boards complete with all MCBs, switchgear, accessories, sheet metal frames, sub-frames, busbars, terminals, wiring, conduit terminations, labelling, fixtures and fittings as specified, with all equipment fitted and equipped in factory all strictly as per schematic diagram. *(Please note that the distribution board's shop drawing should be submitted to the Engineer for approval prior to manufacture).*				
	DB - Generator Room				
1.1.1	Supply	No.	1		
1.1.2	Install	No.	1		
1.2	**Low voltage cables**				
	600/1 000V PVC/PVC/SWA/PVC ECC multi-core aluminium cable installed in sleeves (sleeves measured elsewhere)				
	25mm² 4 Core ECC				
1.2.1	Supply	m	160		
1.2.2	Install	m	160		
	4mm² 4 Core ECC				
1.2.3	Supply	m	20		
1.2.4	Install	m	20		
1.3	**Low voltage cable terminations (Glands & Shrouds)**				
	Make off and terminate the LV cable, complete with glands and shrouds including connection of cable to equipment terminals				
	25mm² 4 Core (No. 4)				
1.3.1	Supply	No.	8		
1.3.2	Install	No.	8		
	4mm² 4 Core (No. 0)				
1.3.3	Supply	No.	4		
1.3.4	Install	No.	4		
1.4	**Low voltage cable terminations (Lugs)**				
	Make off and terminate the LV cable, complete with lugs including connection of cable to equipment terminals				
	25mm² x 8mm				
1.4.1	Supply	No.	36		
1.4.2	Install	No.	36		
	4mm² x 6mm				
1.4.3	Supply	No.	16		
1.4.4	Install	No.	16		
1.5	**Earthing Conductors**				
	Bare stranded copper earth conductor installed in sleeves (sleeves measured elsewhere)				
	16mm²				
1.5.1	Supply	m	160		
1.5.2	Install	m	160		
	4mm²				
1.5.3	Supply	m	20		
1.5.4	Install	m	20		
1.6	**Earthing conductor terminations**				
	Make off and terminate earth conductor, including lugs and connections				
	16mm² x 8mm				
1.6.1	Supply	m	16		
1.6.2	Install	m	16		
	4mm² x 6mm				
1.6.3	Supply	No.	4		
1.6.4	Install	No.	4		
	Carried forward to next page				

Item	Description	Unit	Qty	Rate	Amount
	Brought forward from previous page				
1.7	**Earth Rods**				
	SABS approved copper earth rod				
	1500mm long 16mm diameter				
1.7.1	Supply	No.	4		
1.7.2	Install	No.	4		
1.7.3	Cadwelding termination of electrodes above	Ends	4		
1.8	**Sleeves**				
	Kabelflex high density (or equal and approved) polyethylene (HDPE) sleeve with double wall construction, corrugated outer wall and smooth inner wall finish inclusive of couplers, bends, etc				
	70mm diameter				
1.8.1	Supply	m	36		
1.8.2	Install	m	36		
1.9	**Draw wires**				
	Draw wire drawn into sleeves and conduits including approximately 300mm slack in boxes, distribution board, etc.				
	1.6mm² Galvanised steel draw wire				
1.9.1	Supply	m	200		
1.9.2	Install	m	200		
1.10	**Trench**				
	Excavate for new cable trenches, sleeves foundations, manholes, joint holes etc in soil (up to 1.0m deep). Backfilling shall be done in stages and thoroughly consolidated at each stage to prevent subsequent subsidence.				
	Pickable soil				
1.10.1	Supply	m³	90		
1.10.2	Install	m³	90		
	Bedding under the filling around cables comprising sifted sand				
1.10.3	Supply	m³	40		
1.10.4	Install	m³	40		
1.11	**Cable Warning Tape**				
	"Skull and Crossbones" danger tape, installed 100 mm above cable / sleeve				
	PVC Warning Marking Tape				
1.11.1	Supply	m	160		
1.11.2	Install	m	160		
1.12	**Cable Markers**				
	Pre-cast concrete cable markers, complete with aluminum marker plate, engraved with cable and / or sleeve details				
	Concrete Route Markers				
1.12.1	Supply	No.	6		
1.12.2	Install	No.	6		
1.13	**Cable Ladders**				
	Heavy Duty Galvanised Cable Ladder complete with cantilever hangers or suspension rods complete with all joints, bends, tees, splicing etc.				
	150mm wide cable ladder				
1.13.1	Supply	m	12		
1.13.2	Install	m	12		
1.14	**Cable Trays**				
	Heavy Duty Galvanised Cable Trays complete with cantilever hangers or suspension rods complete with all joints, bends, tees, splicing etc.				
	150mm wide cable tray				
1.14.1	Supply	m	12		
1.14.2	Install	m	12		
1.15	**Cable Trays**				
	40A Triple Pole MCB				
1.15.1	Supply	No.	1		
1.15.2	Install	No.	1		
	CARRIED FORWARD TO SUMMARY PAGE				

Item	Description	Unit	Qty	Rate	Amount
2	**BILL No. 2 - ELECTRICAL INSTALLATIONS**				
2.1	**Galvanised Steel Conduit**				
	Galvanised steel conduit including bending, short lengths, draw boxes, cutting,bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
2.1.1	Supply	m	450		
2.1.2	Install	m	450		
2.2	**Galvanised steel round boxes**				
	Surface or flush mounted 60mm deep Galvanised steel conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
2.2.1	Supply	No.	80		
2.2.2	Install	No.	80		
2.3	**Galvanised boxes**				
	Surface or flush mounted galvanised boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
2.3.1	Supply	No.	4		
2.3.2	Install	No.	4		
	100 x 100 x 50mm				
2.3.3	Supply	No.	4		
2.3.4	Install	No.	4		
2.4	**PVC insulated conductors**				
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	2.5 mm²				
2.4.1	Supply	m	200		
2.4.2	Install	m	200		
	4.0 mm²				
2.4.3	Supply	m	200		
2.4.4	Install	m	200		
2.5	**Bare copper earth conductors**				
	Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	2.5 mm²				
2.5.1	Supply	m	200		
2.5.2	Install	m	200		
2.6	**Socket outlets** Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc				
	16A, 230V, 3-pin double switched, flush mounted, complying with SANS 164-1 and SANS 164-2				
2.6.1	Supply	No.	3		
2.6.2	Install	No.	3		
	Carried forward to next page				

Item	Description	Unit	Qty	Rate	Amount
	Brought forward from previous page				
2.7	**Isolators**				
	20A DP Single phase isolator, surface mounted, weatherproof, IP67				
2.7.1	Supply	No.	2		
2.7.2	Install	No.	2		
2.8	**Pratley Boxes** Three way Y type Pratley/CCG IP67 weatherproof boxes complete with connector blocks				
	Ezee-Fit Size 1				
2.8.1	Supply	No.	2		
2.8.2	Install	No.	2		
2.9	**Light switches** Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals.				
	16A, 230V, 1 Lever 2 Way, rotary cam, IP67 weatherproof				
2.9.1	Supply	No.	2		
2.9.2	Install	No.	2		
2.10	**Photocell**				
	Photocell installed in a suitably sized rectangular bulkhead luminaire housing with clear UV stabilised high impact acrylic lens and labelling as specified				
	16A, 230V, Photocell				
2.10.1	Supply	No.	2		
2.10.2	Install	No.	2		
2.11	**Occupancy Sensors**				
	Ceiling/concrete slab mounted occupancy sensors for lighting control				
	10A, 250V, Passive 360º occupancy sensor				
2.11.1	Supply	No.	1		
2.11.2	Install	No.	1		
2.12	**Light fittings**				
	SABS approved light fittings as per the specification, complete with lamps,machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings.				
	Please note that all ceiling mounted lay in fittings shall be delivered with 3m of 1,5mm² flexible cabtyre with a 5 amp 3 pin plug top fitted.				
	Type AE: Surface mounted light fitting c/w 33W, LED, 5 609 lumens, IP66, 4 000K, UV stabilised polycarbonate diffuser, electronic control gear, one hour battery back-up and a 5year warranty.				
2.12.1	Supply	No.	3		
2.12.2	Install	No.	3		
	Type D: Surface mounted floodlight, high pressure die-cast aluminium powder coated body with injection-moulded, UV stabilised high-impact, non-discolouring acrylic diffuser, the diffuser shall be held to the body by four captive stainless steel Allen head screws c/w 54W LED, 9 335 lumens, IP66, electronic control gear and a 5year warranty.				
2.12.3	Supply	No.	4		
2.12.4	Install	No.	4		
	CARRIED FORWARD TO SUMMARY PAGE				

Item	Description	Unit	Qty	Rate	Amount
3	**BILL No. 3: EARTHING & LIGHTNING PROTECTION SYSTEM INSTALLATION**				
	Allowance should be made for the following electrical equipment.				
	70mm² PVC stranded copper conductor 600V/1000V grade drawn in conduit-down conductors shall be bonded to steel roof with M6 20mm long brass bolts, nuts and washers. Copper conductor shall be equiped with hexagon criped lig for bonding/termination.				
	70mm² bare stranded copper conductor laid in trench for the creation of ring earth electrode in trench, 800mm below ground.				
	8mm diameter solid aluminium round conductor surface mounted on aluminium guides				
	Joint between dissimilar materials to be done by crimping lugs on the two types of materials and bond the lugs with M6 20mm long brass bolts, nuts and washers.				
	Earth electrodes to be extensible copper clad steel rods 12mm diameter and 1500mm long driven into the ground to a depth of not less than 600mm below finished ground level.				
	Bonding between stranded copper conductors and earth electrodes to be done by CAD weld method. Bonding to steel reinforcing to be done with a U clamp, the copper conductor to be equipped with a lug.				
	Test points to be created between down conductors and earth electrode conductors equipped with lugs and bonded with M6 20mm long brass bolts, nuts and washers.				
	Site survey to be done prior to the installation and the soil resistivity shall be measured, the prevailing site conditions checked and a proposal submitted to the Engineer regarding the type of earthing.				
	Draw boxes, conduits equipped with draw wire placed in position for casting into concrete or screed, for building in or chased into concrete or brickwork and for surface mounted in ceiling voids including bending, threading, jointng, short lengths, draw boxes, couplings, bends, tees and saddles, etc. as specified.				
3.1	Conduct soil resistivity tests and submit results	Item	1		
	25mm diameter PVC conduit built into brickwork/ installed in ground				
3.2	Supply	m	30		
3.3	Install	m	30		
	70mm² PVC insulated copper down conductor				
3.4	Supply	m	30		
3.5	Install	m	30		
	70mm² bare stranded copper conductor installed in ground				
3.6	Supply	m	30		
3.7	Install	m	30		
	Test points between down conductor and earth electrode conductor installed complete with lugs, bolts, nuts and washers as specifed.				
3.8	Supply	No.	2		
3.9	Install	No.	2		
	Bonding of down conductors to roof sheetings installed complete with lugs, bolts, nuts and washers as specifed.				
3.10	Supply	No.	2		
3.11	Install	No.	2		
	Bonding of earth electrode conductors to earth electrodes installed complete with CAD weld, lugs, bolts, nuts and washers as specifed.				
3.12	Supply	No.	2		
3.13	Install	No.	2		
	12mm diameter 1500mm long extensible earth electrode complete installed 600mm below finished ground level				
3.14	Supply	No.	2		
3.15	Install	No.	2		
	Carried forward to next page				

Item	Description	Unit	Qty	Rate	Amount
	Brought forward from previous page				
	25mm x 3mm copper tape				
3.16	Supply	m	20		
3.17	Install	m	20		
	8mm² solid aluminium conductor				
3.18	Supply	m	40		
3.19	Install	m	40		
	Air discharge copper conductor				
3.20	Supply	No.	2		
3.21	Install	No.	2		
	Connection/test terminal on column inclusive of termination materials				
3.22	Supply	No.	2		
3.23	Install	No.	2		
3.24	Allow for any other cost you may deem necessary to complete the installation of the lightning protection system.	Item	1		
3.25	Testing and Commissioning	Sum	1		
3.26	Issue earth resistance test certificate	Sum	1		
	CARRIED FORWARD TO SUMMARY PAGE				

Item	Description	Unit	Qty	Rate	Amount
4	**BILL 4: STANDBY GENERATOR SYSTEM**				
4.1	Supply and install a new 25 kVA, 380V, 50Hz weatherproof standby generator c/w acoustic soundproof canopy, Automatic Mains Failure Panel (AMF), self-banded fuel tank, 12m x 110mm diameter galvanised steel exhaust pipe and all accessories to fit the exhaust.				
4.1.1	Supply	No.	1		
4.1.2	Install	No.	1		
4.2	**Reserve fuel tank**				
	Supply and install a new 1 000 litre self-banded reserve fuel tank complete with a manual pump and 10m hose pipe.				
4.2.1	Supply	No.	1		
4.2.2	Install	No.	1		
4.3	**Testing and commissioning**				
4.3.1	Testing and commissioning of the generator covered within the contract	Item	1		
4.4	**Documentation**				
4.4.1	Provision of the Operation and Maintenance manuals for the generator covered within the contract including conducting User's training	Item	1		
4.4.2	Provision of the Certificates of Compliance upon completion for the generator covered within the contract	Item	1		
4.5	**Guarantee**				
4.5.1	12 month equipment and installation guarantee on the generator covered within the contract.The guarantee period commences on the day of successful handing over of the building to the Client.	Item	1		
	CARRIED FORWARD TO SUMMARY PAGE				

Item	Description	Unit	Qty	Rate	Amount
5	**BILL 5: INTRUSION SYSTEM**				
	Input Control Module (Series two) - 12/24 VDC, 8 zone input monitor module, (32) 1K resistors (with 2 programmable output relays), RoHS, CE, C-Tick and UL294 certified				
5.1	Supply	No.	1		
5.2	Install	No.	1		
	Command Display terminal Keypad - 32-character back-lit LCD display with a 16 position keypad, supports both direct RS-485 communication with the ISC and Wiegand Input, 12VDC+15% @175mA (keypad only). C-Tick Certified				
5.3	Supply	No.	1		
5.4	Install	No.	1		
	Surface Mounted Door Magnetic Contact - N/C with armoured cable				
5.5	Supply	No.	2		
5.6	Install	No.	2		
	PIR Infrared motion sensor, 360 degrees, soffit mounted				
5.7	,	No.	1		
5.8	Install	No.	1		
	PIR Infrared outside motion sensor/beam, 12m Detection Area, wall mounted				
5.9	Supply	No.	4		
5.10	Install	No.	4		
	Magnetic door contacts (door & window)				
5.11	Supply	No.	4		
5.12	Install	No.	4		
	IR Beams - External 60m				
5.13	Supply	No.	1		
5.14	Install	No.	1		
	12 Port Rack mountable Ethernet Surge Protection				
5.15	Supply	No.	1		
5.16	Install	No.	1		
	Single Channel Ethernet Surge Protection				
5.17	Supply	No.	2		
5.18	Install	No.	2		
	Micro-wave sensor for perimeter				
5.19	Supply	No.	4		
5.20	Install	No.	4		
	5km Range - Mechanical Fire Siren				
5.21	Supply	No.	1		
5.22	Install	No.	1		
5.23	**Testing and commissioning**				
5.23.1	Testing and commissioning of the intrusion system covered within the contract	Item	1		
5.24	**Documentation**				
5.24.1	Provision of the Operation and Maintenance manuals for the generator covered within the contract including conducting User's training	Item	1		
5.25	**Guarantee**				
5.25.1	12 month equipment and installation guarantee on the generator covered within the contract.The guarantee period commences on the day of successful handing over of the building to the Client.	Item	1		
	CARRIED FORWARD TO SUMMARY PAGE				

Item	Description	Unit	Qty	Rate	Amount
6	**BILL 6: SUNDRIES**				
6.1	**Testing and commissioning**				
6.1.1	Testing and commissioning of the works covered within this bill.	Item	1		
6.2	**Documentation**				
6.2.1	Provision of the As-built drawings for the works covered within this bill showing all cable routes, conduit routes, etc	Item	1		
6.2.2	Provision of the Operation and Maintenance manuals for the works covered within this bill including conducting User's training	Item	1		
6.2.3	Provision of the Certificates of Compliance upon completion for the works covered within this bill.	Item	1		
6.3	**Guarantee**				
6.3.1	12 month equipment and installation guarantee on the works covered within this bill.The guarantee period commences on the day of successful handing over of the building to the Client.	Item	1		
	CARRIED FORWARD TO SUMMARY PAGE				

Item	Description	Page No.	Amount
6	**SUMMARY PAGE**		
6.1	Bill No 1: SITE RETICULATION	3	
6.2	Bill No 2: ELECTRICAL INSTALLATIONS	5	
6.3	Bill No 3: EARTHING & LIGHTNING PROTECTION SYSTEM INSTALLATIONS	7	
6.4	Bill No 4: GENERATOR INSTALLATIONS	8	
6.5	Bill No 5: INTRUSION SYSTEM	9	
6.6	Bill No 6: EARTHING & LIGHTNING PROTECTION SYSTEM INSTALLATIONS	10	
	TOTAL CARRIED OVER TO FINAL SUMMARY PART A: (EXCLUDING VAT)		

NOTE: ALL RATES AND PRICES EXCLUDE 15% VAT
VAT WILL BE ADDED IN THE FINAL SUM CARRIED TO TENDER FORM

Contractor's Name	
Electrical Contractor's Registration Number at the Electrical Contracting Board of South Africa	Registration No.:
Name of Registered Person / Firm at ECB	

NB: Only contractors whose ECB Registration is for Three Phase installations will be considered and the contractor shall be of CIDB grading 3EB.

CONTRACTOR TO SUBMIT ACCREDITATION PAPERS OF THE ELECTRICAL CONTRACTOR WITHIN FOURTEEN DAYS OF BEING APPOINTED

Signature of person authorised to sign the tender: ….....

PART C3: SCOPE OF WORKS

C3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are Standards South Africa's Standardized Specifications for Civil Engineering Construction SABS 1200.

Although not bound in nor issued with this Document, the following Sections of the Standardized Specifications of SABS 1200 shall form part of this Contract:

AA	1986	:	GENERAL
AB	1986	:	ENGINEER'S OFFICE
C	1980	:	SITE CLEARANCE (As amended 1982)
DA	1988	:	EARTHWORKS (Small Works)
DB	1989	:	EARTHWORKS (Pipe trenches)
DK	1984	:	GABIONS AND PITCHING
DM	1981		EARTHWORKS (Roads and Subgrade)
GA	1982	:	CONCRETE (Small Works)
HA	1990	:	STRUCTURAL STEELWORKS
HC	1988	:	CORROSION PROTECTION FOR STRUCTURAL STEELWORKS
L	1983	:	MEDIUM PRESSURE PIPELINE
LB	1983	:	BEDDING (Pipes)
LD	1982		SEWERS
LE	1982	:	STORMWATER DRAINAGE
M	1996	:	ROADS (General)

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

SANS 1921 (2004): Construction and Management Requirements for Works Contracts

- Part 1: General Engineering and Construction Works; and
- Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

C3.2 PROJECT SPECIFICATIONS

The project specification is covered in the following sections:

ITEM	DESCRIPTION STATUS
	PROJECT SPECIFICATION PORTION 1: GENERAL
PS-1	Project Description
PS-2	Extent of the Works
PS-3	Description of the Site and Access
PS-4	Nature of Ground and Subsoil Conditions
PS-5	Construction and Management Requirements
PS-6	Construction Programme
PS-7	Site Facilities Available
PS-8	Site Facilities Required
PS-9	Existing Services
PS-10	Requirements for Accommodation of Traffic
PS-11	Occupational Health and Safety
PS-12	Adverse Weather Conditions
PS-13	Site Meetings & Reporting
PS-14	Preferential Procurement
	PROJECT SPECIFICATION PORTION 2: AMENDMENTS TO THE STANDARD AND PARTICULAR SPECIFICATIONS
PSA	General
PSD	Earthworks
PSDB	Earthworks (Pipe Trenches)
PSG/PSGA	Concrete (Small Works)
PSLB	Bedding (Pipes)
PSLD	Sewers
PSLE	Stormwater Drainage
	PARTICULAR SPECIFICATIONS
PA	Brickwork and Plaster
PB	Carpentry, Joinery and Ironmongery
PC	Painting
PF	Valves
PES	Environmental Specification
PE	Project Specification Occupational Health & Safety Specification

STATUS

The Project Specification, consisting of two parts, forms an integral part of the contract and supplements the Standard Specifications.

Part A contains a general description of the works, the site and the requirements to be met.

Part B contains variations, amendments, and additions to the Standardized Specifications and, if applicable, the Particular Specifications.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

PROJECT SPECIFICATION

PORTION 1: GENERAL

SABS 1200 PS: GENERAL

PS-1 PROJECT DESCRIPTION

This scope of works defines key project milestones and nature of work that the contractor is expected to perform in identified areas for the refurbishment, repairs, and upgrades to water & wastewater treatment work infrastructure at Taylor Bequest Hospital, Mount Fletcher, Joe Gqabi District. The details of the works are set out in the Bills of Quantities with provision for changes as directed by the client should the need arise.

PS-2 EXTENT OF THE WORKS

The scope of works for the Taylor Bequest Hospital, Mount Fletcher water and sanitation systems refurbishment and upgrades are as follows:

COMPONENT	SCOPE OF WORKS
Potable Water Storage	Install 2 new elevated tank feeder pumps, including pipework and electrical controls. Construction of foundation from the proposed tank Supply and install a new 200 m3 prefabricated steel panel tank, on a 20m high steel stand. Supply and Install Pipework
Demolitions	Desludging of existing sewer ponds Removal of ponds lining Demolition of concrete ponds inclusive of inlet channels and carting away the rubble Filling of pond areas Rehabilitation of pond areas Removal of the dilapidated fence complete with gates
Civil Works	Mass earthworks Supply and install Inlet works. Concrete Collection / Sceptic tank Foundation/ Plinth for the wastewater treatment system Pipework (Water supply and sewer discharge) Supply and Install outlet work

Wastewater Treatment Plant	Supply and install a new activated sludge 200kl/day Containerised Sewage Treatment Plant consisting of the following components; i) Trash Screen ii) Lift Pumps iii) Pick up iv) Aeration Tanks • Nitrification • Denitrification v) Clarification vi) Sterilization Chlorine dosing station Ozone disinfection station vii) Discharge Pump viii) Maintenance for 12 months from the date of commissioning the system Specialist specifications and designs are to be submitted for the engineer`s approval prior to fabrication.
Mechanical & Electrical	This portion of the works covers the supply, factory testing, insurance, delivery, transport, handling, storing, erection, site welding and making good coatings, aligning, fixing, supporting, connecting, adjusting, drilling for and grouting in and caulking up all holding down bolts, bedplates and pipework, balancing, guaranteeing, site testing, painting, commissioning, handing over in complete working order, providing drawings, operating and maintenance instructions in quadruplicate, and instructing staff. This portion of the works has a maintenance of 12 months after completion for the mechanical and electrical equipment, pipework, and other plant all as described in greater detail elsewhere in this document and/or shown on the drawings and set out in the Schedule of Quantities. (Note the nominated/selected subcontractor contractor will be issued with a separate appendix containing the specifications for the M&E components of the works. These will form part of the complete specifications (ANNEXURE 1). The main contractor remains liable for all works undertaken in this specifications appendix and should thus familiarize themselves with all the requirements of the works.)
External Works	Construction of access road to the proposed wastewater treatment plant Construction of stormwater management infrastructure Supply and install fencing around the plant.

PS-3 DESCRIPTION OF THE SITE AND ACCESS

PS-3.1 Restrictions and Constraints

- The completion of the project is urgent, and work shall be executed during normal working hours i.e., 7h00 until 17h00 daily including weekends. Work required to be executed outside of these hours must be arranged with the Facilities Manager and the Chief Executive of the hospital, in advance.
- Noise must be always kept to a minimum and within acceptable levels. It is possible that the hospital could impose restricted times for demolition due to the proximity of the site to existing facilities.
- All shut-offs and tie/cut-ins to existing services must be arranged in advance with the Facilities Manager and a methodology with appropriate mitigation of risks must be prepared by the contractor and submitted to the relevant Professional discipline in advance, for approval.
- Dust emanating from the work site must be controlled.

PS-3.2 Operational Protocols

- Security is a priority, and the site shall be always kept safe.
- The approved Health and Safety plan shall be always adhered to.
- All staff members of the contractor shall always wear PPE.
- All staff members of the contractor shall be always specifically identifiable and to this end shall wear a predetermined coloured overall to be able to enter and work on the site.
- Regular meetings, the frequency of which is to be determined, shall be held with the management of the hospital to always ensure a cohesive spirit of co-operation.

PS-3.3 Access

Prospective bidders are to fully familiarize themselves with the site and access to the site and restricted area for site establishment.

PS-4 NATURE OF GROUND AND SUBSOIL INVESTIGATIONS

Subsoil investigations have been undertaken on the site. The details of the subsoil conditions shall be provided to the contractor. No responsibility is taken by the Employer as a result of any deductions made by the tenderer/contractor from observation/analysis of the results.

PS-5 ENGINEERING AND DESIGN

PS-5.1 Design Services and Activity Matrix

The following matrix of responsibilities for design of permanent and temporary works will apply:

Activity Work designed by, per design stage	Responsible Party
Concept, feasibility and overall process	Employer
Basic engineering and detail layouts to tender stage	Employer
Final design approved for construction stage	Employer

Temporary works	Contractor
Permanent Works	Contractor
Preparation of as built drawings	Contractor

PS-5.2 Employer's Design

The Employer's design will be for all permanent works and will be detailed in drawings, site instructions the technical specifications to be issued with the tender documents and issued during construction.

PS-5.3 Design Brief

The contractor will be responsible for design of the following (which are all subject to approval by the Engineer):

- Site layouts for the contractor's camp and office accommodation
- Construction Methodology
- Formwork
- Scaffolding and all staging work
- All other temporary works
- Concrete Mix designs
- Mechanical and electrical plant and equipment to be supplied (nominated subcontractor)

The costs of the designs will be deemed to have been included in the scheduled items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

PS-5.4 Drawings

The drawings issued to tenders as part of the tender documents must be regarded as provisional and preliminary for the Tenderer's benefit to generally assess the scope of work. The work shall be carried out in accordance with the latest available revision of the drawings approved for construction.

At the commencement of the contract, the Engineer shall deliver to the Contractor, copies of the construction drawings and any instructions required for the commencement of the works. From time to time thereafter during the progress of the works, the Engineer may issue further drawings or revisions for construction purposes as may be necessary for adequate construction, completion, and defects correction of the works.

The following drawings will be required to be prepared by the contractor as a minimum:

- Site layouts for the contractor's camp and office accommodation
- Scaffolding and all staging work
- Within two weeks of the acceptance of his tender, the Contractor shall supply the Engineer, in duplicate, with fully dimensioned drawings of the plant ordered from him, the necessary data concerning the geometry and the position and sizes of all plinths, foundations, bolt holes, ducts, openings in walls or floors and all other special features affecting the design and construction of the new M&E Works. The Employer will then arrange for the necessary new concrete work, foundations, bolt holes, openings for pipes, cable ducts, etc., to be available for the proper erection and installation of the plant.

The costs of the designs will be deemed to have been included in the scheduled items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

The tender drawings applicable to the contractor are detailed in Part C5 of these documents. These drawings have been used for setting up the Schedule of Quantities.

PS-5.5 Design Procedures

The contractor will be required to furnish the following designs for approval by the Engineer at the indicated times:

- Site layouts of the Contractor's camp and office accommodation – within 14 days from commencement date of the contract and in any case prior to the erection of the contractor's camp and offices
- Formwork design – within 14 days of commencement of work and in any case prior to the construction of permanent reinforced concrete works.
- Scaffolding and all staging work – within 14 days of commencement of work and in any case prior to the construction of permanent reinforced concrete works.
- Concrete Mix Designs for all classes of concrete as measured in the Schedule of Quantities prior to the placement of any concrete work

The costs of the designs will be deemed to have been included in the scheduled items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

Any re-design and/or cutting or alteration of new structural or building work arising from inadequate or incorrect dimensions and particulars afforded by the Contractor under this Contract, or through late receipt of any such particulars, and any modifications to existing structures to suit plant supplied under this Contract will be arranged by the Engineer to be carried out as he thinks fit, at the expense of the Contractor under this Contract.

PS-5.6 Interface with other Contractors

The contractor may be required to provide access to other contractors undertaking work as per parallel contracts. The costs of this interface will be deemed to have been allowed for in the appropriate items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

PS-6 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

PS-6.1 General

The Contractor is referred to SANS 1921: 2004: Construction and Management Requirements for Works Contracts, Part 1: General Engineering and Construction Works, and Part 2: Accommodation of Traffic on Public Roads. These specifications shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

PS-6.2 Quality Assurance (QA) *(Read with SANS 1921 – 1: 2004 clause 4.4)*

The Contractor will be solely responsible to produce work that complies with the Specifications to the satisfaction of the Engineer. To this end, it will be the full responsibility of the Contractor to institute an

appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment, and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

PS-6.3 Management and disposal of water *(Read with SANS 1921-1: 2004 clause 4.6)*

The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

PS-6.4 Disposal of spoil or surplus material *(Read with SANS 192-1: 2004 clause 4.10)*

The Contractor shall dispose all surplus and unsuitable material in legal spoil areas of his own choice. He shall be responsible for all arrangements necessary to obtain such spoil sites.

PS-6.5 Testing *(Read with SANS 1921 – 1 : 2004 clause 4.11)*

PS-6.5.1 Process control

The Contractor shall arrange for all tests required for process control to be done by a laboratory acceptable to and approved by the Engineer.

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

PS-6.5.2 Acceptance control

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

PS-6.6 Survey beacons (Read with SANS 1921 - 1 : 2004 clause 4.15)

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as benchmarks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

PS-6.7 Existing Services (Read with SANS 1921 - 1 : 2004 clause 4.17)

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

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

PS-6.8 Management of the environment (Read with SANS 1921 - 1 : 2004 clause 4.19)

The Contractor shall pay special attention to the following:

(a) Natural Vegetation

The Contractor shall confine his operation to as small an area of the site as may be practical for the purpose of constructing the works.

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

(b) Fires

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

PS-6.9 Overhaul

No payment will be made for overhaul on this contract unless provision is made thereof in specific items.

PS-6.10 Excavations

Due to the depths of sewer lines and their location nets to a water course, the Contractor is to allow in their tendered rates for excavation, for shoring and protection of trenches. No additional payment will be made for protection of excavations for whatever reason.

PS-6.10 Security

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

PS-7 CONSTRUCTION PROGRAMME

PS-7.1 Preliminary programme

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

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

In determining his construction programme, the contractor should allow for disruptions/stoppages/requirements and intermittent “hold” of work while awaiting Engineer’s inspections at the following critical stages:

Stage	Delay
Excavation works for pipelines and prior to preparation of bedding	1 day
Following preparation of bedding and laying of pipes and prior to backfilling	1 day
Prior to commencement of testing of pipelines	1 day
Prior to testing of manholes	1 day
Prior to pouring of concrete	1 day

The contractor must consider the above requirements when pricing and preparing the programme of works. No additional payments, other than through scheduled items, will be made for these stoppages/disruptions/constraints.

PS-7.2 Programme in terms of Clause 5.6 of the General Conditions of Contract

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

PS-8 SITE FACILITIES AVAILABLE

PS-8.1 Contractor's camp site and depot (Read with SANS 1921 - 1 : 2004 clause 4.14)

The Contractor will be permitted to locate his offices, storage facilities, workshops, latrines, etc, on a site approved by the Engineer, in liaison with the community.

Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition. The Contractor must not cut down or damage any trees nor make any excavation without the written permission of the Engineer and will be required to restore the site to its original condition on completion of the Works.

All buildings and latrines shall be in accordance with the Local Authority and State Heath regulations and shall be kept in a clean, sanitary condition to the satisfaction of the Engineer.

PS-8.2 Accommodation of Employees

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

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

No informal housing or squatting will be allowed.

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

PS 8.3 Source of Water Supply

The Contractor shall make his own arrangements for the supply of water for construction purposes. The source of water shall be subject to the approval of the Engineer.

The Water Services Authority in the area is Elundini Local Municipality. Should the contractor's source of water be the Elundini Local Municipality, the contractor will be required to ensure that the water account with The Elundini Local Municipality is in good standing prior to the issue of completion certificate. The Engineer will withhold any payments until arrears are cleared with The Elundini Local Municipality.

PS 8.4 Source of Power Supply

The power supply authority is Eskom. The Contractor will be required to make his own arrangements with, and pay all the requisite connection and consumption charges to Eskom for whatever temporary power supplies he may require for his use on the site and his tender will be held to include for all such costs and charges.

PS-9 SITE FACILITIES REQUIRED

PS-9.1 Facilities Required for the Engineer

PS 9.1.1 Temporary/Permanent Offices

The Contractor is to provide a temporary office for use by the Engineer as detailed in the drawing issued at tender stage. The offices should be able to accommodate one full-time Engineer's Representative and two assistants.

The Engineer's offices are to be equipped with the following as a minimum:

- Three desks each with lockable drawers
- Three high-back swivel chairs
- Three visitors' chairs
- A facility to store/hang drawings.
- An electric refrigerator of at least 200 litres capacity

The Contractor should also make arrangements for covered facilities to enable the accommodation of approximately 12– 16 people during progress site meetings, to be held fortnightly or monthly.

The facilities are to be provided, to the satisfaction of the Engineer, within 14 days of commencement date. Should the contractor fail to provide approved establishment within the stipulated 14 days, the contractor will pay a penalty calculated as follows:

Mileage of the Engineer's Representative from other offices from the nearest business centre to site and back to office at R5.50/km
Rented Office space equivalent to that stipulated in this contract at offices in Mount Fletcher or other place closer to the site.

This penalty shall be deducted from the Contractor's payment certificates and paid to the service provider providing the site office of the specification as detailed above.

PS 9.1.2 Laboratory Facilities

The Contractor will not be required to provide a testing laboratory on site for use by the Engineer. However, the contractor will be required to provide compaction test results for all backfilling across roads from a recognised laboratory. No additional payment will be made from the compaction tests and the contractor is to allow for the costs thereof in the tendered rates.

PS 9.1.3 Sanitary Facilities

All latrines shall conform to the requirements of the Local Authority and shall be subject to approval by the Engineer. All sanitary fees and charges due under the Local Authority or State Health Regulations or bylaws shall be paid by the Contractor. Throughout the progress of the contract, all latrines shall be maintained by the Contractor in a clean, sanitary condition to the satisfaction of the Engineer.

PS 9.1.4 Telephone Facilities

The Contractor will not be required to provide a telephone for use by the Engineer. The contractor will however be required cover cell phone costs for the engineer's site staff for airtime valued at R250/week. Appropriate items have been provided in the Schedule of Quantities to cover these costs.

PS 9.1.5 Housing Facilities

The Contractor will not be required to provide housing facilities for the Engineer's staff. However, a provisional sum has been provided in the schedule of quantities for payment through the contract for accommodation for the Engineer's staff.

PS 9.1.6 Parking Facilities

The Contractor will be required to provide one covered parking bay for the Engineer.

PS 9.1.7 Engineer's Transport

The Contractor will not be required to provide transport for the Engineer's staff.

PS 9.1.8 Security

The Contractor will be responsible for providing adequate security for the Works and for the site establishment. All costs associated with the provision of security staff shall be borne by the Contractor and should allowed for in the rates tendered for items in the Schedule of Quantities. No additional payments will be made for security measures taken during the contract period, other through the schedule items in the Schedule of Quantities.

PS 9.1.9 Contract staff to assist the Engineer

The following staff will be recruited by the contractor to assist the Engineer in carrying out his services:

Description of Staff	Nº Required	Remarks
Environmental Monitoring	One	Provisional sum provided for appointment as directed by the Engineer. Personnel directed by and report to Engineer
Occupational Health & Safety Monitoring	One	
Technical Assistant	One	
Community Liaison Officer	One	

The required personnel will be identified by the Engineer and will report to the Engineer. Provisional Sums and the relevant mark-up Items are provided for in the Schedule of Quantities to cover these costs.

PS 9.1.10 Survey Equipment

The contractor shall provide the following survey equipment, in good condition, for use by the Engineer throughout the duration of the contract:

- A dumpy level
- Measuring tape
- An assistant, when required, to assist the Engineer to operate survey equipment, when provided.

PS 9.1.11 Project Nameboard

The contractor shall supply, erect, and maintain the project nameboard for the duration of the project. The board will be as per issued detail and any deviations from such detail will result in the item not being paid for by the Engineer.

PS 10. EXISTING SERVICES

PS 10.1 Care, Damage and Protection

Known services will be indicated in the tender and contract documents. The Contractor will be responsible for identifying all services with the relevant Service Providers.

The Contractor shall familiarize himself with all services and expose them at the start of the Contract to verify their position and establish their depths.

No additional payment will be made to the Contractor for identifying and locating services. Therefore, the Contractor will have to include the costs thereof in the scheduled items in the Schedule of Quantities.

Any information regarding existing services is given in good faith and without guarantee.

PS 10.2 Blasting

No blasting will be permitted unless the Contractor can satisfy the Engineer that his proposed blasting methods and controls are such that no damage will be caused to the adjoining building structures, pipelines, or services. In any event the Engineer will require the Contractor to plan and execute each blast in such a manner as to ensure that no damage will be caused to any structure, pipeline, or service.

In addition, the Engineer will require vibro-recordings to be taken at no additional cost to the Employer. No blasting is to be carried out in Eskom servitudes or wayleaves unless the Eskom authorities have been advised in writing three weeks prior to blasting. Where blasting is done adjacent to Eskom power lines, the Contractor shall arrange for a representative of Eskom to be present prior to and during any blast.

PS 10.3 Environmental Aspects

The Contractor will be required to plan and undertake his work in a manner that minimises its impact on the natural environment. Trees and other vegetation shall, wherever possible, be left undisturbed. Trees that are marked by the Engineer shall not be damaged and in the event of the Contractor doing so, a penalty will be deducted from monies due to the Contractor.

Every effort shall be made by the Contractor to prevent pollution of the adjacent areas and river and to reduce the noise, dust and fumes emanating from his construction activities.

PS 10.4 Dealing with Water

Where necessary, the Contractor shall construct temporary drainage channels to divert groundwater from his excavation and excess water must be pumped out.

No compensation for any variation of the actual conditions during construction from the data given will be considered. Neither will additional compensation be considered for data omitted or inaccurately given.

The rates tendered shall allow for the requirements of this clause and all incidentals.

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

In drawing up his programme, the tenderer is to take into account the following:

Permissible period of downtime of the existing water pipeline to allow the contractor to make the necessary interconnections: 09:00 up to 16:00, i.e. 7 hours, during the day.

The water pipelines must be operational every day except for the period mentioned above.

The water pipelines are currently in use.

The Employer shall be responsible for the operation of all valves and its water supply system.
The Contractor shall not operate any valve unless the Contractor has received from the Engineer prior written permission to do so which permission shall be limited to a specific time and operation in each case unless expressly stated to the contrary in writing by the Engineer.
It shall be the responsibility of the Contractor to give prior written notice timeously (min 2 working days) to the Engineer in every case in which the Contractor may request valve operation or prevention of valve operation by the Employer.
The Employer cannot guarantee watertight closing of valves; it shall be the responsibility of the Contractor to do and provide everything necessary for the timeous, efficient and safe disposal of all water which may leak through closed isolating valves and thence into places from which, in the opinion of the Engineer, the leaking water has to be removed for good reason. (The Engineer shall certify extra payment in respect of the costs of such valve-leakage-water disposal measures as in his opinion could not reasonably have been avoided or reduced.)

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

Where necessary, the Contractor shall construct temporary drainage channels to divert ground water or leakage from non-closing valves and fire hydrants from his excavation and excess water must be pumped out.

No compensation for any variation of the actual conditions during construction from the data given will be considered. Neither will additional compensation be considered for data omitted or inaccurately given.

PS 10.5 Servitudes and Rights of Way

The Employer will, where necessary, obtain permanent servitudes and rights of way along the road routes indicated on the tender drawings. New servitudes will only be registered after completion of the Works.

PS 10.6 Dealing with Damaged Services

In the event of any service being damaged or accidentally disconnected for any reason, the Contractor shall immediately contact the relevant authority for instruction and shall report the occurrence of the incident. The damage is to be repaired as soon as possible to the approval of the Engineer and the authority. The Contractor will be held responsible for paying all costs incurred by the authority or himself as a result of each such incident, where relevant.

PS 10.7 Accommodation of Traffic

The Contractor shall ensure the safe and expeditious passage of traffic at all times and shall provide all necessary temporary road traffic signs, barricades, flagmen, etc to safeguard the travelling public. Any detours or bypasses constructed by the Contractor shall be adequately signposted, as per the South African Road Traffic Signs Manual, and maintained in such a manner as to provide safe and easy passage of traffic.

PS 10.8 Spoil Material

No indiscriminate spoiling of material will be allowed. All surplus or unsuitable material shall be spoiled, levelled and spread in designated areas as directed by the Engineer. All haul will be regarded as freehaul.

PS 10.9 Finishing and Tidying and Defects Liability Period

On no account must rubble and spoil materials, other materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of other Contractors or Authorities.

Finishing and tidying must not simply be left until the end of the construction period. The Contractor will be entitled, subject to prior agreement with the Engineer and within reasonable limits, to request that work in a particular area and/or work of a particular discipline, be inspected for partial completion. The specified defects liability period in respect of any specific section of the Works shall commence on the date on which the relevant section is accepted by the Engineer as being completed, i.e., fully commissioned, including finishing and tidying.

On completion of the Contract the Contractor shall ensure that all materials used in the construction of the temporary Site office, workshop and storage yard are removed from Site. Waste materials such as construction debris and soil contaminated with oil and fuel are to be disposed of at the solid waste disposal site used approved by the Engineer. Prior to the handover of the Site to the Employer, the Contractor and the Engineer will conduct a post-construction audit to determine if any additional measures that are to be taken. The Completion Certificate will only be issued after this stage.

PS 10.10 Employee Accommodation

(See Subclause 3.2.1 of Section A of Part 2 and Subclause 1.2.1 of Section A of Part 3 of SABS 0120)

The Contractor shall conform in all respects with the provisions of any Act, Regulations or By-Law of Elundini Local Municipality, which may be applicable to employee accommodation. Save for a security guard on active duty, no employees may be housed on Site or the Contractor's campsite after normal working hours.

PS 10.11 Employment of Local Labour

The Employer has determined that 100% of the Contractor's unskilled labour force shall be made up from the local community. A labour sub-committee (of a Project Steering Committee) comprising representatives of the community and other stakeholders will be responsible for the recruitment of all local labour. The Contractor will be required to provide details of the numbers of semi-skilled and unskilled workers he will require, together with their anticipated starting dates. The PSC through its labour sub-committee will then make this labour available to the Contractor.

A minimum of 50% of the local labour shall comprise of women and, where appropriate, disabled labour shall be employed. It is a requirement that tenderers acquaint themselves fully with requirements for registration with Unemployment Insurance Fund.

The Employer requires that the successful contractor registers all labour with the Unemployment Insurance Fund. The Contractor shall adhere to "The national minimum wage determined by the Minister in accordance with the National Minimum Wage Act (NMWA)", and yearly pronounced increases for duration of contract. (Currently R 25.42 for each ordinary hour worked).

During project execution, the successful contractor will be required to provide progress reports indicating to what level these requirements have been met.

PS 10.12 EPWP Construction Methods

EPWP construction methods will be utilised on this contract in order to generate employment opportunities for the local community.

PS 10.13 Frequency of Labour Wages Payments

The contractor will be required to pay labour on a fortnightly basis.

PS 10.14 Training and Capacity Building

During project execution, it is the desire of the Employer that an identified number of community members receive appropriate level of non-accredited training in either pipe laying activities or construction management activities. Within 14 days of appointment, the successful contractor will be required to provide, together with his method statement, a proposal for consideration by the Project Steering Committee for activities in which the community members can receive training. This proposal will be considered by the Project Steering Committee after which the Contractor will be given an instruction on the training to provide. Training will be provided to local labour that is already in the employ of the contractors as per clause PS 10.11. It must be noted that the Contractor will be required to pay the labour based on their daily rates indicated in PS 10.11.

Should the contractor fail to provide this training, the Employer reserves the right to seek training from alternative sources. In that case, the cost of the training sought will be deductible from any monies due to the contractor.

PS 10.15 Contractor Participation Goal (CPG) Partner

The Employer will require that the contractor utilise a CPG partner on the contract as part of development of emerging contractors. The CPG partner will be approved by the Employer and will be required to undertake 30% of the scope of work. Should the contractor be unable to provide a CPG partner, the Employer will provide one on this contract.

PS-11 REQUIREMENTS FOR ACCOMMODATION OF TRAFFIC

PS-11.1 General

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

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

PS-11.2 Basic Requirements

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

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

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

The Contractor may not commence constructional activities affecting existing roads before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

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

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

PS-11.3 Traffic Safety Officer

Where warranted by traffic conditions on or near the site, the Contractor shall nominate a suitable member of his staff as traffic safety officer to be responsible for the arrangement and maintenance of all the measures for the accommodation of traffic for the duration of the project. Duties of the traffic safety officer shall be as set out in SANS 1921 Part 2 and shall also be in compliance with the Occupational Health and Safety Act No 85 of 1993 and the Construction Regulations 2014.

PS-11.4 Payment

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

Items that may be considered for payment are specified in SABS 1200 Standardized Specifications and the related project specification.

PS-12 OCCUPATIONAL HEALTH AND SAFETY (Read with SANS 1921 - 1: 2004 clause 4.14)

PS-12.1 General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2014 issued by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatary and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act by executing the Agreement form C1.2.4 included in Section C1: Agreements and Contract Data.

PS-12.2 Health and Safety Specifications and Plans to be submitted at tender stage

a) Employer's Health and Safety Specification

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

b) Tenderer's Health and Safety Plan

The successful Tenderer shall, on receipt of notification that he has been awarded the contract, submit without delay his own documented Health and Safety Plan for the execution of the work under the contract. His Health and Safety Plan must at least cover the following:

(i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 7 to 28;
(ii) pro-active identification of potential hazards and unsafe working conditions;
(iii) provision of a safe working environment and equipment;
(iv) statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (Regulation 5);
(v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
(vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and
(vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

PS-12.3 Cost of compliance with the OHSA Construction Regulations

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract. Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

Items that may qualify for remuneration will be specified in the Safety Specifications included or in the Project specifications.

PS-13 ADVERSE WEATHER CONDITIONS

In terms of Clause 5.12.2 of the General Conditions of Contract, extension of time will be considered for abnormal rainfall. The numbers of days per month on which work is expected not to be possible as a result of normal rainfall, and for which the Contractor shall make provision in his tendered rates, prices and programme, are listed in Table PS-13 hereafter. Only the number of days lost as a result of adverse weather conditions, exceeding the number of days listed in Table PS-13.1, will qualify for consideration of extension of time.

During the execution of the Works, the Engineer's Representative will certify a day lost due to abnormal rainfall and adverse weather conditions only:

if no work was possible on the relevant working day on any item which is on the critical path according to the latest approved construction programme; or

if less than 30% of the work force and plant on site could work during that specific working day.

Extension of time as a result of abnormal rainfall and adverse weather conditions shall be calculated monthly being equal to the number of working days certified by the Engineer's Representative as lost due to rainfall and adverse weather conditions, less the number of days allowed for as in Table PS-13, which could result in a negative figure for certain months. The total extension of time as a result of abnormal climatic conditions for which the Contractor may apply, shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as nil."

Table PS-13: Expected No of Working Days Lost Monthly Due to Normal Rainfall

Month	Number of working days expected to be lost due to climatic conditions	Average rainfall (mm)	Month	Number of working days expected to be lost due to climatic conditions	Average rainfall (mm)
January	12	251.44mm	July	1	28.11mm
February	9	224.49mm	August	2	42.67mm
March	6	137.86mm	September	3	48.63mm
April	5	82.51mm	October	5	121.65mm
May	2	34.67mm	November	6	150.12mm
June	1	24.69mm	December	9	228.42mm

(Based on information obtained from the Weather Bureau, Department of Environment Affairs. The average monthly rainfall figures quoted, are included for information only, and shall not be taken into consideration for calculation of extension of time.)

PS-14 SITE MEETINGS AND REPORTING

The Contractor will be required to attend site meetings organised by the Engineer. In these meetings he (the Contractor) will be required to provide progress reports and other reports to monitor the outputs of the contractor, as may be required from time to time, to be presented in a format prescribed by the Engineer. The frequency of such meetings will be monthly, as a minimum. However, the frequency can be reviewed, depending on the progress of the contract.

PS-15 PREFERENTIAL PROCUREMENT

For the purpose of this contract the Contractor shall comply with the preferential procurement statement provided in F.3.11 and T2.2 of the Tender Data.

PROJECT SPECIFICATION

PORTION 2: AMENDMENTS TO THE STANDARD AND PARTICULAR SPECIFICATIONS

INTRODUCTION

In certain clauses the standard, standardized and particular specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternative or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains additional specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix PS followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or payment item, which does not form part of a clause or a payment item in the standard specifications and which is included here, is also prefixed by PS, but followed by a new number which follows on the last clause or item number used in the relevant section of the standard specifications.

SABS 1200 PSA: GENERAL

PSA-3 MATERIALS

PSA-3.1 Quality

Where there is a standardization mark programme for any material, all such material supplied shall bear the official standardization mark.

Alternative materials or equipment proposed by the Contractor shall be tested. The test, as well as the materials or equipment, shall be approved by the Engineer prior to any such materials or equipment being built into the works and all costs involved in testing shall be deemed to be included in the rates tendered.

PSA-3.3 Applicable Standards for Cement (Additional Sub clause)

The standard cement specifications SABS 471, SABS 626, SABS 831 and SABS 1466, referred to in clause 3.3, have been withdrawn and are replaced by the new SANS 50197-1 and -2: Common cements, and SANS 50413-1 and -2: Masonry cement. These specifications will be applicable to this contract, and the descriptions and types of cements specified, will be based on the designations as defined in these specifications.

PSA-4. PLANT

PSA-4.2 Contractor's Office, Stores and Services

The Contractor's camp shall be kept neat and clean at all times and all surplus or rejected material shall be removed from the site.

PSA-5 CONSTRUCTION

PSA 5.1 Survey

PS A 5.1.1 Setting Out of the Works

Substitute the first sentence in A 5.1.1 with the following:

"Setting out of the works is the sole responsibility of the Contractor and shall be done from survey beacons identified by the Engineer. The Contractor shall, within two (2) weeks after the site has been handed over to him, confirm himself that the survey beacons are correct. Any discrepancy shall immediately be reported in writing to the Engineer. Any costs or subsequent costs arising from discrepancies, which had not been reported to the Engineer within the aforementioned period, shall be the sole responsibility of the Contractor. A grid of final terrace levels over the site of the works will be issued to the Contractor at the commencement of the contract and it is the Contractors responsibility to preserve all setting out pegs based on this information as given for the duration of the contract."

PS A 5.4 Protection of Overhead and Underground Services

Add the following paragraph:

" The Contractor shall as soon as possible after handing over of the site, commence with the detection to existing services, continue with it without interruption, and finalise it at least 7 days before excavation starts at that particular section."

PSA-5.8 Ground and access to works

Add the following:

" On completion of operations the Contractor shall restore the ground surface, wherever it may have been disturbed, to its original condition by filling in all ruts with material similar to the material within the rut and levelling the ground and, where necessary, planting grass and shrubs as may be required. Any boundary fences which have been removed or damaged by his operations and activities shall be repaired and/or reinstated at the Contractor's expense".

PSA-5.9 Accommodation of Traffic (additional subclause)

Where construction work has to be carried out on or near public roads, the Contractor shall deal with traffic as specified in SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor is also referred to Project Specification PS-10.

PSA-8. MEASUREMENT AND PAYMENT

PSA-8.3 Scheduled fixed-charge and value-related items

PSA-8.3.2 Establishment of Facilities on the Site

PSA-8.3.2.1 Facilities for the Engineer

Add the following additional subitems:

(a)	Furnished Office (1 No.)	Unit : Sum
(b)	Nameboard (1 No.)	Unit : Sum
(d)	Carports (state number)	Unit : Sum

The tendered rate shall cover all costs as specified in Subclause 8.3.2.3 of SABS 1200 A (and 5.5 of SABS 1200 AB to provide these facilities as specified in Clauses PSAB-3.2, 3.3 and 4.2. if applicable).

PSA-8.3.2.2 Facilities for Contractor

For this contract the facilities for the Contractor will not be measured and paid for separately as itemised in Sub clause 8.3.2.2. The sub items (a) to (j) will be consolidated into one item and payment under item PSA-8.3.2.2 shall be deemed to cover all these sub items.

PSA-8.4 Scheduled time-related items

PSA.8.4.5.2 IMPLEMENTATION OF HEALTH AND SAFETY PLAN

The unit of measurement for item A1.5 and A1.6 shall be the month, or part thereof for the duration of the approved contract period. Part of a month shall be calculated to two decimal places. The contract rate shall include full compensation for implementing the health and safety plan, including the provision of a dedicated, full time health and safety officer, carrying out all the required site health and safety training and briefings, staff medical evaluations, monitoring and administrating the health and safety plan and for supplying all transport, personal protection safety items, other health and safety equipment, safety notices and any other health and safety related items that are required.

PSA.8.3.1 & PS.8.4 PRELIMINARIES AND GENERAL (Fixed charge obligations and Time-related obligations)

Payment of the lump sums tendered under Item, PSA8.3.1 and the sum for Item (PS.8.4) PSA8.4.1, shall, for the contractor's general obligation together, include full compensation for all the contractor's charges in respect if the following items, collectively termed the "contractor's general obligations".

(i) Setting up and maintaining his organization, personnel, camps, accommodation, ablution and other facilities, offices, stores, workshops, other temporary structures, fencing, testing facilities and construction plant on the site and their removal on completion of the contract.

(ii) Complying with the requirements of the general conditions of contract including the effecting of the insurances and providing the sureties required.

(iii) All general site and office overheads, profit, financing costs, risks, legal and contractual responsibilities and other costs and obligations of the preliminary and general nature which are not specifically measured for payment under any other items of payment.

The lump sum tendered under Item PSA8.3.1, PSA 8.8.2 and PSA 8.8.7 shall represent full compensation for the fixed part of the contractor's general obligations, i.e., that part which is substantially fixed and is not a function of the time required for the completion of the contract or of the value of work.

Payment of these lump sums will be made in three instalments, as follows:

(i) The first instalment, 50% of the lump sum, will be paid in the first payment certificate after the contractor has met all his obligations under this section and has made a substantial start with construction in accordance with the approved programme.

(ii) The second instalment, 35% of the lump sum, will be paid when the value of work done reaches one half of the tendered amount, excluding contingencies and price adjustments.

(iii) The third and final instalment, 15% of the lump sum, will be paid when the works have been completed and the contractor has fulfilled all the requirement of this section.

Before any payment is made under this item PSA.8.3.1 the contractor shall satisfy the engineer that they have provided camps and constructional plan of good quality on the site, the value of which exceeds that of the first instalment.

The contractor may also be required to furnish documentary proof that they own the camps and constructional plant, the engineer shall have the right to withhold parts of any payments to be made under this subitem, until the works have been completed.

The tendered sum for subitem item (PS.8.4) PSA.8.4.1 represents full compensation for that part of the contractor's general obligations which are mainly a function of construction time. The tendered rate will be paid monthly, pro rata for parts of a month, from the date of which the contractor has been granted access and possession of site in terms of clause 5.4 of the general condition of contract for construction works 2015 (GCC2015), until the end of the period of for the completion of the works, plus any extension thereof as provided in clause 5.12 of the GCC2015 provided that:

Should the works be certified as having been completed before the contractual date for completion of the works, the contractor will then be entitled to payments in regard to the unexpired period for completion.

Should the progress of the contractor in terms of the value of work done be in arrear in relation to their approved original programme, payments in respect of this item may be limited to payments for this period, which in his original programme (after suitable adjustments in respect of the extension of time) agree with the actual value of work done.

In the event of Extension of Time, Clause 6.6.2 of the GCC 2015 will be applicable for time-related obligations (PS8.4) (i.e., the Contractor will be required to provide rate breakdown and as such, be paid a proven cost determined by the Engineer).

SABS 1200 PSD: EARTHWORKS

PSD-1 EARTHWORKS

The Contractor is referred to SANS 1921 - 5: Earthworks activities which are to be performed by hand.

PSD-3 MATERIALS

PSD-3.1 Classification for excavation purposes

PSD-3.1.2 Classes of excavation

The classes of excavation in clause C.1.2 shall in general apply to all excavations where use is made of conventional methods and plant and equipment.

Where labour-intensive methods applicable to targeted labour are specified, soft excavations shall be defined as follows:

“PSD-C.1.2(a) Soft excavation

Soft excavation for labour-intensive work where excavations are to be carried out by hand methods, shall be excavation in material that can be efficiently removed and loaded with picks, shovels and other hand tools by an average able-bodied person or group of persons. Soft excavation shall include small boulders that can be removed by hand methods. All intermediate excavation will be classified as soft for this contract

Soft excavation can be further broken down by introduction of an additional class such as “Soft Excavation Class A”, which is excavation defined as soft, but which can only be excavated with difficulty.

The criteria for classifying Soft Excavation Class A shall be as follows:

Granular material: - dense material with high resistance to penetration by the point of a geological pick; several blows are required for removal of material; 7 to 15 blows of the dynamic cone penetrometer are required to penetrate 100 mm; and

Cohesive materials - stiff to very stiff material requiring 6 to 8 blows of the dynamic cone penetrometer to penetrate 100 mm, where:

"stiff" material can be indented by thumbnail; slight indentation produced by pushing a geological pick point into the soil; cannot be moulded by fingers; and where:

"very stiff" material can be indented by thumbnail with difficulty; slight penetration of point produced by blow of geological pick.

Where soft excavation class A material is encountered, it shall be measured and paid for as an extra over soft excavation.

PSD-5 CONSTRUCTION

PSD-5.1 Precautions

PSD-5.1.1 Safety

PSD-5.1.1.2 Safeguarding of excavations

Add the following subparagraph:

"(g) The Contractor or his agent or his representative shall not require or allow any person to work under unsupported overhanging material or in an excavation which is more than 1,5 m deep, and any excavation which has not been adequately supported or braced if there is a danger of the overhanging material or the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question."

PSD-5.2.2.1 Excavations for general earthworks and for structures

Add the following additional subparagraph:

"(f) The Contractor shall so plan his cut-to-fill operations that all excavated material is used in the manner that is most appropriate.

The Contractor shall conserve all suitable surplus material and he shall not borrow, spoil or waste any material unnecessarily. If excavated material designated for a particular purpose become contaminated, is incorrectly used or becomes unavailable through injudicious planning of excavation operations, the Contractor shall replace the contaminated material and make good any shortfall with material of quality at least equal to that of the said selected material.

Where selection of excavated material is required, the method of excavation shall be so arranged as to avoid double handling. Wherever possible excavated material shall be placed in its final position without being stockpiled. If stockpiling is unavoidable, materials intended for different uses shall be stockpiled separately

PSD-8.3.1.2 Remove topsoil; to nominal depth of 150mm, stockpile and maintain

Note the following:

Rate shall be deemed to include the preparations, composting and re-laying of maintained in-situ topsoil as directed by the Engineer on site.

PSD-8.3.9 Extra over item 8.3.9

Note the following:

Backfill using material form commercial sources to underside of pumpstation sump to a nominal depth of 500mm. Import material to be G5 compacted to 95% of Mod AASHTO density.

SABS 1200 PSD: EARTHWORKS (PIPE TRENCHES)

PSDB-5 CONSTRUCTION

PSDB- 5.1 Precautions

PSDB-5.1.5 Trench Excavations (additional subclause)

The precautions for excavations as specified in Clause 5.1.1 of Section 1200 D, 1200 DA, and the relevant clauses in PSD and PSDA, shall also apply to all trench excavations.

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

SABS 1200 GA: CONCRETE (SMALL WORKS)

PS GA-3 MATERIALS

PS GA-3.2 Cement

PS GA-3.2.1 Applicable specifications

The standard cement specifications SABS 471, SABS 626, SABS 831, SABS 1466 and SABS 1491, have been withdrawn and are replaced by SANS 50197-1: Common cements, and SANS 50413-1: Masonry cement. These specifications will be applicable to this contract and the descriptions and types of cements, where specified, will be based on the designations as defined in these specifications.

PS GA-5.4.1.4 Prescribed mix concrete

Add the following:

"The structural concrete in this contract shall comply with the following specification.

The minimum 28-day strength shall be as specified in drawings
The maximum water/cement ration shall be 0.42
The minimum cement content shall be 400 kg/m3
The cement used must be extended with a minimum of 30% Fly Ash or 50% GGBS

A detailed mix design by an approved concrete testing laboratory before any concrete is poured in the works and provision shall be made by the contractor for the cost of the design in his rates.

PS GA-8: MEASUREMENT AND PAYMENT

PS GA-8.1 Measurement and rates

PS GA-8.1.2 Reinforcement

Replace subclause 8.1.2.2 with the following:

PSGA-8.1.2.2 Mild steel and high tensile steel will be measured by mass for the diameters or range of diameters as scheduled.

Welded mesh will be scheduled separately for each type and mass per square metre of mesh."
Replace subclause 8.1.2.3 with the following:

"PSGA-8.1.2.3 The unit rate for steel bars shall cover the cost of supply, cutting, bending, placing in position, and fixing of the reinforcing and supporting steel scheduled. The rate shall also include the provision of all spacer devices and binding wire, as well as the cost of tests in terms of SANS 920.

The unit rate for welded mesh shall cover the supply, cutting and placing of mesh, as well as the cost of all waste due to laps."

SABS 1200 LB: BEDDING (PIPES)

PS LB 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 sub soil drainage, which shall be classified as flexible pipes.

PS LB 5 CONSTRUCTION
PS LB 5.1 General
PS LB 5.1.4 Compacting

Substitute "90 % of mod AASHTO" in LB 5.1.4 with "93 % of mod AASHTO (100 % for sand)".

PS LB 8 MEASUREMENT AND PAYMENT
PS LB 8.2 Scheduled Items
PS LB 8.2.2.4 From stockpile (provisional)

a) Selected granular material Unit : m3

b) Selected fill material Unit : m3

The rate shall cover the cost of obtaining, handling and transport regardless the distance, of the required bedding material from the stockpile, the delivery thereof at positions that are spaced along the trench in such a way as suits the working method of the Contractor, as well as the removal of material displaced by this importation within the free-haul distance.

SABS 1200 LD : SEWERS

PSLD 2.3 DEFINITIONS

Add to the Sub-Clause:

Normal Blasting

The method which an experienced blaster employs when carrying out general blasting of hard rock material in trenches.

Close Proximity Blasting

The method which an experienced blaster employs when carrying out blasting of hard rock close to adjacent service or structures requiring additional but smaller charges in order to break up the hard rock without damaging the adjacent services or structures.

PSLD 3 MATERIALS

PSLD 3.1.1 Vitrified Clay Pipes

Delete Sub-Clause 3.1.1.2 and substitute:

Vitrified clay sewer pipes shall be plain ended “Vitro” (or equal) pipes having a crushing strength of at least 45Kn/m. The joints of pipes of 100mm and 150mm diameter shall comprise natural rubber rings within polypropylene couplings.

PSLD 3.1.3 FC Pipes

The FC pipes and fittings comply with the applicable requirements for Series 4 pipes as set out in SABS 819.
The FC pipes and couplings shall be bitumen dipped.

PSLD 3.4 Bedding

Bedding of sewers shall be for flexible pipes (SABS 1200 LB) or concrete encased.

PSLD 3.5.2 Precast Concrete Manhole Sections

Add the following end of the Sub-Clause:

Joints between all wall sections and under roof slab shall be primed and sealed with a plasticized butyl rubber compound (“Bltujoint Putty” by ABE or similar approved) complete with one layer of 200mm wide compatible PVC tape and primer (similar or equal to the “Corro Clad” system supplied by Denso South Africa (Pty) Ltd) to be supplied and applied circumferentially to the outside of each wall section joint.

PSLD 3.5.6 Mortar

Delete the sub-clause and substitute the following:

Mortar for brickwork and, where so ordered by the Engineer, for external plasterwork to manholes shall be composed of one part of cement to three parts of clean pit sand. Mortar for the internal plasterwork to manholes where ordered and to the benching within manholes shall be composed of one part of cement to three parts of sand.

PSLD 3.5.8 Manhole Covers and Frames

Add to the first paragraph of the Sub-Clause:

After installation all exposed portions of the CI cover and frame shall be thorough cleaned and painted with two coasts of approved epoxy tar, particular attention being paid to the painting of the underside of the covers and frames.

Precast concrete manhole covers slabs, adaptor slabs and lids shall comply with the applicable requirements of SABS 1294 and to the details shown on the drawings. The precast concrete cover slab shall be so designed as to withstand a point load in the centre, as specified in Clause 8.7 of SABS 1294, of 50 kN for light duty covers and 100Kn for heavy duty covers. The lifting lugs shall be made of 6mm dia grade 316 stainless steel rod. The openings and undersides of all covers and slabs be coated with two coats of “Proofex 3”.

PSLD 4 PLANT

PSLD 4.1 Pipe Handling and Rigging Equipment

Add to the Sub-Clause

The Contractor will be responsible for clearing the areas required for pipe storage which shall include the removal of rock, stones and all combustible material. He shall also be responsible for maintaining the area in a clean and tidy condition for the duration of the Contract.

Upon delivery of the pipes, fittings, specials and valves, these will be inspected jointly by the Engineer’s Representative and the Contractor. Any pipes, etc. found to be damaged shall be returned to the factory for repair or replacement; in which case the costs of additional transport, repair or replacement shall be borne by the Contractor.

The Contractor will be held fully responsible for the care and safety of all pipes and fittings, etc on site and shall bear the cost of all renewals which may be necessary to make good losses, damages or breakages. Furthermore, he shall fully responsible for handling and re-loading material at the storage areas and for transporting and offloading of all such materials to their correct places along the pipeline route.

PSLD 5 CONSTRUCTION

PSLD 5.4 Connections to Manholes

Add the following paragraph to the sub-clause:

The rates tendered for the construction of manholes are to include for whatever additional costs there may be over and above the tendered rates for the supply, lay, joint, bed and test pipelines, for the supply and fixing the short lengths of pipes entering and leaving manholes.

PSLD 5.6.1 General

The underside of all manhole roofs and edges of the access opening therein and precast concrete covers and lids shall be painted with two coats of "Proofex 3" as supplied by Fosroc (Pty) Ltd, P.O. Box 477, New Germany,3620, or similar approved rubberized bitumen coating so as to protect the concrete from the effects of sewage gases.
The tendered rates for manholes shall include for this work.

PSLD 5.6.5 Precast Concrete Manholes

In the first sentence, delete "Delete LD-5" and substitute with "with drawings"

PSLD 5.7 Concrete Casing to Pipes

Add to the sub-clause:

Concrete casing is to be of 20/19 grade concrete with a minimum thickness of 100 mm below, above top and on each side of the pipe as and where ordered by the Engineer.

PSLD 5.9.3 Recording Location

Delete the last sentence and substitute

The records shall be handed to the Engineer, in a form acceptable to the Engineer, at the time when the Contractor claims payment for the relevant work.

PSLD 6 TOLERANCES

PSLD 6.2 Overall Centre-line Control and Manhole Locations

In second line delete "+-300mm" and substitute "+-150mm"

PSLD 6.3 Manhole Invert-levels

In second line read "+- 25mm" for "+-50mm"

PSLD 7 TESTING

PSLD 7.1.4 Sub Clause

Delete the Sub-Clause and substitute the following:

The sewer, and the house connections along its length, shall be tested simultaneously between manholes or chambers, as applicable. The house connections and the section of the sewer under test shall be suitably "plugged" at the open ends using plugs or stoppers which have been braced adequately.

PSLD 7.2.2 Water Test

The Water Test will not be acceptable under this Contract.

PSLD 7.2.6 Watertightness Testing of Manholes

Wherever ordered in writing by the Engineer that a manhole is to be tested, it is to be tested in his presence or in the presence of his authorized representative, in the following manner.

All sewer inlets and outlets to and from the manhole shall be closed with expanding plugs or other apparatus. Water is then to be introduced into the manhole up to a level 25mm below the underside of the roof slab. The water level is to be maintained for not less than one hour or such longer periods as may be necessary to accurately record the rate of leakage, if any. Careful and accurate records shall be kept at frequent and regular intervals of the variation in the level of the water in the manhole and of the quantity of the water added so that the rate of leakage may be properly determined. In the event of the rate of leakage, if any, exceeding 1.25l/h/m of depth of manhole, or in the event of any weakness, defect or fracture or visible signs of leakage occurring in the manhole under test, the Engineer shall have the right to order the test to be discontinued and the Contractor shall thereupon, at his own expense, search for and rectify any weakness or defect in the manhole under test, such work or rectification to consist of repair or replacement or both. The manhole shall thereafter be refilled with water and retested in the manner specified. This process shall be repeated until a satisfactory test is obtained.

The Contractor will be paid once only for the hydraulic testing of any given manhole at the rate per manhole to be quoted by him in the Schedule of Quantities. The Contractor's prices for the hydraulic testing of manholes shall include for all arrangements for the supply of water for testing the cost of water used in testing where the water is not obtained free of cost from the Employer for all work of rectification for retesting and for all labour required to carry out the specified tests.

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.2.5 Inspection Chambers

Delete the first and second lines and substitute the following:

Separate items will be scheduled for manholes, backdrops and inspection chambers, etc. of each type and of each depth (measured from top of cover to invert) in increments of 1.0m for the first one metre thereafter in increments of 0.5m. The rate shall cover the cost of dealing with any excavation (in all materials, including backfilling and the disposal of surplus materials).

PSLD 8.2.11 Connection to Existing Sewers

The tendered sum is to include for breaking into the existing sewer manholes, dealing with the flow, caulking in the new pipe and for breaking out and reforming benching as required, making the manholes watertight.

PSLD 8.2.13 Intermediate and Hard Rock Excavation (New Sub-Clause)

Insert new Sub-Clause as follows:

8.2.13 Extra over item 'Manholes' above for

Intermediate excavation ..... Unit : m3
Hard rock excavation by normal blasting or other methods as selected by the contractor (see PSLD 2.3) ..... Unit : m3
Hard rock excavation by close proximity blasting (see PSLD 2.3) ..... Unit : m3
Boulder excavation Class A ..... Unit : m3

Separate items will not be provided for depth increments. Volumes will be computed from the plan area of either the intermediate or hard rock material, excluding the plan area of the specified pipe trench, which is within the area occupied by the manhole plus a side allowance of 600mm and the depth from the top of either the intermediate or hard rock material to the bottom of the same material or to the underside of the Manhole base slab, whichever is the lesser.

The rates shall cover the additional cost of the excavation and handling of the more difficult material and the disposal of material.

SABS 1200 LE : STORMWATER DRAINAGE

PS LE 3 MATERIALS

PS LE 3.1.1 Material for Subsoil Drainage

PS LE 3.1.1.1 Pipes

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

The size of perforations in perforated pipes shall in all cases be 8 mm in diameter ± 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 ± 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.

PS LE 3.1.1.2 Crushed-stone

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

PS LE 3.1.1.3 Geotextile Blanket

The geotextile blanket around subsoil drains shall comply with the requirements of PS DK 3.1.4 in all respects.

PS LE 3.1.1.4 Sand
Sand obtained from approved commercial sources shall be clean, hard and durable and shall comply with the following grading requirements:

D15 : 0,2 mm to 0,4 mm
D85 : 1,2 mm to 4,7 mm

PS LE 5 CONSTRUCTION

PS LE 5.1 Trench Bottom

PS LE 5.1.3 Unsuitable Founding Conditions

Substitute "90 % of MAASHTO maximum density" in LE 5.1.3 with "90 % of MAASHTO maximum density (100 % for sand)".

PS LE8.2 BEDDING AND LAYING

PS LE 8.2.14 Supply And Install Subsurface Drains According To Drawings Unit: m
The length shall be measured on the centre line of the completed subsurface drain.

The rate shall cover the cost of supplying, transporting, off-loading and installing all materials as well as for cutting, wasting, overlapping and installing of the materials where applicable.

C3.3: PARTICULAR SPECIFICATIONS

PARTICULAR SPECIFICATIONS: PA

BRICKWORK AND PLASTER

PA1 SCOPE

PA1.1 This specification covers the general requirements for buildings and other masonry structures, including plastering.

PA2 INTERPRETATION

PA2.1 Other relevant Standards/Specification

This specification should be read together with SABS 1200 AA.

PA2.2 Applicable Edition of Standards

Each standard specification referred to in this specification shall be deemed to be the latest edition, applicable on the tender closing date.

PA2.3 Definitions and Symbols

For purposes of this specification, the definitions and symbols given in the National Building Regulations and Building Standards Act, 1977 (referred to further on in this specifications as "Building Act"), where applicable, shall apply. (Definitions: pages 5 to 14, Symbols: page 23.)

PA3 MATERIALS

PA3.1 Cement

Cement shall conform to the requirements of SABS 471.

PS3.2 Lime

Lime shall be of approved manufacture, well burnt and of uniform quality conforming with SABS 523.

PA3.3 Sand

Sand to be used for mortar and plaster shall comply with the requirements of SABS 1090.

PA3.4 Clay Bricks

Clay bricks must conform to SABS 227. A sample of bricks to be used for construction must be given to Engineer for approval before construction bricks are delivered to site.

The contractor will be required to carry out necessary tests and provide certificates for compliance of the bricks with SABS 227. The cost of these tests will be deemed part of the scheduled rates and no additional payment will be made therefore.

Best quality engineering bricks shall be used for all foundation and concealed situations.

PA3.5 Damp-Proofing

Material used as a dampproof course shall conform to the requirements contained either in SABS 248 or in SABS 952. Type FV fibre-felt sheets or Type C polyethylene sheets shall be supplied under the contract.

PA3.6 Fibre Cement Sheets

Fibre cement flat sheets, minimum 15 mm thick, shall comply with the requirements of SABS 685.

PA3.7 Storage

PS3.7.1 Cement and Lime

Cement and lime stored on the site shall be properly protected against moisture to the satisfaction of the engineer.

PA4 CONSTRUCTION

PA4.1 Brickwork

Brickwork shall be well and regularly bonded, with no false headers and none but whole bricks except where legitimately required as closers. All bricks must be thoroughly dampened before laying and each brick is to be laid with full joints and pressed into its bed so as to squeeze out superfluous mortar and give a finished joint not exceeding 8 mm thick in the case of the face work or 13 mm thick in the case of plastered walls or work not exposed to view.

All joints, both horizontal and vertical, notwithstanding any grade custom to the contrary, are to be filled solid with mortar for their full width and depth, each course being flushed with mortar, worked well down into all vertical joints before the succeeding course is laid. Horizontal joints and vertical joints of face work shall be pointed flush in manholes and catchpits, but shall be pointed and finished with a tooled recessed joint elsewhere. Plastered walls shall have the joints raked out to a depth not less than 13 mm and not more than 20 mm, and subsequently refilled with mortar of the same proportions as the original bedding mortar. In no circumstances may joints to be so formed as to expose any perforation in the units.

Wire ties, where required, shall be stainless steel and are to be installed at 5 per square metre.

PA4.2 Mortar

The mix proportions for the mortar are given below:

Portland cement	50 kg
Lime	0-40 l
Sand*	200 l max.

* measured loose and damp

PA4.3 Plastering

Plaster shall be of the same proportions as the bedding mortar. Any other plaster mixes will be subject to the approval of the Engineer.

PA4.4 Dampproof Courses

The areas to be covered by dampproof courses are indicated on the drawings. Dampproof shall be laid on a surface which shall not contain any sharp objects which may perforate the membrane. The full width of the wall and the whole area under the floor is to be covered by the membrane and shall overlap by not less than 100 mm under the floor, and by not less than 150 mm under the wall. All joints shall be effectively sealed. Where shown on the drawing, the dampproof course is to be stepped up one course of brickwork in the inner skin. Proper returns are to be made at all doorframes.

PA4.5 Window Sills

Windowsills shall be formed as shown on the drawings and as hereafter described:

Dampproof sheeting shall be provided one brick course below the sill and shall be turned upwards and terminate behind the window frame to provide an efficient weather-tight seal.

All external sills and some internal sills, where shown, shall be formed in quarry tiles and other internal sills where shown are to be of fibre cement sheet minimum thickness 15 mm to SABS 685 with approximately 20 mm projection beyond the finished face of the walls.

External sills shall be laid to a 20° weathered slope while internal sills shall be laid horizontal.

All tiles shall be bedded in 3:1 cement mortar and neatly pointed.

PA4.6 Lintels with Brickwork Reinforcement

Lintels over doors, windows and openings, where ordered by the Engineer, shall be reinforced with four layers of BRC brick force, or approved equal. The latter reinforcement shall extend a minimum of 450 mm beyond any opening. All joints in the six courses of brickwork above the opening shall be fully flushed with cement mortar. Shoring to soffits of lintels shall be left in position for at least 14 days after building the lintel and the brickwork shall be kept damp with wet bags for the whole of this period.

PA4.7 Wall Vents

Ventilator openings shall be formed through walls where indicated and shall be provided with double brick terracotta louvred air bricks (fitted with plastic insect screens) both externally and internally (where scheduled) set flush into the work and neatly pointed. Internal wall vents are to be of an approved plaster of paris type where scheduled.

PA4.8 Building in Frames, etc

Door and window frames are to be set up, built into position, bedded and pointed in cement mortar, with any necessary cutting to brickwork, fitting and making good, as the brickwork is built up. In the case of doorframes, wrought iron right angled cramps are to be fixed to doorframes and built into brickwork at every eighth course.

Where pipes, frames, brackets or other such parts pass through or have to be set into brickwork, the bricks shall be carefully cut and fitted to maintain regularity of courses and uniformity of joints, the shaped bricks being embedded and pointed to conform with the surrounding brickwork. Where such parts have to be set into position after brickwork is built, holes shall be left wherever possible, in preference to cutting out bricks, and the work shall be subsequently made good in the manner described.

PA4.9 Floor Finishes

PA4.9.1 Granolithic Floor Screed

Granolithic shall consist of one part cement, one part sand and two parts 5 mm stone chips and oxide where required, thoroughly mixed as for concrete and placed in a layer not less than 20 mm thick, levelled or graded and trowelled to a smooth uniform surface. To ensure proper bond, the concrete surface to be covered shall be clean, roughened by chipping, flushed with water and coated with cement grout just before placing of the granolithic layer. Granolithic finish is to be steel floated with V joints in squares of 1,20 m to 1,80 m, the joints extending for the full depth of the granolithic. Joints are not required in the granolithic screed where it is to be overlaid by tiles or carpeting.

PA4.10 Chasing Walls

Where indicated by the electrical contractor, the construction contractor shall chase brickwork and concrete work to accommodate electrical conduit - such chasing shall precede plastering or rendering and on no account shall plastering or rendering be commenced until the electrical tubing has been installed. No horizontal or diagonal chases shall be permitted.

Elsewhere, electrical conduit shall either be cast into concrete or shall be run on the surface afterwards as may be directed by the Engineer.

PA4.11 Weather

In any period of interruption caused by inclement weather, and at the completion of each day's bricklaying, freshly laid brickwork should be protected.

PARTICULAR SPECIFICATION: PB

CARPENTRY, JOINERY AND IRONMONGERY WORK

PB1 SCOPE

PB1.1 This specification covers the general requirements for carpentry, joinery and ironmongery work for civil engineering projects and the methods by which the finished work is to be measured for the purpose of payment.

PB2 INTERPRETATION

PB2.1Other Standards/Specification

This specification is to be read with SABS 1200 AA .

PB2.2Applicable Edition of Standards

Each standard specification referred to in this specification shall be deemed to be the latest edition, at the closing date of tenders for this contract.

PB3 MATERIALS

PB3.1 Timber

Roof timber forming a permanent part of the work shall conform to the requirements of the relevant standard specifications SABS 563, SABS 653, SABS 876, SABS 1089 or SABS 1245. All timber other than that used for temporary works or shuttering shall be treated as specified in SABS 1288 and SABS 05, and allowed to dry thoroughly before being used.

PB3.2 Fibre Cement Sheets

Fibre cement flat and corrugated sheets shall comply with the requirements of SABS 685. The flat sheets shall be minimum 15 mm thick.

PB3.3 Hardware

Locks, hinges and other hardware shall be provided to doors; all ironmongery and fixings shall be chromium plated on brass except where otherwise specified.

PB3.3.1 Hinges

Hardwood doors in hardwood frames are to be provided with brass butt hinges as scheduled with three hinges per leaf.

PB3.3.2 Door Locks and Furniture

External door to be fitted with a night latch (to be supplied by the Employer) and a Henderson No 463 bow handle, secured with brass bolts passing through the door with nuts on the inside.

PB3.3.3 Cabin Hooks

One 200 mm brass cabin hook complete with eyes to be fitted to each door including for hardwood block plugged to walls or post as scheduled.

PB4 MEASUREMENT AND PAYMENT

PB4.1 The work will be measured and paid for in accordance with the units and rates scheduled.

PB4.2 The tendered rates for doors are to include for the manufacture, fitting hanging and protective painting thereof.

PB4.3 The tendered rates for ironmongery shall include for the supplying and fitting complete with non-corrosive screws and/or bolts.

PARTICULAR SPECIFICATION: PC

PAINTING

PC1 SCOPE

PC1.1 This specification covers the general requirements for painting, including methods of preparation of materials to be painted, cleaning, priming, undercoating and finishing, and also methods by which the finished work will be measured and paid for.

PC2 INTERPRETATION

PC2.1 Supporting Specification

This specification must be read together with SABS 1200 AA

PC2.2 Applicable Edition of Standards

Each standard specification referred to in this specification shall be deemed to be the latest edition at the tender closing date.

PC3 MATERIALS

PC3.1 Emulsion Paints for Exterior Use

Emulsion paints for exterior use shall comply with SABS 634.

PC3.2 Calcium Plumbate Primer

Calcium plumbate primer shall comply with SABS 912.

PC3.3 Undercoats for Paints

Undercoats for air-drying protective and decorative paints shall comply with SABS 681.

PC3.4 Structural Steel Paints

Structural steel paints shall comply with SABS 684.

PC3.5 Colours of Paints

Specification for colours of paints shall comply with CKS 279.

PARTICULAR SPECIFICATION: PD

DISINFECTION OF PIPELINES

PD 1 INTRODUCTION

The price for testing and disinfecting pipelines and fittings is included in the scheduled items for supply and installation.

On completion of construction, after pressure testing and prior to commissioning the pipeline is to be disinfected by the contractor in accordance with this specification.

PD 1.1 Scope of the Code of Practice

This Code of Practice relates to the disinfection of parts used for the disinfection of complete installations.

It includes the requirements for bacteriological sampling and dosage of disinfectants, dose rates of disinfectants, disposal of chlorinated water and quality standards for bacteriological samples.

PD 1.2 Definitions

Within this document the term HYPOCHLORITE SOLUTION means a commercial solution of sodium hypochlorite containing 10% to 15% of available chlorine. Also, 10% HYPOCHLORITE SOLUTION means hypochlorite solution diluted one part in ten which thus has approximately 1% of available chlorine.

Within this document AVAILABLE CHLORINE and all chlorine concentrations means FREE CHLORINE available to the water environment for its disinfection.

'Water Supply Personnel' means any employee or contract or casual labour whose work includes, even temporarily, the performance of work concerned with partially or fully treated water and sources of underground water and who must possess a current certificate of medical suitability signed on behalf of the Authority.

PD 1.3 Hygiene

Only 'Water Supply Personnel' may undertake the procedures laid out in this Code of Practice.

PD 1.4 Safety

This Code of Practice does not cover the safety aspects of the construction or maintenance of installations or apparatus or of disinfection procedures.

Remember always that chlorinating agents are strongly corrosive so protect EYES AND HANDS especially.

PD 2GENERAL REQUIREMENTS FOR DISINFECTION OF POTABLE WATER APPARATUS

PD 2.1Components and Equipment

Clean all pipework components, equipment and tools used for repair and remove all grease or scale from components and equipment before use or assembly.

Where full chlorination and bacteriological testing is impractical, then disinfect all materials, components and equipment which could transmit contamination. Use a solution containing 1% of available chlorine (e.g. 10% chloros or other commercial hypochlorite solution or 2% solution of bleaching powder. Contact time must exceed 20 minutes. Rinse or flush the equipment with mains water to prevent excessive corrosion.

PD 2.2Completed Installations

Ensure that all water used for disinfection purposes has a free chlorine residual of at least 20 mg/ℓ. Refer to section PD 4 and Tables 1 and 2 for volumes or dose rates.

During chlorination the pipeline shall be kept full of water.

Whenever possible keep the installation at normal operating pressure or greater during the contact period.

PD 2.3Portable Test Equipment

Portable test equipment which may be used in contact with potable water must be kept clean. Any equipment which is in uncertain condition or which is contaminated must be cleaned and disinfected before use.

PD 3MAINS

PD 3.1New Mains

PD 3.1.1 Introduction

Do not connect any new main into supply until the water from designated sampling points, having stood in the main for at least 20 hours, has met the criteria specified herein.

New mains are laid with the intention of ensuring as far as possible, the exclusion of debris and contamination, but presume at the disinfection stage that debris and contamination does exist and that this debris is resistant to disinfection, e.g. compacted soil or detritus in joints.

The disinfection procedures, which should follow pressure testing, include:

(a) swabbing and flushing of the main

(b) soaking of the main for a minimum period of 20 hours, using a minimum concentration of 20 mg/ℓ of available chlorine in mains water.

removal of excess chlorine by flushing the main

PD 3.1.2 Pressure Testing

Only use potable quality mains water for pressure testing new mains. Pressure testing normally follows the construction of each section of the pipeline but precedes final connection to supply. Do not rely on a single sluice valve to isolate the new main from the supply network, while the main is under pressure until disinfection and approval are complete.

PD 3.1.3 Swabbing and flushing

Swab all new mains after pressure testing and prior to disinfection.

After insertion of a soft foam swab, which has been soaked in 10% hypochlorite solution, recharge the pipeline at a rate less than 50 mm per second (3 m per minute) to ensure that the swab is not moved.

Open the inlet valve fully and drive the swab along the pipeline, at a velocity less than 0,5 m per second (30 m per minute), by controlling the valve at the discharge end.

When the swab reaches the discharge end of the pipeline, flush the main for at least 5 minutes to remove all excess chlorine and discoloured or dirty water. Where possible open inlet and outlet valves as fully as possible.

If the swab removes excessive amounts of debris then re-swab the main.

PD 3.1.4 Chlorination

Chlorinate all new mains to a minimum of 20 mg/ℓ available chlorine and leave to soak for a minimum of 20 hours, prior to flushing with mains water to a chlorine residual equal to that of the background level in the incoming mains water.

Tables in PD 4 show the required minimum dose rates and volumes.

To chlorinate sections of distribution main, less than about 50 m long not exceeding 150 mm in diameter, use a soft swab which has been soaked in 10% hypochlorite solution and proceed as follows:-

- Pour 1 litre of hypochlorite solution for each 1 m³ of pipeline, into the end of the pipe upstream of the final connection.

- Insert the swab into the end of the upstream pipe to retain the hypochlorite solution.

- Make the final connection.

- Drive the swab past the final connection and along the pipeline, but do not allow the swab to travel at a speed greater then 0,3 metres per second (20 m per minute).

- Remove the swab and flush the main for 25 minutes.

- Close up the main prior to soaking and sampling in accordance with section PB 3.1.6.

The volume of hypochlorite needed for 50 m of pipeline is:-

50 mm - 100 mℓ, 75 mm - 200 mℓ, 100 mm - 500 mℓ,
150 mm - 900 mℓ, 200 mm -1600 mℓ, 250 mm - 2500 mℓ.

Take all necessary care with the disposal of chlorinated water; follow the procedure laid out in PB 5.

PD 3.1.5 Sampling for Bacteriological Analysis

Once all pressure testing, swabbing and chlorination is complete, fill the main with clean mains water free from excessive chlorine.

Flush all hydrants, washouts and other outlets until the water is clean and free from excessive chlorine. Shut the valves and leave the main to soak for a minimum period of 20 hours.

First check with the laboratory staff of the Joe Gqabi District Municipality to determine a suitable time for collection of samples and delivery of them to the laboratory for analysis.

Then pressurise the main and take samples for bacteriological analysis in accordance with the procedure given in section PB 3.1.6. Take these samples from sampling points agreed with the Resident Engineer.

Deliver all samples to the laboratory as soon as possible. Analysis must start within six hours but store the samples in a refrigerator if the delay between taking the sample and the start of analysis is likely to exceed four hours.

Then isolate and leave the main until the results of analysis are available. In the event that the samples fail, flush the main and re-sample after a further soak period of at least 20 hours.

Repeat the above process until disinfection criteria have been satisfied.

The costs of all necessary testing are to be borne by the Contractor.

PD 3.1.6 Sampling Points

Sample points should consist of a ferrule connection, with a short length of polythene piping terminating in a ½" BSP gate valve or manual air valve. Protect this sampling outlet by suitable boxing. Attach a sampling standpipe to the gate valve, disinfect the apparatus with hypochlorite solution and then flame the bib tap outlet on the standpipe. Flush out all traces of hypochlorite, check that the residual chlorine level is not greater than the normal level in the incoming mains water.

At scour points and air valves, flush out all trace of hypochlorite, check that the residual chlorine level is not greater than the normal level in the incoming mains water, then take samples.

PD 3.1.7 Temporary Cross Connections and Final Connections

Where a temporary cross connection supplies mains water to the new main, before making the final connection complete the disinfection procedure of the new main as set out above.

When the new main has been proved bacteriologically satisfactory the cross connection may be removed and isolated after suitable disinfection.

PD 4 DOSAGE OF CHLORINATING AGENTS

PD 4.1 Sodium Hypochlorite Solution

Bulk supplies of sodium hypochlorite solution (Chloros for instance) are supplied at 10 to 15% available chlorine. This fraction declines progressively as the hypochlorite decays to chloride, chlorate, and oxygen. Assume in practice that there is only 10% available chlorine.

Assuming 10% available chlorine and using mains water having a zero-chlorine demand, then the following values give estimates of the dilutions required.

- 10% hypochlorite solution (1 part hypochlorite solution in 10 parts solution) contains 10,000 mg available chlorine per litre of 10 kg available chlorine per cubic metre.

- 20 mg available chlorine per litre is equivalent to 200 ml of hypochlorite solution per cubic metre of water.

- 0,5 mg available chlorine per litre is equivalent to 5 ml of hypochlorite solution per cubic metre of water.

PD 4.2 Chlorine Gas

Chlorine gas, dosed into water by weight, is likely to be about 98% available chlorine. Therefore, a direct measurement gives a reasonable estimate.

- Disinfection of replacement parts with chlorine gas in not a practicable possibility.

- 20 mg Chlorine gas (by weight) per litre for disinfection of complete installation is equivalent to 20 grams per cubic metre.

- 0,5 mg Chlorine gas (by weight) per litre of water is equivalent to 0,5 grams per cubic metre.

PD 4.3 Bleaching powder, granules and tablets

Bleaching powders, granules or tablets based on Calcium hypochlorite contains 50% to 70% of available chlorine by weight. These materials must be stored under dry conditions.

During storage some available chlorine is lost. Follow the manufacturers instructions particularly concerning the shelf life of the material and dose rate of the tablets.

For calculation purposes presume a maximum value of 50% available chlorine i.e. 1 gm of powder, granules etc in 1 litre of water provides 500 mg per litre available chlorine.

PD 4.4 Dose rates

Tables 1 and 2 provide estimates of the minimum dose rates of sodium hypochlorite solution, chlorine gas or bleaching powder, tablets or granules to achieve available chlorine levels of 20 mg per litre when dilute with mains water which has a zero chlorine demand.
Table 1 - dosage for 1,000 m of pipeline to give 20 mg available chlorine per litre

Pipe Diameter	Volume of 1000 m of pipeline	Weight of bleaching powder granules or tablets to give 20 mg/ℓ	Weight of chlorine to give 20 mg/ℓ	Volume of hypochlorite solution to give 20 mg/ℓ
mm	m³	gm	gm	litres
50	1,9	80	40	0,4
75	4,4	180	90	0,8
100	7,9	320	160	1,5
150	17,7	700	350	3,5
200	31,4	1,260	630	6,2
250	49,1	2,000	980	9,7
300	70,7	2,800	1400	14,0
350	96,2	3,800	1900	19,0
400	125,6	5,000	2500	24,6
500	196,3	7,800	3900	38,4
600	282,6	11,200	5600	55,4

Table 2 - dose rates for 20 mg available chlorine per litre

Flow rate in pipeline*		Hypochlorite solution injection rate for 20 mg/ℓ		Chlorine injection rate for 20 mg/ℓ
litres/sec	m³/hr	litres/hr	mℓ/sec	gm/hour
1	3,6	0,7	0,2	72
2	7,2	1,4	0,4	144
3	10,8	2,2	0,6	216
4	14,4	2,9	0,8	288
5	18,0	3,6	1,0	360
6	21,6	4,3	1,2	430
7	25,2	5,0	1,4	500
8	28,8	5,8	1,6	576
9	32,4	6,5	1,8	650

* For flows greater than 9 litres/sec the dose rates can be calculated by multiplying by an appropriate factor of 10 e.g.

186 litres/sec = 100 +n 80+ 6 litres/sec
hypochlorite solution = 70+ 58 + 4.3 = 132,3 litres/hr

PD 5 DISPOSAL OF CHLORINATED WATER

PD 5.1 Introduction

When the pipeline has passed all disinfection criteria if must be drained without causing hazard.

PD 5.2 Methods of Disposal

PD 5.2.1 Overland

Explore the possibility of soaking away disinfection water on adjacent land in rural situation.

PD 5.2.2 Foul sewers

Where disinfection water is discharged into a combined or foul sewer, no de-chlorination is normally necessary but in the former case take care that the rate of discharge of disinfection or flushing water avoids operation of storm sewage overflows and/or the creation of a hazardous atmosphere within the sewer.

PD 5.2.3 Watercourses

In rural areas where disinfection water is discharged to watercourses, either directly or through surface water drains, do not permit a free chlorine concentration in the receiving stream in excess of 0,1 mg/l about 50 metres downstream of the point of discharge. If the discharge is into a ditch, which is not a spawning ground or a nursery or a fishing stream, take advantage of that ditch to mop up chlorine provided that in a significant stream the earlier mentioned limit is not exceeded. In these circumstances use flush water to dilute the chlorinated water whenever possible. Avoid discharge of disinfection water to the head of a watercourse because this area is probably a spawning ground.

PD 5.2.4 Disposal of large volumes

When disposing of large volumes of disinfection water from very long lengths of new main, or in any cases of doubt, consult through the Resident Engineer, the laboratory staff of the Employer.

PD 5.3 De-chlorination

There is no objection to the use of thiosulphate or sulphur dioxide as de-chlorination agents. In some cases, at least partial de-chlorination may be achieved by discharge over land. In all cases consult the Resident Engineer.

PD 6 QUALITY STANDARDS AND REPORTING PROCEDURES

PD 6.1 New Mains

PD 6.1.1 Bacteriological Standards

No coliform organisms shall be detected in 100 mℓs of the sample.

The increase in the yeast agar plate count when compared with that of the incoming water shall generally be less than 50 and never more than 150 colonies per ml when incubated at 37°C for 24 hours.

PD 6.1.2 Procedure for Unsatisfactory Samples

Whenever even one E.Coli, or 5 or more coliforms per 100 ml are detected, re-chlorinate the main or serve reservoir. When E.Coli are not detected but the total coliform count is less than 5 per 100 ml flush and re-sample the main.

PD 6.1.3 Physical Standard

If the sample is unusually coloured, turbid or frothy flush the main until acceptable. If this condition is severe, re-sample the main but do not put into service until the samples have passed the required standards.

PD 6.2 Reporting Procedure

Records of disinfection are to be handed to the Resident Engineer.

PARTICULAR SPECIFICATION PF

VALVES

PF 1 GATE VALVES

Gate Valves shall bear the official mark of SABS and be SABS approved. They shall comply with SABS 664 for waterworks pattern valves of the types, classes and sizes listed in the Schedule of Quantities and shall be provided with the following:

	Description	Specification
1	Flanges	Double flanged, to be in accordance with and drilled off-centre to SABS 1123, Table 1600, 2500 or 4000 as scheduled.
2	Spindles	Non rising, bronze or stainless steel with spindle nut either bronze or gunmetal
3	Handwheels	Direction of rotation for opening valves shall be clockwise when viewed from the top and appropriate wording must be embossed at the top indicating direction of “close” and “open” with arrow heads
4	Tests	Valves to be subjected to “closed end” and “open end” pressure tests to one and half times the working pressure. Valve body shall be tested to twice working pressure. Under all the tests, no leakage to occur
5	Paint	As in PF4
6	Other	Type B gunmetal trim Valves should permit repacking of the gland whilst valve is under pressure Factory test certificates to be provided with each valve Rates in the schedule of quantities to include requirements to comply with specification

PF 2 REFLUX VALVES

Reflux valves shall, except where otherwise specified, be double flanged single door swing type and shall be fitted with gun metal seats and bronze hinge and clack pins. In the case of reflux valves to be mounted horizontally, the design shall be such that the gate rests against the seat in the absence of flow or of differential pressure, without the aid of springs or external counterweights. Reflux valves shall comply with the requirements of SABS 144 for working pressures as required for each application, but not less than 1600 kPa working pressure.

PF 3 AIR VALVES

PF 3.1 General

The materials and workmanship employed in the manufacture of air valves shall be of a similar standard to that set out in SABS 664 for waterworks pattern gate valves and they shall be provided with individual test certificates for each valve from the manufacturer; all valves are to be inspected, and the hydraulic tests witnessed, by an Inspector to be appointed by the Engineer, and the tendered rates for the valves shall include for making arrangements for independent inspections. The Inspectors' fee and recoverable expenses will be for the account of the Employer, fees and expenses arising from abortive or repeat

visits due to non-compliance with the specified requirements will be for the Contractor's account and will be deducted from amounts due to the Contractor.

PF 3.2 Types of Air Valves

Air Valves shall be standard types (epoxy coated flanges; stainless steel sleeve, bolts, nuts, studs etc), of the double orifice type, and shall be equal or similar to the "Vent-O-Mat" (RGX series: 50 mm dia valves: 050 RGX 2501) type in which a small orifice, manufactured from Grade 316 stainless steel and having a minimum orifice size of 2,0 mm diameter, shall be capable of releasing accumulations of air at all pressures throughout the specified working pressure range and shall be drop-tight at 0,5 Bar. The large orifice shall be suitable for admitting or expelling large quantities of air during emptying and filling of the pipeline. The opening of the valve (to atmosphere) shall be enclosed by a stainless steel mesh which has been fixed into the valve body to prevent the entry of small insects or vermin into the valve.

All welding of stainless steel shall be carried out in workshops dedicated to the fabrication of stainless steel products. Care shall be taken that the correct welding rods and approved welding procedures have been used for each application, and the Engineer shall have the right to request a certificate from the manufacturer in which the weld procedures used for the manufacture of valves supplied are stated.

All welds and weld beads, internal and external, shall be smoothed down by grinding and buffing. All stainless steel shall be pickled and passivated before the valve is assembled and tested.

PF 3.3 Testing

Each air valve is to be subjected to the following tests at the factory :

(a) First, fill the valve with water and apply the factory test pressure through the inlet of the valve. Under this condition there shall be no weeping from any part of the valve.

(b) Second, drain the valve and refill the valve with water and apply the maximum working pressure through the inlet of the valve and maintain for at least five minutes. Under this condition there shall be no loss of water from the valve.

(c) Third, gradually reduce the pressure applied under (b) above to atmospheric pressure, empty the valve and refill slowly expelling the air through the valve until it is full of water. Raise the pressure to the minimum working pressure, maintain that pressure for at least five minutes and again there shall be no loss of water from the valve.

(d) Fourth, maintain the minimum working pressure applied in (c) above, isolate the water inlet and introduce small amounts of compressed air into the valve without lowering the pressure in the valve. The lower float shall drop away from the upper float when sufficient air has accumulated in the valve. As soon as the accumulated air in the valve has discharged through the small orifice, the valve shall again close to a watertight condition. This process shall be repeated for at least five different pressures which are equally spaced between the specified

minimum and maximum operating pressures, and the valve shall close automatically when all the air has escaped without any dribbling and shall have a drop-tight shut-off.

PF 3.4 Table of Particular Requirements for Air Valves

Scheduled Items			
Nominal diameter (mm)	80	80	25/50
Class	40	25	16
Flange Size and Rating	SABS 1123 Table 4000	SABS 1123 Table 2500	SABS 1123 Table 1600
Flange Drilling	SABS 1123 Table 4000	SABS 1123 Table 2500	SABS 1123 Table 1600
Factory Test Pressure (metres head of water)	800	500	320
Field Test Pressure (metres head of water)	as for pipeline	as for pipeline	as for pipeline
Working Pressure (metres head of water)			
(a) Maximum	400	250	160
(b) Minimum	10	10	10

PF 4 PAINTING OF VALVES

PF 4.1 The cleaning and painting of valves as specified hereunder is to be carried out at the factory prior to despatch to site.

PF 4.2 All cast iron surfaces of every valve shall be prepared for painting to a thoroughly clean condition free of all grease and deleterious matter. Steel surfaces shall be prepared in accordance with Swedish Standard SIS 05 5900 for a Sa 2.5 finish.

PF 4.3 Internal surfaces shall then be treated with two coats of Copon Hicote 151E or other approved non-toxic epoxy resin paint to give a total minimum dry film thickness of 160 micrometres; both coats being applied within 48 hours of commencement of painting.

PF 4.4 External surfaces shall, immediately after cleaning, be treated with one of the following alternative paint systems:

(a) System 1 - for valves situated in underground chambers or exposed conditions.

Apply three coats of an approved epoxy coal tar paint to give a minimum total dry film thickness of 240 micrometres; all three coats being applied within 72 hours of commencing the first coat.

(b) System 2 - for valves situated in pump stations etc.

Apply one coat of zinc chromate primer followed by one coat of undercoat tinted where necessary, and a final coat of best quality gloss enamel. The total dry film thickness of the system shall be not less than 200 micrometres.
PF 4.5 Non-ferrous metal or stainless steel surfaces shall not be painted.

PF 4.6 After erection on site all valves shall be cleaned and the paint work refurbished where necessary to restore the condition to that at the time of leaving the factory.

PF 5 PAYMENT

The prices quoted for all valves are to include for independent factory testing of valves, which test will be witnessed by Inspectors appointed by the Engineer.

PARTICULAR SPECIFICATION: PES

ENVIRONMENTAL SPECIFICATION

PS EMP ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan and specifications are included under this section and must be adhered to in all respects.

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming. The following specifications must be adhered to in all respects:

PS EMP1

No natural vegetation, trees or crops may be damaged by the Contractor without the written approval of the Engineer. The Contractor must keep the site neat and free of refuse, etc. to prevent possible damage to crops or livestock.

The Contractor's construction activities shall be performed by methods that will prevent the entrance of, or accidental spillage of solid matter, debris, contaminants and other pollutants and wastes into streams and water-courses. Any dewatering for earthworks or structure foundations adjacent to or encroaching on streams or water-courses shall be conducted in a manner to prevent muddy or contaminated water from entering streams or water-courses by means of the construction of intercepting and bypassing ditches, barriers, ponds and other approved means.

Construction activities shall be performed in a manner to keep dust nuisance to a minimum by means of the application of sufficient water or other efficient measures wherever and as often as may prove necessary.

The cost for complying with the requirements regarding protection of the environment specified above shall be included in the rates tendered in the Schedule of Quantities for the various items of work and no additional payment will be made in this regard. The Engineer will be entitled to retain an amount of money, should a dispute between property owners and the Contractor arise. The balance of this money will be released as soon as the dispute is resolved. Should any of the above mentioned items not be complied with, the Engineer reserves the right to appoint another Contractor to rectify these matters. Costs for this work will be deducted from the payment of the Contractor for this Contract.

In order to reduce and control the release of airborne pollutants the Contractor shall ensure that:

(a) No fires are lit on Site to dispose of waste or for cooking.
(b) All loose material that could be blown about or into neighbouring properties by wind is secured.
(c) The spraying of formwork oils, paints and other toxic substances is limited to the application area.

PS EMP2

The Site Agent shall ensure that his team, including sub-contractors, comply with the environmental management requirements of this Contract.

PS EMP3

The Contractor may be required to submit a Construction Method Statement at the Site handover. Activities having an effect on the environment must be addressed in this Construction Method Statement. A list of possible activities is included below.
Possible activities having an effect on the Environment:

1. Collection, storage and disposal of solid waste
2. Collection, storage and disposal of liquid waste
3. Protection of indigenous plant species
4. Protection of natural water sources from liquid and solid wastes
5. Control of noise and dust
6. Security on site
7. Control of veld fires
8. Temporary storage of spoil, disposal of excess spoil and unsuitable materials and the importation of earthworks materials
9. Site clearance prior to construction
10. Felling of trees
11. Habitat restoration
12. Site reinstatement, removal of site offices and final site clearance

PS EMP4

In the event that the Contractor fails to comply with the Environmental Management Specifications, included in the Contract Documents, the following penalties will be imposed per incident:-

Unauthorised damage or removal of trees	R2 500,00
Failure to keep soil types separate during excavation and backfilling	R1 000,00
Failure to provide adequate portable chemical toilets	R 500,00
Failure to comply with solid waste disposal requirements	R1 000,00
Failure to clean up litter at the end of each working day	R1 000,00
Failure to comply with dust prevention requirements	R1 500,00
Failure of Contractor and/or materials supplier to cover vehicle	R 500,00
Failure to comply with noise, light or air pollution requirements	R 500,00
Spillage of hazardous substances	R1 000,00

The Engineer will notify the Contractor of a breach of specification and supply a time period within which remedial action will need to be carried out. Should the time period elapse then the penalty will be imposed and the sum deducted from the following month's certificate.

At the time of tender, the Contractor shall nominate two people who will be responsible for ensuring that the Contractor's team and sub-contractors comply with the environmental management requirements of this contract. While the positions are only part time, these staff members will be called upon from time to time to deal with any events that are not in compliance with the specifications.

PART C4: SITE INFORMATION

C4.1 GENRAL

C4.1.1 Documentation
The documentation included in this section describes the site as at the time of tender to enable the Tenderer to price his tender, furthermore, to decide upon his method of working and programming and to evaluate his risks.

C4.1.2 Information
Only actual information about physical conditions of the site and its surroundings (if any available) is included in this Site Information and the interpretation thereof is a matter for the Tenderer.

C4.1.3 Records and Physical Condition
Refer to the layout drawings in ANNEXURES of the Scope of Works for a graphical overview of the works.

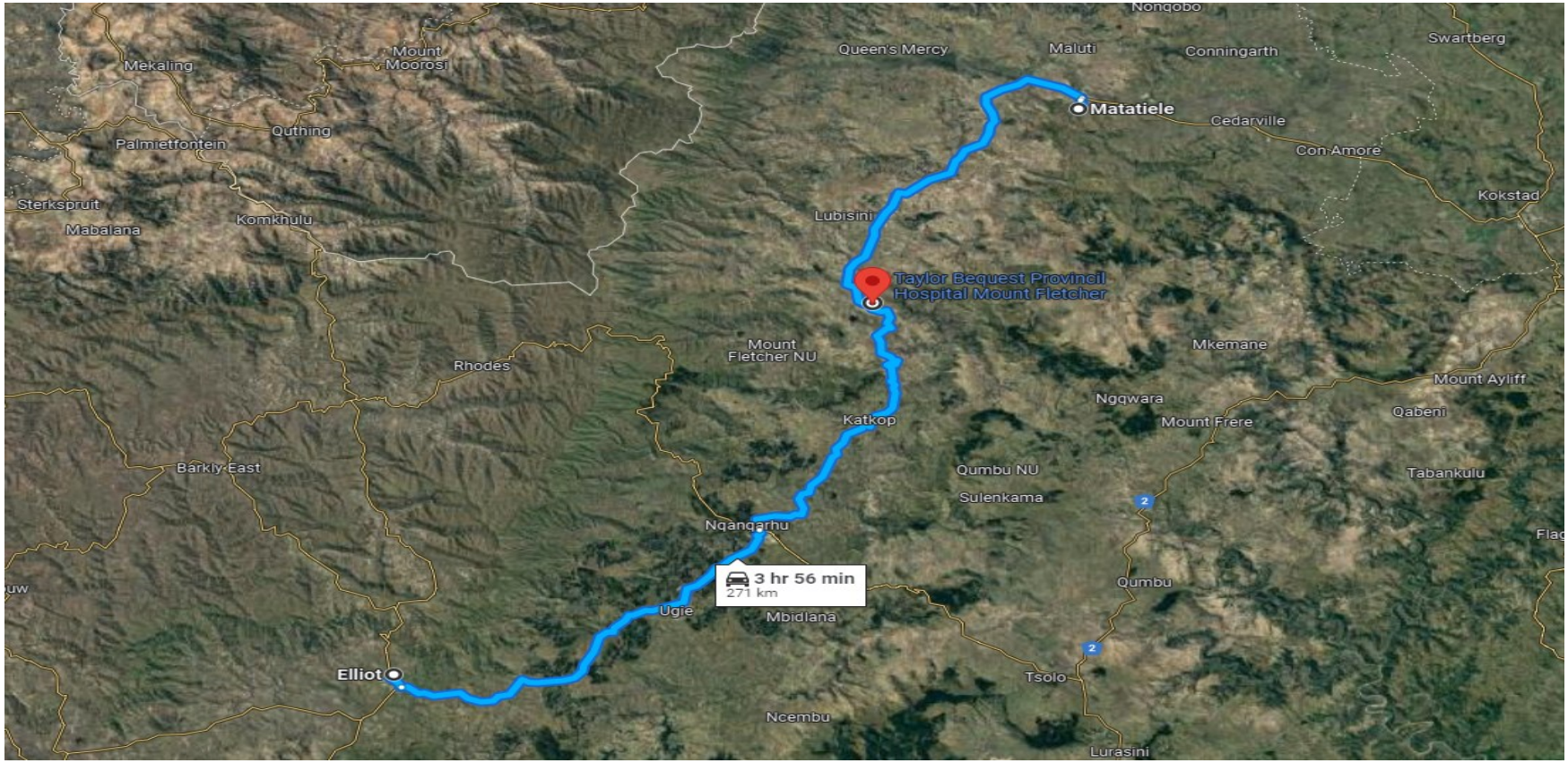
C4.1.4 Services
No formal records are available of the existing services that are above or below ground. The onus therefore is on the tenderer to familiarize themselves with the site, and prove all services in the working areas prior to bringing big machinery.

C4.1.5 Fencing of Works
Tenderers are to note that it is a condition of contract that the “site” shall be always fenced and secure.
Existing fencing cannot be removed in one go. Rather it must be done in segments, such that the new fencing being erected forms a completely protected area which to prevent unauthorized access. Bidders are to price accordingly.

C4.2 PROJECT LOCATION

Taylor Bequest Hospital is a Provincial government-funded District hospital for the Elundini Local Municipality area in Joe Gqabi, Eastern Cape in South Africa. The hospital is located approximately midway between Matatiele and Nqanqarhu along the National Route R56.
Coordinates:

PROJECT SUB-AREA	LATITUDE	LONGITUDE	DISTRICT MUNICIPALITY	LOCAL MUNICIPALITY
Hospital	-30.689478º	28.5100959º	Joe Gqabi	Elundini
Elevated Water Storage Tank	-30.6888764	28.5086019		
WWTW	-30.6874542º	28.5101546º		


Nonqobo
Swartberg
Mekaling
Mount Moorosi
Queen's Mercy
Maluti
Conningarth
Matatiele
Cedarville
Quthing
Palmietfontein
Con Amore
Kokstad
Sterkspruit
Mabalana
Komkhulu
Lubisini
Taylor Bequest Provincial Hospital Mount Fletcher
Mount Fletcher NU
Mkemane
Rhodes
Mount Ayliff
Ngqwara
Qabeni
Katkop
Mount Frere
Barkly East
Qumbu NU
Tabankulu
Sulenkama
Nqanqarhu
3 hr 56 min
271 km
Qumbu
Ugie
Mbidlana
Elliot
Tsolo
Ncembu
Lurasini

PART C5: ANNEXURES

ANNEXURE 1 – MECHANICAL & ELECTRICAL SCOPE OF WORKS

Province of the
EASTERN CAPE
PUBLIC WORKS & INFRASTRUCTURE

CONTRACT No.: SCMU5-23/24-0073

PROVISION OF A 25kVA GENERATOR FOR THE SEWER PACKAGED PLANT

TAYLOR BEQUEST HOSPITAL: STANDBY GENERATOR SPECIFICATION

5th July 2023

1. SCOPE OF INSTALLATION

The installation comprises the design, manufacture, assembly, delivery to site, off-loading at site, installation, testing, commissioning and handing over in first class working order, a complete **25kVA 400V 3 Phase weatherproof** standby diesel generator set complete with soundproof canopy suitable for coastal regions and all ancillary equipment necessary to comply with the requirements of this specification.

The Generator set shall be comprised of a diesel engine close coupled to a brushless alternator all mounted on a fabricated common steel base via anti-vibration mounts, a set of starting batteries, automatic charging unit, a control cubicle housing the generator MCCB and all necessary switchgear, including the change-over equipment and an integral fuel tank built into the base.

The diesel generator shall be installed at the designated area.The generator set shall be off loaded from the delivery vehicle and set it in position within the designated area.

The plant offered shall be of a manufacture where spare parts and maintenance are readily available in the country.

2. GENERATOR RATING

The system to which the plant is to be connected is 3 phase, 4 wire, 400 volt between phases and 230 volt between phase and neutral, with a frequency of 50Hz.

The rating of the diesel generating set shall be based on operation of the set when equipped with all necessary accessories such as radiator fan, air cleaners, lubricating oil pump, fuel injection pump, water circulating pump, and battery charging unit.

The set would produce 23kVA prime power at 0.8PF, 400/230V, three phase four wire, 50HZ running at

1 500RPM. The unit would have an overload capacity of 10% - **20kVA standby rating**.

The generating set shall normally operate as a standby unit. It shall be capable of delivering its full rated output at any time and any ambient conditions likely to occur at the site.

Maximum noise level shall be 70dBA at 7 meters from the generator set.

3. DIESEL ENGINE

The engine shall be a 6-cylinder, water cooled, cold starting, direct injection, compression ignition type, four stroke cycle turbocharged unit with electronic governor control system.

The engine shall be suitable for continuous running at the specified speed delivering its rated output at the site conditions.

In addition, the engine shall be capable of delivering 110% load for one hour, after the set has been running at full load for a period of six hours and shall, after the overload period of one hour, be capable of maintaining the rated output continuously without any undue mechanical strain, overheating, incomplete fuel combustion or other ill effects.

The engine shall have sufficient capacity to start up and immediately on changeover from mains supply, accept full rated load at the specified voltages and frequency.

The engine shall be of the PERKINS, CUMMINS, VOLVO, JOHN DEERE or other approved equal make.

4. ALTERNATOR

The alternator shall be a brushless, single bearing system, four poles with 2/3 pitch stator winding for improved harmonics. Insulation shall be Class H in accordance with BS 5514 standard.

The alternator shall be capable of continuously delivering the full rated load and of providing a 10% overload for the period and in the manner specified for the diesel engine.

The alternator shall be self-exciting and self-regulated and shall incorporate a self-contained automatic voltage regulator. Voltage regulation of the alternator should be better than 1.5% and the standard degree of protection shall be IP22 minimum.

The alternator shall be of the LEEROY SOMER, STAMFORD, MARELLI or other approved equal make.

5. FUEL TANK

The fuel tank would be integral with the base and would contain sufficient fuel to run the generator for 12 hours running at full load. The tank shall be equipped with the following:

- Sludge trap (dished bottom) with drain valve,
- Easily removable, dustproof lid,
- Fuel lever indicator other than a sight glass,
- Outlet valve positioned 50mm above tank bottom,
- 40mm diameter drain line to the bulk tank,
- Injector leak-off return fitting.
- Self-bunded.

6. CONTROL PANEL

The panel shall be designed for the control of the diesel generating set with instrumentation and protective devices required to meet application of both manual and automatic systems.

The control panel shall be of robust construction; floor mounted, totally enclosed and dust proof.

It shall be folded, 1.6mm thick cold rolled sheet steel, construction suitable for front entry through hinged doors. Internal chassis plates, circuit plates, circuit breaker pans and gland plates shall be provided. Special attention shall be given to vermin proofing and dust sealing.

Prior to painting, all steelwork must be thoroughly degreased and de-rusted and then primed with a zinc chromate primer. All internal steel surfaces, including chassis plates, gland plates and switchgear brackets, shall be painted with white powder epoxy paint and all exterior steel surfaces finished with orange powder epoxy paint.

Replacements for the equipment, switchgear and instruments used in the construction of the panel shall be readily available from stock held in the Republic of South Africa.

The changeover control panel is to be situated within the standby generator housing and shall be equipped with the following;

- One suitably rated incoming isolator.

- One suitably rated alternator circuit breaker with adjustable thermal and magnetic overloads.
- One set of suitably rated mechanically and electrically interlocked change over contactors.
- One set of three current transformers.
- One static battery charger with short circuit protection.
- One emergency stop push button.
- All necessary control circuit breakers and relays all wired to terminals.
- One PLC type generator control unit with the following features:
    - An accurate metering and monitoring system with commands to start, change over, and stop the set.
    - The following functions shall be viewable: Battery voltage, mains voltage, alternator voltage, phase current and frequency as well as KW and KVAR.

The electronic controller shall be of type DEEP SEA 7320 or other approved equal make.

7. EXHAUST SYSTEM

The engine shall be fitted with an efficient stainless steel exhaust system. A flexible adaptor shall be fitted between the exhaust outlet and the silencer. The flexible piping shall on no account be used to from a bend or compensate for misalignment. The silences shall be of the highly efficient type suitable for use in residential areas and shall be capable of providing 20 to 30dBA for suppression.

The silencer and discharge piping shall be suitably supported.

The exhaust piping, including the silencer, shall be suitable lagged then clad in polished stainless steel sheet. Openings through the wall are to be neatly drilled and stainless steel flashing plates must be fitted on both sides.

8. BATTERY

The batteries offered shall be maintenance free type. The batteries shall be connected to the engine with suitably rated PVC insulated flexible leads. The batteries shall have sufficient capacity to provide three automatic attempts to start immediately followed by three manual attempts without any appreciable drop in voltage. The automatic attempts to start shall each be of not less than 10 seconds duration with 10-second intervals between and the manual attempts shall be based on the same cranking period.

9. CANOPY

The canopy shall be weather resistant suitable for coastal regions and lined with sound reducing foam. It shall consist of lockable doors on each side, panel window as well as ventilation parts designed with modular principles thus allowing easy maintenance and operation.

Tha canopy should have an exterior emergency stop push button. All metal canopy parts shall be painted with best quality epoxy powder paint suitable for coastal regions.

10. TESTING

Testing at Supplier's Premises

A factory acceptance test shall be carried out in the presence of the Engineer and the Client at the supplier's factory to establish that the diesel generating set and its ancillary equipment meets with the requirements of the specification. The Contractor shall give the Engineer and the Client at least seven days' notice prior to testing the plant. In the event of the generator set failing the test and having to be retested at some future date, all expenses (including travelling) incurred by the Engineer and the Client in attending the second test will be for the Contractor's account.

During the factory accepting test, the generator set shall be subjected to the following;

- Simulate a mains failure to automatically start the plant from cold to test its ability to attain full rated speed and voltage and assume the full load in the specified time of ten seconds. Test run the plant at full load for a period of one hour.
- Immediately after the above specified run, without stopping the plant, run it for a further hour at 110% load.
- Test the plant with regards to voltage dip, voltage and frequency recovery, with a sudden application of various loads.
- Test the plant for its ability to assume full rated load immediately on failure of the normal supply.
- Test and demonstrate (by simulation only where actual conditions could damage the plant and its ancillary equipment) the correct operation of the engine safety controls and alarms together with other alarms as specified.
- Any other tests the Engineer and the Client may consider necessary to establish that the diesel generator and its ancillary equipment as a whole is functioning correctly and in accordance with the specification.

NB - The Contractor shall provide necessary instruments and equipment for carrying out the tests.

The test equipment shall be capable of producing 100% load for one hour and 110% load for a further hour continuously without interruption. The test equipment shall be adjustable.

The test load is to be balanced over three phases.

The Contractor shall also provide all the necessary fuel for testing and commissioning.

Testing on Site

On completion of the installation of the plant, the following tests shall be carried out to the satisfaction of the Engineer and the Client.

- Automatic starting and stopping with load changeover.
- Test by simulation only for the operation of the engine protection and alarm devices.
- Any other tests (except load tests) which the Engineer and the Client may require on site.

The sub-contractor shall provide all the necessary fuel for testing and commissioning and a programmable data logger for permanent record of the test results.

11. MAINTENANCE

At quarterly intervals during the guarantee period of twelve months, the Contractor shall adjust and maintain the standby generator and its ancillary equipment in proper working order.

As a minimum requirement, the contractor shall:

- Check and top-up if necessary, the fluid levels in the radiator, engine sump, fuel oil tank and batteries.
- Test run the standby plant and ancillary equipment for a period of 15 minutes.
- Wipe down the standby plant and its ancillary equipment and report on any evidence of any fluid leaks or other defects.
- Fill in the standby plant logbook.

The cost of such inspections, maintenance, adjustments, repairs, etc. shall be included in the tender price, but the cost of renewing any part which may become worn through fair wear and tear, or damaged beyond the control of the contractor (provided this is not due to unsuitable design), shall be excluded.

(a) If, during the guarantee and maintenance period, the standby generator is not in working order for any reason for which the contractor can be held responsible, then the contractor will be notified and immediate steps shall be taken by him to remedy the defects.

(b) Should the standby generator defects be so frequent as to become objectionable or should the equipment otherwise prove unsatisfactory during the guarantee period, the contractor shall, if call upon by the Engineer and the Client, at his own expense, replace the whole or such parts thereof as the Engineer and the Client may deem necessary, with equipment to be specified by the Engineer and the Client.

Approval - tacit or otherwise - of the equipment installed shall be considered as provisional only and shall not invalidate the Engineer and the Client's right as indicated above.

12. GENERATOR DIMENSIONS AND WEIGHT

Generator dimensions shall be:

1 870mm long x 980mm wide x 1 290mm high.

The generator weight shall be 872kg.

13. GENERATOR ROOM DOOR AND WINDOWS

Generator room door and windows shall be manufactured from 5mm thick steel.

Generator room door and window dimensions shall be:

Type CV door with vents – 1 220mm wide x 2 135mm high.

Type BLU window – 1 590mm wide x 745mm high.

ANNEXURE 2 - LIST OF DRAWINGS

The following drawings/annexure shall be issued during the bid period to form part of the bid documentation. Where applicable, drawings/annexures could be re-issued to the Contractor at commencement of the construction phase.

P44-2101-01-CIV-01-GL-01	GENERAL SITE LAYOUT
P44-2101-01-CIV-01-ET-01	ELEVATED TANK REINFORCEMENT SLAB AND DETAILS
P44-2101-01-CIV-01-ET-02	ELEVATED TANK DETAILS
P44-2101-01-CIV-01-FC-01	FENCE DETAILS
P44-2101-01-CIV-01-RD-01	ROAD DETAILS
P44-2101-01-CIV-01-SP-03	SUMP DETAILS
P44-2101-01-CIV-01-SW-01	STORMWATER DETAILS
P44-2101-01-CIV-01-TP-01	WASTEWATER TREATMENT PLANT LAYOUT

ANNEXURE 3 - CONSTRUCTION HEALTH AND SAFETY

AWARDED TENDERER TO COMPLY WITH ALL OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

Province of the
EASTERN CAPE
PUBLIC WORKS & INFRASTRUCTURE

CONTRACT No.: SCMU5-23/24-0073

PROJECT HEALTH AND SAFETY SPECIFICATION

TAYLOR BEQUEST HOSPITAL, MOUNT FLETCHER REFURBISHMENT, REPAIRS, AND UPGRADES TO WATER & WASTEWATER TREATMENT WORKS

26th July 2023

CONTENTS

1. Introduction

The Occupational Health and Safety (OHS) requirements referred to in this document are Department of Public Works and Infrastructure minimum requirements and should not be construed as all encompassing. The Design, Supply and Installation (DS&I) Contractor is expected to use these (incl. applicable OHS statutory) requirements, referred to in this document, to build into their OHS management system for the project and to consider it when developing the Project OHS Specification, which will be used in the appointment of their Contractors. Department of Public Works and Infrastructure in no way assumes the Contractors legal responsibilities.

The DS&I Contractor as a legal entity, and therefore, an employer in their own right (in terms of Section 37(2) of the OHS Act 85 of 1993 (OHS Act), is and remains accountable for the quality and the execution of the safety, health and environmental program for their employees and contractor employees on this project. Due to the nature and scope of this contract and role and responsibilities that the DS&I Contractor shall be fulfilling, it is to be noted that the duties of the client as referred to in the Construction Regulations 2014 (CR5) of the OHS Act, shall also be fulfilled and complied with in additional to the other applicable statutory OHS requirements.

It also must be noted that Department of Public Works and Infrastructure as the client still ultimately remains accountable and the DS&I Contractor being responsible & therefore the client reserves the right to be provided with assurance by the DS&I contractor and will conduct its own independent assurance through various mechanisms. The DS&I Contractor is expected to appoint a competent person in writing as a “Construction Health and Safety Agent” as per the requirement of Construction Regulations 5(5) of the OHS Act, the appointed person must be registered with the approved statutory body, South African Council for the Project & Construction Management Professions (SACPCMP).

It is internationally accepted that some technologies develop faster than health and safety precautions can keep the trend with. The expectation is that the DS&I contractor must stay abreast of the latest health and safety developments related to the Refurbishment, Repairs, And Upgrades To Water & Wastewater Treatment Works, both from a construction and installed technology perspective. Department of Public Works and Infrastructure expectation is that the DS&I Contractor demonstrates & ensures that is committed to achieving and demonstrating sound Occupational Health and Safety (OHS) management by mitigating OHS risks consistent with its OHS management system and objectives on the Refurbishment, Repairs, And Upgrades to Water & Wastewater Treatment Works Project.

The DS&I Contractor is expected to provide an OHS programme based on the requirements of this document, a detailed plan on how they would fulfil the role of a Client in terms of the Construction Regulations 2014(in terms of CR5) and of the applicable OHS statutory requirements for the contracted scope of work as well as provide a draft Project OHS Specification (in terms of CR5 1(b)) for the proposed scope of work which meets these requirements as well as the relevant applicable OHS legislation.

2. Scope

These requirements set out Department of Public Works and Infrastructure expectations regarding the minimum OHS statutory and Department of Public Works and Infrastructure requirements for Contractors appointed for the Design, Supply & Installation of Taylor Bequest Hospital, Mount Fletcher Refurbishment, Repairs, and Upgrades to Water & Wastewater Treatment Works.

3. Purpose

To provide the Design, Supply and Installation (DS&I) Contractor with Department of Public Works and Infrastructure minimum requirements that they can respond and provide relevant OHS bidding documents which will be assessed by the Client (Department of Public Works and Infrastructure) in order to determine if the DS&I contractor company is competent in respect to OHS planning & management on Taylor Bequest Hospital, Mount Fletcher Refurbishment, Repairs, and Upgrades to Water & Wastewater Treatment Works.

4. Applicability

These requirements are applicable to the Contractor, herein referred to as the DS&I Contractor, appointed for the design, supply & installation of Taylor Bequest Hospital, Mount Fletcher Refurbishment, Repairs, and Upgrades to Water & Wastewater Treatment Works within the Department of Public Works and Infrastructure.

5. Effectiveness

These requirements shall be implemented from date of approval.

6. Normative

Parties using this document shall apply the most recent edition of the documents listed below:

- Occupational Health and Safety Act, Act 85 of 1993
- Labour Relations Act, Act 66 of 1995 (as amended)
- Compensation for Occupational Injuries and Diseases Act, Act 130 of 1993 (COID)
- Construction regulation 2014
- National Environmental Management Act, Act 107 of 1998
- The Reporting, Recording, Investigation, Costing and follow-up of Incidents/Accidents
- Environmental Management Plan Procedure
- Standard for a Fall Arrest System
- 32-37 Substance Abuse Procedure
- All relevant South African legislation (national, provincial, and local)
- Applicable South African National Standards (SANS) for the scope of work/Project.
- Civil and Building Work Act

7. Definitions

a. **Client** means any person for whom construction work is performed;
b. **Construction Regulations** means the Occupational Health and Safety Act's, No 85 of 1993,new Construction Regulations that came into effect in 2014;
c. Contract means the terms and conditions agreed to between the Parties in writing.
d. Contractor" means an employer, as defined in section1 of the Act, who performs construction work and includes principal contractors.
e. Contractor's employee means any or all of the following:

I. Any person employed by the Contractor or a Sub-Contractor, including the Contractor's responsible person.
II. Any person, other than an employee of Department of Public Works and Infrastructure, who carries out work or performs any task on Site for or on behalf of the Contractor or any Sub-Contractor.
III. Any principal, partner, shareholder, director, consultant, executive, manager, staff member or employee of the Contractor or any Sub-Contractor or any Contractor's employee, for any reason whatsoever.

f. Health and Safety file" means a file or other record in permanent form, containing all the safety and health information required as contemplated in the construction regulation.
g. Health and Safety plan means a documented plan by the contractor, which addresses hazards, identified and include safe work procedures to mitigate, reduce or control the hazards identified.
h. Health and safety specification means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons on site. Contractor must be read in conjunction with the construction regulation/OHS Act and other related directives.
i. Occupation: An authorisation granted by Transnet or PRASA'S maintenance for work to be carried out under specified conditions on, over under or adjacent to railway lines.
j. Principal Contractor means an employer, as defined by Section 1 of the OHSACT who performs construction work and is appointed
k. Risk Assessment means a programmed to determine 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.
l. Sub-Contractor means any person appointed by the Contractor as a Sub-contractor in terms of the Contract.

8. Abbreviations

BOQ	Bill of Quantities
BRA	Baseline Risk Assessment
CHS	Construction Health and Safety
CHSO	Construction H&S Officer
CM	Construction Manager
CPM	Construction Project Manager
CR	Construction Regulations (Gazette 10113 of 7/02/2014)
DMR	Driven Machinery Regulations
DoL	Department of Labour
GAR	General Administration Regulations
GSR	General Safety Regulations
HIRA	Hazard Identification Risk Assessment
SHE	Safety, Health and Environment
OHSA	Occupational Health and Safety Act No. 85 of 1993 (as amended)

OHSS	Occupational Health and Safety Specification
PC	Principal Contractor
PM	Programme Manager
Pr. Eng	Professional Engineer
PPE	Personal Protective Equipment
RHCS	Regulations for Hazardous Chemical Substances
RE	Resident Engineer
RSR	Railway Safety Regulator
SABS	South African Bureau of Standards (Authority)
SACPCMP	South African Council for the Construction and Project Management Professions

9. Application of Occupational health and safety Specification

Hazard identification and risk assessment: Development of risk assessments

Every principal contractor performing construction work at Department of Public Works and Infrastructure shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that risk assessments are undertaken by a competent person, appointed in writing, and the risk assessments shall form part of the occupational health and safety plan and be implemented and maintained.

Risk Assessment means a program to determine any risk associated with any hazards at a construction site/workplace.

Effective risk management principals can ensure the non-interruption of business process and ensuring a clean product or services.

For each hazardous situation encountered the following information must be recorded.

- A description of the hazardous situation
- The potential risks of the hazard identified.
- Hazards categorization
- Severity of the risk assessed.
- Decision criterion on the Risks
- Recommendations/ Actions on how to effectively correct or mitigate the identified health and safety hazards/risk taking into consideration legal and other requirements.
- A documented safe working procedures for training and development and empowerment of employees in terms of competency so as to mitigate, reduce or control the risks and hazards identified.
- A plan to review the risk assessments as the work progresses and when changes in scope of work occur.

Review of risk assessments

The principal contractor is required to review the risk assessments under the following circumstances.

- When changes in design or scope are made
- When new risks emerged
- When new technology, process or machinery introduced.

- After incidents
- When new employees are introduced.

Reviewed Risk Assessment must be approved by a contractor Project Manager and kept on a safety file with the date and the Risk Assessment team member and their signature.

Legal Requirements

All Contractors entering into a contract with the Department of Public Works and Infrastructure shall, as a minimum requirement, comply with the -

- OHS Act and a current, up-to-date copy of the OHS ACT 85 of 93 and its Regulations must be available on-site at all times.
- Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (COID Act). The principal contractor will be required to submit a letter of registration and "good-standing" from the Compensation Commissioner.
- Basic Condition of Employment Act

10. Mandatory

Department of Public Works and Infrastructure will enter into agreement with appointed Principal contractor and principal contractor shall enter into agreement with his own subcontractor in terms of OHS Act section 37/2.

Occupational Health and Safety file

The contractor must implement a SHE working file where all records generated during the project will be filed. This file must always be available on site for any Department of Public Works and Infrastructure official or its OHSE Agents to inspect.

Safety file shall be submitted to Department of Public Works and Infrastructure Risk with the following minimum contents:

	SUBMISSION/REQUIREMENTS	Submitted? Yes or Not Applicable
1.	This Specification	
2.	Project Scope	
3.	Notification to be in the form of annexure 2 as per CR 2014, fully completed and must have Stamp from DOL	
4.	Valid letter of Good standing in Principal Contractor's name	
5.	Employee list, with their ID copies, work permits and Next of Kin contacts in case of emergency	
6.	Organizational structure – relevant to the scope of work.	
7.	SHE Policy – signed by the most senior person in the company	
8.	SHE plan in line with this specification. To be acknowledged by Department of Public Works and Infrastructure project team	
9.	Risk Assessments • Department to provide a baseline risk assessment for the project to the contractor as per CR2014. • Contractor to provide a detailed risk assessment based on scope of work (activity based).	
10.	Tool Register	
11.	SHE Induction	
12.	Proof of medical surveillance – done by an Occupational Health Practitioner	
13.	Appointments • All appointment letters to be in line with OHSAct and applicable regulations.	
14.	PPE Matrix A document indicating the contractor's positions and the applicable PPE to each position as per risk assessment outcome	
15.	PPE Records Proof that the employee was issued with the necessary PPE	
16.	Training Records All other training records applicable to the scope.	
17.	Method Statement A detailed description of how work will be performed	
18.	Safe Working Procedure Working instructions.	
19.	Toolbox Talks Proof that the system exists. Contractor to maintain this system throughout his duration of contract	
20.	Chemical substances list	

	All chemical to be used by the contractor to be documented and filed included on file.	
21.	MSDS and training as per chemical list above	

NB:
The Principal Contractor shall hand over a consolidated health and safety file to the Project Manager and/or Consultant upon completion of the Construction Work and shall in addition to documentation mentioned in the Act and applicable Regulations include a record of all drawings, designs, materials used and other similar information concerning the completed structure, and all other applicable records.

11. Communications

The following arrangements will apply-

I. Occupational health and safety communication between Department of Public Works and Infrastructure, the principal contractor, the other contractors, the designer and other concerned parties will be through the occupational health and safety committee.
II. In addition to the above, communication may be directed to Department of Public Works and Infrastructure Risk Manager or Project Manager as soon as the need arises.
III. Consultation with the workforce on occupational health and safety matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any.
IV. The principal contractor will be responsible for the dissemination of all relevant occupational health and safety information to the other contractors, for example design changes agreed with Department of Public Works and Infrastructure and the designer, instructions by Department of Public Works and Infrastructure and/or his agent, exchange of information between contractors, the reporting of hazardous and/or dangerous conditions and/or situations etc.
V. The principal contractor will be required to do site safety walks with Department of Public Works and Infrastructure and/or his agent on a basis to be determined and agreed between the parties.
VI. The principal and other contractors will be required to conduct toolbox talks with their employees on a weekly basis and records of these must be kept on the occupational health and safety file. Employees must acknowledge the receipt of toolbox talks which record must, likewise be kept on the occupational health and safety file.
VII. The principal contractor's most senior manager on site will be required to attend all site occupational health and safety meetings.
VIII. Department of Public Works and Infrastructure or his agent and the principal contractor will agree of the dates, times and venues of the occupational health and safety meetings.

12. Checking, reporting and corrective actions

I. Monthly compliance assessment by Client [Construction Regulation 5(1)(0)] Department of Public Works and Infrastructure will be conducting a monthly assessment to comply with Construction Regulation

5(1)(o) and to confirm that the principal contractor has implemented and is maintaining the agreed and approved occupational health and safety plan.

II. Other assessments and inspections by Department of Public Works and Infrastructure reserve the right to conduct other ad-hoc assessments and inspections as deemed necessary. This could include among others site safety walks.

III. Conducting an assessment/Audit - A representative of the principal contractor (Construction Health and Safety Officer and Construction Manager/Supervisor) must accompany Department of Public Works and Infrastructure on all assessments and inspections and may conduct his/her own inspection at the same time. Each party will, however, take responsibility for the results of his/her own assessment and/or inspection

IV. Contractor's assessments and inspections - The principal contractor is to conduct his own internal assessments and inspections to verify compliance with his own occupational health and safety plan and management system as well as the requirements of this specification and the compliance of other contractors under his/her control.

V. Inspections by SHE representatives - Occupational health and safety representatives must conduct their monthly inspections of their areas of responsibility and submit the deviation to the attention of the supervisor. The monthly report is thereafter tabled during OHS committee meeting. All other appointees as mentioned as per Roles and Responsibility must conduct inspections and report thereon as specified in their appointments as follows:

- Critical Inspection, this is conducted before any machinery is bring into motion including vehicle, plant and machinery drivers,
- Area inspection
- Legal Inspection.

VI. Recording and review of inspection results - All the results of the abovementioned inspections must be in writing, reviewed at occupational health and safety committee meetings, endorsed by the chairperson of the meeting and placed on the occupational health and safety file.

VII. Reporting of inspection results - The principal contractor is required to provide Department of Public Works and Infrastructure with a monthly report on safety and health performance on site (such report format

13. Incident reporting and investigation

Reporting of accidents and incidents

In addition to any statutory obligations, the Contractor shall, as soon as possible, report to the Agent/Resident Engineer/ Project Manager and or and Employer's insurance department every occurrence on the Works or the Site which causes damage to property, or injury or death to persons including the Contractors employees.

The principal contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- Dies
- becomes unconscious
- loses a limb or part of a limb
- is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

or where -

- a major incident occurred
- the health or safety of any person was endangered
- where a dangerous substance was spilled
- the uncontrolled release of any substance under pressure took place
- machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- machinery ran out of control

to the Resident Engineer/Project Manager/OHSE Agent or Department of Public Works and Infrastructure Risk Manager within one hour and to the Provincial Director of the Department of Labour within seven calendar days from date of incident (Section 24 of the OHSACT and General Administrative Regulation 8), except that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both the Client and the Provincial Director of the Department of Labour forthwith by telephone, telefax or e-mail. All other reports should still be completed and provided as required.

Contractor shall inform Continuous Safety Monitors (appointed Occupational Health & Safety Consultant) about all incidents and accidents within 8 hours. The Consultant/Engineers shall have the right to make any enquiries, either on the Site or elsewhere, as to the cause and results of any such occurrence and the Contractor shall make available to the Consultant the necessary facilities for carrying out such enquiries.

INCIDENT INVESTIGATION

The principal contractor is responsible for the Investigation of all incidents that happen and are involving or in connection with the construction activities where employees, visitors and or member of community are affected.
Incident:

- All temporally Disabling injuries
- All fatalities
- Motor Accidents
- Minor Injuries
- First Aid cases
- Near Hit/miss etc

The results of the investigation to be entered into the accident or incident register.

All incident investigation must include the action and preventative measures to be applied and make available to any person on request.

Department of Public Works and Infrastructure reserves the right to hold its own investigation into an incident or call for an independent external investigation.

14. Occupational Health and Safety practice and control

A. Emergency preparedness plan and response
   I. The principal contractor must appoint a competent person to act as emergency controller and/or coordinator.

II. The principal contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that PRASA may have in place.

III. The principal contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarize employees with them.

B. First-aid

I. The principal contractor must provide first-aid equipment (including a stretcher) and have qualified first-aider(s) on site as required by General Safety Regulation 5 of the OHS ACT 85 of 93.

II. The contingency plan of the principal contractor must include arrangements for the speedily and timeously transportation of injured and/or ill person(s) to a medical facility or of getting emergency medical aid to person(s) that may require.

III. The principal contractor must have firm arrangements with his other contractors in place regarding the responsibility of the other contractors injured and/or ill employees.

C. Security

I. Fencing and Access Control at Site Camp

The Principal Contractor must fence off construction site camp to prevent unauthorised entry and disruptions.

The site must be fenced off as follows

- The fence of minimum of 1.6 meters high
- The contractor is required to maintain fencing intact for the duration of the project
- Lockable gates with warm body security must be provided at the site entrance to ensure control of visitors.

II. Access to the site must be monitored and controlled with laid down rules implemented and maintained throughout the duration of the construction. A sign displaying an unauthorized person not permitted must be available.

III. The principal contractor must develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

D. Traffic Management during construction

Where construction work is undertaken in, next to or close to a public road, the use of appropriate as well as a sufficient number of road signs is of paramount importance to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/risks/vehicles.

The principal contractor shall ensure that appropriate as well as a sufficient number of road signs are posted to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/vehicles. These signs shall be repeated and utilized, where appropriate, as actual construction work is approached.

Where construction work includes excavations in or next to a public road, warning lights or visible boundary indicators should be provided after dark or when visibility is poor. The maintenance of all signage and especially those that is suitable after dark should be duly managed. Where appropriate duly trained flag persons should be deployed a good distance ahead of areas where traffic is deviated, or lanes closed off. These flag persons should be managed assertively to ensure that they add optimal value, and should they not do so they should be retrained and if necessary, replaced.

The community liaison officers (CLOs) should also be sensitized on the optimal management of traffic and the risks involved and then be instructed to increase community awareness through talking to all stakeholders including the distribution of suitable information brochures.

15. Fall protection (Construction regulation 10)

I. A pre-emptive risk assessment will be required for any work to be carried out above two metres from the ground or any floor level and will be classified as “work in elevated positions”.
II. As far as is practicable, any person working in an elevated position will work from a stable platform, ladder or other device that is safe if person is working at ground level and whilst working in this position be wearing a single belt with lanyard to prevent the person falling from the platform, ladder or other device utilized. This safety belt will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length and strength that the person will not be able to move over the edge.
III. The person will be provided with a full body harness that will be worn and attached above the wearer’s head at all times and the lanyard must be fitted with a shock absorbing device or the person must be attached to a fall arrest system such as life line that is approved by OHSE Agent/Risk Management
IV. If necessary provision of extra measures should be applied such as catch net.
V. All lanyards should be load tested yearly, proof of such to be kept in a safety file on site.

16. Structures

The principal contractor must ensure that:

a) Only skilled employees are allowed to erect structures and that the skills of these employees are being verified at regular intervals.
b) Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it.
c) No structure is overloaded to the extent where it becomes unsafe.
d) Contractor responsible person verify receive from the designer the following information:
    - Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work.
    - A geo-scientific report (where applicable).
    - The load the structure is designed to bear.
    - The methods and sequence of the construction process etc.

17. Lifting Equipment

Lifting equipment must be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical standards and operated, used, inspected and maintained in

accordance with the manufactures requirements as well as that of the Driven Machinery Regulation 23 of the OHS ACT 85/93:

The Driven Machinery Regulation requires that:

a) Lifting equipment be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the table of maximum loads should be used by the driver/operator;
b) Each winch on a lifting machine must at all-time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit;
c) Lifting equipment be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted;
d) Lifting equipment fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML;
e) Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
    - Chains – 4 (four)
    - steel wire ropes - 5 (five)
    - fibre ropes - 10 (ten)
f) Every hook or load attaching device must be designed such or fitted with a device that will prevent the load from slipping off or disconnecting;
g) Every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturers prescription or to 110% of the MML in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;
h) All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book; and
i) No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour.

18. Machine Operators

The following requirements will apply to machine operators:

a. Only certified and/or competent employees may be allowed to operate any machinery.
b. Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating.
c. Contractor to ensure all plant are used as per user instructions
d. Operators must be medically certified

19. Construction Vehicle and Mobile Plant

An audit for construction vehicles and mobile plant will conducted and inspected by Department of Public Works and Infrastructure as part of Safety file requirement, prior to being allowed on a project site and suppliers of hired

vehicles, plant and equipment will be required to comply with this specification as well as the OHS ACT and Regulations.

Construction vehicles and mobile plant must be:

a. Road worthy and valid registration documents
b. Of acceptable design and construction;
c. Maintained in good working order;
d. Used in accordance with their design and intention for which they were designed;
e. Operated and/or driven by trained, competent and authorized operators/drivers.
f. Provided with safe and suitable means of access;
g. Fitted with adequate signalling devices to make movement safe including reversing;
h. Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into same;
i. Provided with roll-over protection;
j. Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book;
k. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and
l. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

Operators and drivers of construction vehicles and mobile plant must be in possession of a valid medical fitness certificate declaring the operator and/or driver physically and psychologically fit to operate or drive construction vehicles and mobile plant.
No loose tools, material etc. is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

The construction site must be organized to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not obstructed.

Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights, reflectors or barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant.

In addition construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.

All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.

20. Electrical Installation

The installation of temporary electricity for construction use shall be in accordance with Construction Regulation 22 and the Electrical Installation Regulations.

The principal contractor must ensure that:

a. Existing services are located and marked before construction commences and during the progress thereof;
b. Where the abovementioned is not possible, employees with jackhammers etc. are protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etc;
c. Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site;
d. Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file;
e. Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the occupational health and safety file; and
f. A competent person appointed in writing must control all temporary electrical installations.

21. Electrical and mechanical lockout

An electrical and mechanical lockout procedure must be developed by the principal contractor and submitted to Department of Public Works and Infrastructure for approval before construction commences. All contractors on site must adhere to this lockout procedure.

22. Use and storage of flammables

The principal contractor must ensure that:

a. No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions is taken;
b. No flammables is used or applied e.g. in spray painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose unless there is no danger of fire or explosion due to the application of adequate ventilation;
c. The workplace is effectively ventilated. Where this cannot be achieved:
    - Employees must wear suitable respiratory equipment
    - No smoking or other sources of ignition is allowed in the area
    - The area is conspicuously demarcated as “flammable”
d. Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with access control measures in place and sufficient fire fighting equipment installed and fire prevention methods practiced for example proper housekeeping;
e. Flammables stored in a permanent flammable store are stored so that no fire or explosion is caused i.e.:
    - Stored in a locked and well-ventilated reasonably fire resistant container, cage or room conspicuously demarcated as “Flammable Store – No Smoking or Naked Lights”

- The flammables store to be constructed of two-hour fire retardant walls, door and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall
- Adequate and suitable fire fighting equipment installed around the flammables store and marked with the prescribed signs
- All electrical switches and fittings to be of a flameproof design
- Any work done with tools in a flammable store or work areas to be of a non-sparking nature
- No Class A combustibles such as paper, cardboard, wood, plastic, straw etcetera to be stored together with flammables
- The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored
- A sign indicating the capacity of the store to be displayed on the door

f. Only one day's quantity of flammable is to be kept in the workplace;
g. Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas;
h. Metal containers to be bonded to earth whilst decanting to prevent build-up of static forces; and
i. Welding and other flammable gases to be stored segregated as to the type of gas and empty and full cylinders.

23. Housekeeping

The principal contractor must ensure that:

- Housekeeping is continuously implemented and maintained;
- Materials and equipment is properly stored;
- Scrap, waste and debris is removed regularly;
- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;
- Waste and debris not to be removed by throwing from heights but by chute or crane;
- Where practicable, construction sites are fenced off to prevent entry of unauthorized persons;
- Catch platforms or -nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects;
- An unimpeded work space is maintained for every employee;
- Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done;
- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials;
- The walls and roof of every indoor workplace be sound and leak-free; and
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fences, boarded over or provided with protection to prevent persons from falling.

24. General Hygiene Facility and Cleanliness

Site facilities shall be established and maintained by the DS&I Contractor. The facilities include, but are not limited to the following: (refer to OHS Act Construction Regulation 30)

- Temporary Facility Layout Plan
- Sheltered eating facilities
- Change rooms
- Ablution facilities
- Site Sheds, Offices and Amenities
- Lay down and Storage
- Temporary Site Services

Reasonable and suitable living accommodation may be provided for employees who are far removed from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available

25. Personal protective equipment

The contractor shall proactively identify all hazards in the workplace and assess them on an on-going basis. The decision criteria must be decided either to accept the risk or remove them intention being to protect employees and make it possible for them to work safely and without risk to health under those hazardous conditions.
Personal protective equipment is the last resort after engineering and other method are applied.

The principal contractor shall maintain the PPE and enforce, instructs and trains the employees in the use of the equipment and ensures that the prescribed PPE is used.

The principal contractor may not deduct any fee from employees for buying of PPE unless the following conditions exist:

- Where the employee requests additional issue;
- Where the employee has abused or neglected the use of PPE
- Where the employee has lost the equipment due to negligence.

26. Public health and safety

The principal contractor is responsible for ensuring that community and visitors affected by the construction work are made aware of the risk exposure likely to arise from construction work:
Visitors;
The surrounding community; and
Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

All visitors entering the site must receive and undergone a site specific risk based induction.

27. Hazardous chemical substances

The principal contractor must ensure that:

a. Employees receive the necessary information and training to be able to use and store hazardous chemical substances safely;
b. Employees obey lawful instructions regarding:
    - The wearing and use of protective equipment
    - The use and storage of hazardous chemical substances
    - The prevention of the release of hazardous chemical substances
    - The wearing of exposure monitoring and measuring equipment
    - The cleaning up and disposal of materials containing hazardous chemical substances
    - Housekeeping, personal hygiene and the protection of the environment
c. The risk assessments required in terms of Construction Regulation 7 include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;
d. Suppliers provide the necessary information in the form of a material safety data sheet regarding hazardous chemical substances required to ensure the safe use and storage of that substances;
e. A list of all HCS on site must be drawn in a alphabetical order and each HCS must have specific MSDS and it must be known to employees.
f. Hazardous chemical substances containers be clearly marked as to the contents and main hazardous category e.g. “Flammable” or “Corrosive” and the reference number of the hazardous chemical substances on the list indicated above;
g. Hazardous chemical substances for example asbestos dust is not cleared by using compressed air but should be vacuumed;
h. No person eats or drinks in a hazardous chemical substances environment
i. HCS waste is disposed safely as per environmental management plan requirements.

28. Excavations/Piling

Excavations deeper than 1,5 m in depth, the principal contractor must submit a method statement to PRASA for approval before commencing with the excavation and the permit to proceed will be issued once the risk assessment and method statement is approved.

Excavation work has to comply with the following:

a. Excavation work must be carried out under the supervision of a competent person who has been appointed in writing.
b. Before excavation work begins the stability of the ground must be evaluated.
c. Whilst excavation work is being performed, the appointed excavation supervisor must take reasonable steps to prevent any person from being buried or trapped by a collapsing wall, fall or dislodgement of material.
d. No person may be required or permitted to work in an excavation that has not been adequately shored or braced.
e. Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out but only after written permission has been obtained from the appointed competent person.
f. Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing.

g. Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavator.
h. No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load.
i. Neighbouring /adjoining buildings, structures or roads that may be affected or endangered by the excavation must be suitably protected.
j. Every excavation must be provided with means of access that must be within 6 meters of any employee within the excavation at any time.
k. The location and nature of any existing services such as water, electricity, gas, tellkom optic fibre wire, signal cable etc., must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for employees working in or near in the excavation.
l. Every excavation, including the shoring and bracing or any other method to prevent collapse, must be inspected by the appointed competent person:
    - Daily before work commences,
    - After every blasting operation,
    - After an unexpected collapse of the excavation or part thereof,
    - After substantial damage to any support,
    - After rain
m. The results of any inspections must be recorded in a register kept on site.
n. Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off to at least one meter high and as close to the excavation perimeter as practicable.

Entrances to excavation see Confine space requirements

Method statement and Risk Assessment must be handed prior to commencement of any piling activity.
Geotech must be engaged for soil testing purpose and the result discussed with all concern parties

29. Tunnelling activities

The principal contractor must ensure that:

a. Tunnelling activities are carried out under the supervision of a competent person with at least ten years practical experience in tunnelling work who has been appointed in writing.
b. All tunnelling activities comply with the Tunnelling Regulations as published under the Mine Health and Safety Act (No 29 of 1996), as amended.
c. No person is allowed to enter a tunnel which has a height dimension of less than 800 mm.

30. Working in confined spaces

All confined spaces shall be considered "permit-required" spaces unless a pre-entry procedure has demonstrated otherwise. A permit shall be completed before approval can be given to enter a
"permit-required" confined space. This permit shall be maintained at the jobsite for the duration of the job.

All confined spaces shall be tested for poisonous gases and/or oxygen deficiency prior to entry.
When in confined areas such as boilers, tanks, drums, manholes, etc., or where noxious or poisonous gases may be present, the appropriate breathing apparatus shall be used.

Where dangerous gases or harmful substances are present in the immediate work area, air supplied masks shall be worn.

Proper ventilation and all other required protective equipment shall be used.
Hazardous work areas containing noxious or poisonous gases shall not be entered without proper protective equipment being worn and without being accompanied by a fellow employee who has been properly trained and familiar with the use of such protective equipment.

31. Form and support work

a. Form and support work must be carried out under the supervision of competent person designated in writing.
b. Form and support work structures must be so designed, erected, supported, braced and maintained that it will be able to support any vertical or lateral loads that may be applied.
c. No load may be imposed onto the structure that the structure is not designed to carry.
d. Form and support work must be erected in accordance with the structural design drawings for such form and support work and if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the form and support work.
e. All drawings pertaining to the form and support work must be kept available on site.
f. All equipment used in the erection of form and support work must be checked by a competent person before use.
g. The foundation or base upon which the form and support work is erected must be able to bear the weight and keep the structure stable.
h. Employees erecting form and support work must be trained in the safe work procedures for the erection, moving and dismantling of the form and support work.
i. Safe access and emergency escape must be provided for employees.
j. A competent person must inspect the form and support work structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the form and support work is stripped. The results of all inspections must be recorded in a register kept on site.
k. The form and support work must be left in place until the designated competent person has authorized its stripping in writing.
l. Any damaged form and support work must be repaired and/or rectified without delay.
m. Deck panels must be secured against displacement.
n. The slipping of employees and other persons on release agents on deck panels must be prevented at all times.
o. Employees' health must be protected against the use of solvents, oils or other similar substances.

32. Demolition Work

a. Demolition work must be carried out under the supervision of a competent person who has been appointed in writing.
b. A detailed structural engineering survey of the structure to be demolished must be carried out and a method statement on the procedure to be followed in demolishing the structure must be developed by a competent person, before any demolition may be commenced.
c. As demolishing progresses the structural integrity of the structure must be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature collapse.
d. Steps must be taken to ensure that where a structure is being demolished:
    I. no floor, roof or any other part of the structure is overloaded with debris or material that would make it unsafe;
    II. precautions are taken to prevent the collapse of the structure when any frame or support is cut or removed;
    III. shoring or propping is applied where necessary;d. no employee is required or allowed to work under unsupported overhanging material; and
    IV. the stability of an adjacent building, structure or road is maintained at all times.
e. The location and nature of any existing services such as water, electricity, gas etcetera must be established before any demolition is commenced with and any service that may be affected by the demolition must be protected and made safe for employees and other persons.
f. Every stairwell in a building being demolished must be adequately illuminated.
g. Convenient and safe means of access must be provided.
h. A catch platform or net must be erected over every entrance to the building or structure being demolished where the likelihood exists of material or debris falling on employees and/or persons entering and leaving and every other area where the likelihood exists of material or debris falling on employees and/or persons must be fenced or barricaded
i. No material may be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded.
j. Waste and debris may only be disposed of from a height in a chute with the following design:
    I. adequately constructed and rigidly fastened;
    II. inclined >45 degrees and enclosed on all four sides;
    III. fitted with a gate or control mechanism to control the flow of material that may not freefall down the chute;
    IV. discharged into a container or a barricaded area; and
    V. demolition equipment may only be used on floors or slabs that are able to support it.
k. Asbestos related work must be conducted to the requirements of the Asbestos Regulations promulgated under the OHS ACT and in particular Asbestos Regulation 21, i.e.:
    I. Demolition of asbestos may only be carried out by a registered (with the Department of Labour) asbestos contractor;
    II. all asbestos materials likely to become airborne must be identified; and
    III. a plan of work must be submitted for approval to an Approved Asbestos Inspection Authority (AIA), whom is approved by the Department of Labour, 30 days prior to commencement of demolishing work unless the plan was drawn up by an AIA and a signed (by all parties) copy is submitted to the Department of Labour 14 days before commencement of the demolishing.
l. During demolition work:
    I. all asbestos containing material must be disposed of safely;
    II. employees must be issued with appropriate PPE and the proper use thereof enforced; and

III. after the demolition has been completed the area/premises must be thoroughly checked to ensure that all asbestos waste has been removed.

m. No employee is allowed to:
   I. use compressed air or permit the use of compressed air to remove asbestos dust from any surface or employee or person;
   II. smoke, eat, drink or keep food or beverages in an area not specifically designated for this; and
   III. apply asbestos by spraying.

n. Lead related work must be conducted to the requirements of the Lead Regulations promulgated under the OHS ACT 85/93.

o. Where demolition works will involve the use of explosives, a method statement must be developed by a competent person in accordance with applicable explosives legislation.

33. Transportation of Personnel

a. Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried.

b. The principal contractor shall not allow employees to be transported in a goods vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of –
   - at least 350 mm above the surface on which employees are seated;
     or
   - at least 900 mm above the surface on which employees are standing in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.

34. Cleaning and Rehabilitation of site

The Contractor shall keep the Site clean and tidy for the duration of the Contract and upon termination of the Contract for whatsoever reason the Contractor shall clean and rehabilitate the Site to the satisfaction of Department of Public Works and Infrastructure. The Polluter Pay Principal will be applied by Department of Public Works and Infrastructure if contractors do not comply with this requirement.

35. Intergraded Health, safety and Environmental policy

The principal contractor has to provide Department of Public Works and Infrastructure, as an annexure to the health and safety plan, with a detailed health and safety policy outlining the principal contractor's stance on and principals adopted for health and safety. Policy to be signed by the most senior person. Policy to be inducted to all employees.

36. Cost for health and safety measures during the construction process

To enable Department of Public Works and Infrastructure to comply with Construction Regulation 5 all potential principal contractors submitting tenders have to demonstrate to Department of Public Works and Infrastructure that sufficient provision has been made for the cost to implement the health and safety plan proposed by the principal contractor to meet the requirements of this health and safety specification as well as that of the OHS ACT and its Regulations.

A detailed schedule of costs has to be included in the health and safety plan submitted as part of the potential principal contractor's tender document. Failure by the principal contractor to adhere to this requirement will force Department of Public Works and Infrastructure to reject the tender in terms of Construction Regulation.

Refer to the OHS/SHE part of the Bill of Quantities (BOQ)/Schedule of payments for guidance on pricing for Occupational Health and Safety

ANNEXURE 4 - EPWP SPECIFICATION

EPWP SPECIFICATION

AWARDED TENDERER WILL BE REQUIRED TO ADHERE TO ALL EPWP SPECIFICATIONS AND REQUIREMENTS.

FOR FULL SPECIFICATIONS AND REQUIREMENTS VISIT

www.epwp.gov.za