



RUSTENBURG LOCAL MUNICIPALITY

BID NO: RLM/OMM/0109/2023/24

APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT)

PARTICULARS OF THE BIDDER	
NAME OF THE BIDDING OR TENDERING COMPANY	
POSTAL ADDRESS	
	POSTAL CODE
STREET ADDRESS (PHYSICAL ADDRESS)	
	POSTAL CODE
E-MAIL ADDRESS	
TELEPHONE NUMBER (TELKOM LINE)	
CIDB CRS NUMBER	
CELLPHONE NUMBER	
ALTERNATE CELLPHONE NO.	
CENTRAL SUPPLIER DATABASE NUMBER OF THE BIDDING COMPANY	



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TENDER ADVERTISEMENT

1. Bid documents available at a non-refundable amount of R 3 000-00 per bid document are available on the e-tender website and must be downloaded.
2. Bid documents must be in a sealed packaging clearly marked: **“RLM/OMM/00109/2023/24 - appointment of a contractor for the upgrading of Lethabong Wastewater treatment works and installation of sewer reticulation system phase C (RE-ADVERT)** and must be placed in the bid box in the foyer of the Municipal offices, Missionary Mpheni House, Beyers Naude Drive, Rustenburg not later than the **31st of May 2024 @ 09H00**, where after the bids will be opened in public at the Municipal offices.
3. The bid will be evaluated as follows: **Administrative evaluation (document completion and attachment of mandatory documents), CIDB grading of 6CE or higher, Functionality 70 out of a minimum of 100 points and 80/20 Preference Point System (price = 80 & Specific Goals = 20)**
4. Please note that no bid documents sent through to couriers will be signed for by Rustenburg Local Municipality.
5. Please note that no bid documents sent by electronic mail or post will be accepted by Rustenburg Local Municipality.
6. Rustenburg Local Municipality will not be responsible for bids submitted late.
7. Bids will remain valid for 90 (Ninety) days. Validity period will only be extended once as prescribed in the Rustenburg Local Municipality Supply Chain Management Policy
8. All bids will be adjudicated based on the prescribed criterion as stipulated in this document.
9. No bids will be considered from any person(s) in the service of the state (as defined in Regulation 1 of Local Government: Municipal Supply Chain Management Regulations).
10. Objections or complaints must be submitted in writing to the Municipal Manager at the address stated, and must contain the following:
 - (a) reasons and/or grounds for the objection or complaint.
 - (b) the way in which the objector or complainant's rights have been affected; and
 - (c) the remedy sought by the objector or complainant.
11. Any objection or complaint must reach the Municipal Manager within a 14-day period after award has been made. Late objections or complaints will not be entertained.
12. All bids must be submitted on the official forms provided.



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TENDERING PROCEDURES:

DOCUMENT COMPLETION INSTRUCTION AND RETURNABLE DOCUMENTS SCHEDULE

- ✓ ***NB! FAILURE TO ADHERE TO THE BELOW MENTIONED POINTS WILL INVALIDATE THE TENDER AND RESULT IN DISQUALIFICATION***

CENTRAL SUPPLIER DATABASE REGISTRATION (CSD)

- ✓ Bidders must be registered on CSD and provide their registration number on the tender/ quotation document.
- ✓ Bidders **must** submit both a hard copy document and an electronic tender document in the form of a USB (only) which must be clearly marked with the company name. (Bidders will be disqualified for not submitting a **USB** containing the scanned bidding documentation)

COMPLETION OF THE DOCUMENT

PLEASE READ AND FOLLOW INSTRUCTIONS BELOW ON HOW TO COMPLETE DIFFERENT FORMS IN THE DOCUMENT AND FILL THEM AS INSTRUCTED

- ✓ The tender documents must be completed in full i.e. Compulsory Questionnaire, MBD 1, Pricing Schedule, MBD 4, MBD 5, MBD 6.1, MBD 8, MBD 9, Section 38 and the Form of Offer, including all witness signatures on all the above stated forms.
- **COMPULSORY QUESTIONNAIRE** must be fully completed and signed.
 - ✚ ***In a case of Joint Venture separate COMPULSORY QUESTIONNAIRE forms must be completed and submitted.***
- **MBD 1** must be fully and correctly completed.
- **PRICING SCHEDULE** must be fully completed and signed.
- **MBD 4** -only tick the appropriate option. Please be informed that whether you scratch out, tick or circle, **your answer will be where the pen ink is reflecting.**
 - ✚ ***In a case of Joint Venture or multi- directors, full details of all Directors must be provided on the table on MBD 4.***
- **MBD 5** -only tick the appropriate answer. Please be informed that whether you scratch out, tick or circle, **your answer will be where the pen ink is reflecting.**
 - ✚ ***In a case of Joint Venture separate MBD 5 forms must be completed and submitted.*** (complete if applicable)
- **MBD 6.1** – must be fully and correctly completed.
- **MBD 8** - only tick the appropriate option, whether you scratch out, tick or circle, your answer will be where the pen ink is reflecting.
- **MBD 9** - must be fully and correctly completed.
- **SECTION 38** - only tick the appropriate option, whether you scratch out, tick or circle, your answer will be where the pen ink is reflecting. Must be fully and correctly completed.
 - ✚ Note that should you answer “**NO**” to any of the declaration questions on **section 38 form**, then supporting documents **MUST** be attached!



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- **SIGNATORY AUTHORISATION** – must be fully and correctly completed.

THE FOLLOWING MANDATORY DOCUMENTS MUST BE SUBMITTED TOGETHER WITH THE BID DOCUMENT

- ✓ Deposit slip with the unique tender reference number as stipulated in the tender advertisement.

FOR ALL DOCUMENTS THAT WILL NEED CERTIFICATION AND AFFIDAVITS WHERE APPLICABLE, BIDDERS ARE REQUIRED NOT TO SUBMIT COPIES OF CERTIFIED COPIES.

MUNICIPAL RATES AND TAXES STATEMENTS OF THE DIRECTORS

- ✓ Current municipal rates and taxes statement in the names of the director (from previous billable month determined by the date of tender closure) for each directors' address must be attached; or
- ✓ Valid lease agreement of the director/s with all critical contractual obligations or,
- ✓ An original letter from tribal authority not older than three (3) months if the director/s are residing in a tribal land, or
- ✓ If the rates and taxes account is not in the names of the director/s the attached municipal rates and taxes statement must be submitted together with an original affidavit from the property owner whose names are appearing on the municipal rates and taxes statement to confirm that the director resides in their property.

MUNICIPAL RATES AND TAXES STATEMENTS OF THE COMPANY

- ✓ Current municipal rates and taxes statement in the name of the company (from previous billable month determined by the date of tender closure) for the company's' address must be attached; or
- ✓ Valid lease agreement of the company (showing all critical contractual obligations, or
- ✓ An original letter from a tribal authority not older than three (3) months if the company is operating from a tribal, or
- ✓ If the rates and taxes account is not in the names of the company, the attached municipal rates taxes statement must be submitted together with an original affidavit from the property owner whose names are reflecting on the municipal rates and taxes statement to confirm that the company operates from their property.

NB!!

THE COMPANY ADDRESS WRITTEN ON THE TENDER DOCUMENT, AND STATEMENT SUBMITTED MUST BE THE SAME AS THE ONE REFLECTING ON THE CSD REPORT

- ✓ **FOR PROCUREMENT EXPECTED TO BE LESS THAN 10 MILLION, AWARDS WILL NOT BE MADE TO BIDDERS OWING MUNICIPAL RATES AND TAXES FOR OVER 90 DAYS AT THE TIME OF TENDER CLOSURE**
- ✓ **FOR PROCUREMENT EXPECTED TO BE MORE THAN 10 MILLION, AWARDS WILL NOT BE MADE TO BIDDERS OWING MUNICIPAL RATES AND TAXES FOR OVER 30 DAYS AT THE TIME OF TENDER CLOSURE**
- ✓ Required CIDB Grading Certificate where applicable.
- ✓ Signatory resolution – Please attach a copy of Signatory resolution where instructed.



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- ✓ If the submission is from a Joint Venture, then a JV agreement must be attached.

NB! Bidders will not be afforded a chance to rectify by either completing the tender document or submitting outstanding mandatory documents.

VERIFICATION OF DOCUMENTS AND INFORMATION.

- ✓ Please note that by submitting this tender document, you are agreeing to the verification process of your supporting documents by the Rustenburg Local Municipality.
- ✓ Tax compliance status will be verified using CSD number. (For a bidder to be considered for final award, their status must reflect "tax compliance" before final award is made)
- ✓ CIDB Grading will be verified.
- ✓ Sworn Affidavits will be accepted only if its originals submitted.

INSTRUCTION ON THE SUBMISSION OF TENDER DOCUMENTS

- ✓ A tender document must be in a sealed packaging that has the bid number and bid description on the outside. Both the bid number and the bid description must be on the packaging for the document to be acceptable.
- ✓ If the bid number and description are not clearly marked on the packaging, the bid will not be accepted.
- ✓ The tender document must be in the tender box before the specified closing time and date.
- ✓ .Submissions made after or during the tender opening will not be considered late and will not be accepted.



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ADDITIONAL TENDERING CONDITIONS

1. The document must be completed in full as per the guide provided under administrative evaluation - document completion.
2. All mandatory documents must be attached as per the guide under administrative evaluation - attachment of mandatory documents.
3. Bidders must be registered on CSD.
4. Only black pen ink must be used for completing the tender document.
5. Documents must not be completed electronically.
6. Electronic signatures are not allowed.
7. Bidders are not allowed to use correction pens. In a case where a wrong answer is ticked, a straight line must be made across the wrong answer, then initial next to the mistake and a correct answer must be ticked or provided in writing.
8. Bidders must submit both a hard copy document and an electronic tender document in the form of a clearly marked USB. (Bidders will be disqualified for not submitting a USB with scanned bid documentation)
9. Rustenburg Local Municipality will not accept documents which are not in envelopes and clearly marked with the bid number and description.

NB! FAILURE TO ADHERE TO THE ABOVE INSTRUCTIONS WILL RENDER THE TENDER INVALID AND RESULT IN DISQUALIFICATION

Contents

Number	Heading
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The Tender

Part T1: Tendering procedures

a)	T	b)	Tender Notice and Invitation to Tender
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1.1

T1.2	Tender Data
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Part T2: Returnable documents

T2.1	List of Returnable Documents
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T2.2	c)	Returnable Schedules
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The Contract

Part C1: Agreement and Contract Data

C1.1	Form of Offer and Acceptance
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C1.2	Contract Data
------	---------------

C1.3	Form of Guarantee
------	-------------------

C1.4	Occupational Health and Safety Agreement
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Volume 3 – Book 2 of 3

Part C2: Pricing data

C2.1	Pricing Instructions
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C2.2	Bills of Quantities
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Volume 3 – Book 3 of 3

Part C3: Scope of Work

C3	Scope of Work
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Part C4: Site information

C4	Site Information
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Employer

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Witness 1

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Witness 2

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Contractor

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Witness 1

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Witness 2



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T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annexure to this Tender Data.

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

Clause number

Tender Data

F.1.1

The employer

The employer is The Rustenburg Local Municipality.

F.1.3.2

Replace the contents of the clause with the following:

The Standard Conditions of Tender, the Tender Data, List of Returnable Documents and Returnable Schedules which are required for the tender evaluation purposes, shall form part of the Contract arising from the invitation to tender.

F.2.1

Eligibility

Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 6CE class of construction work, are eligible to submit tenders.

Joint ventures are eligible to submit tenders provided that:

1. Every member of the joint venture is registered with the CIDB;
2. The lead partner has a contractor grading designation in the 6CE or higher; and the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 6CE or higher class of construction work.

Tenderers faced with the above scenario and who fail to meet the combined designation grading will not be considered for the tender.

F.2.1.

Eligibility

Only those tenderers who have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit tenders.

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Clause number	Tender Data
F.2.2	Accept that the Employer will not compensate the tenderer for any costs incurred in attending interviews in the office of the employer.
F.2.7	Clarification Meeting There will be no compulsory briefing session.
F.2.10.5	Pricing and tender offer Add the following to the clause: A digital copy of the Bill of Quantities can be obtained from E-Tender portal
F.2.11	Alterations to documents Add the following to the clause: To correct errors made, draw a line through the incorrect entry and write the correct entry above in black ink and place the full signatures of the authorised signatories next to the correct entry.

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Clause number

Tender Data

F.2.12

Alternative tender offers

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

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

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

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

Failure to properly comply with this clause, thereby preventing the Employer and/or the Engineer to properly assess the full implications of the alternative tender, is likely to disqualify the alternative offered from further consideration.

No submission by the Contractor after award for additional payment or time for completion of Works relating to the alternative offer will be considered, the tendered rates submitted shall be considered to reflect the full and final cost implications of the alternative offer.

F.2.13

Submitting a tender offer

Add the following to the clause:

No claim will be entertained for faults in the tender price resulting from any discrepancies, omissions or indistinct figures.

F.2.13.2

Replace the contents of the clause with the following:

Return all volumes of the tender document to the Employer after completion of the relevant sections of each volume in their entirety by writing in black ink.

All volumes are to be left intact in its original format and no pages shall be removed or re-arranged.

F.2.13.3

Parts of each tender offer communicated on paper shall be submitted as an original.

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Clause number

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F.2.13.4

Add the following to the clause:
Only authorised signatories may sign the original tender offer where required in terms of 2.13.3.

F.2.13.5
F2.15.1

The employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:

Physical address and Location of tender box: Foyer of Missionary Mpheni House,
c/o Beyers Naude and Nelson Mandela Drive,
Rustenburg.

Identification details: BID NO: RLM/OMM/0109/2023/24 - APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT) and the closing date and time of the tender.

Postal address: P O Box 550, Rustenburg, 0300

The name and address of the tenderer shall be entered on the back of the envelope.

F.2.13.9

Add the following to the clause:
Accept that all conditions, which are printed or written upon any stationary used by the Tenderer for the purpose of or in connection with the submission of a tender offer for this Contract, which are in conflict with the conditions laid down in this document shall be waived, renounced and abandoned.

F.2.14

Information and data to be completed in all respects.

Add the following to the clause:
The Tenderer is required to enter information in the following sections of the document:

- Section T2.2..... : Returnable Schedules Section
- Section C1.1 : Form of Offer and Acceptance Section
- Section C1.2 : Contract Data (Part 2) Section
- Section C2.2 : Bill of Quantities

The above sections shall be signed by the Tenderer (and witnesses where required). Individual pages should only be initialled by the successful Tenderer and by the witnesses after acceptance by the Employer of the Tender Offer.

The Tenderer shall complete and sign the Form of Offer prior to the submission of a Tender Offer.

The Schedule of Deviations (if applicable) shall be signed by the successful Tenderer after acceptance by the Employer of the Tender Offer.

Accept that the Employer shall in the evaluation of tender offers take due account of the Tenderer's past performance in the execution of similar engineering works of comparable magnitude, and the degree to which he possesses the necessary technical, financial and other resources to enable him to

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Clause number

Tender Data

complete the Works successfully within the contract period. Satisfy the Employer and the Engineer as to his ability to perform and complete the Works timeously, safely and with satisfactory quality, and furnish details in section T2.2.2 of contracts of a similar nature and magnitude which they have successfully executed in the past. Accept that the Employer is restricted in accordance with clause 4.(4) of the Construction Regulations 2003, to only appoint a contractor whom he is satisfied has the necessary competencies and resources to carry out the work safely. Accept that submitting inferior and inadequate information relating to health and safety shall be regarded as justifiable and compelling reasons not to accept the Tender Offer of the Tenderer scoring the highest number of tender evaluation points.

F.2.15.1

Closing Time

The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

F.2.15.2

Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.

F.2.16.1

Tender offer validity

The tender offer validity period is 90 days.

F.2.16.1

Add the following to the clause:

If the tender validity expires on a Saturday, Sunday or public holiday, the tender shall remain valid and open for acceptance until the closure of business on the following working day.

F.2.18

Provide other material

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

Add the following to the clause:

Accept that if requested, the Tenderer shall within 14 days of the date upon which he is requested to do so, submit a full report from his banker as to his financial standing. The Employer may, in its discretion, and subject to the provisions of Section 4(1)(d) of the State Tender Board Act 86 of 1968, condone any failure to comply with the foregoing condition.

F.2.20.

Accept that the Employer, reserves the right to approach the Tenderer's banker or guarantor(s) as indicated in the tender document, or the bankers of each of the individual members of any joint venture that is constituted for purposes of ascertaining the financial strength of the Tenderer or of the individual member of such venture; and affirmation of the letter of intent referred to below.

The tenderer is required to submit with his tender a letter of intent from an approved financial institution undertaking to provide the Construction Guarantee in the format included in Part C1.3 of this procurement document; and such guarantee will be put in place upon appointment.

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F.2.22

Return of other tender documents

Return all retained tender documents prior to the closing time for the submission of Tender Offers.

F.2.23

Certificates

The tenderer is required to submit with his tender:

1. a Certificate of Contractor Registration issued by the CIDB
2. a copy of the CSD summary report
3. All documents stated as mandatory documents

Where a tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.

F.3.4

Opening of tender submissions

Tenders will be opened immediately after the closing time for tender

F.3.5

Two-envelope system

A two-envelope procedure will not be followed.

F.3.11

Evaluation of Tenders

The procedure for the evaluation of responsive tenders is Method 1 (Functionality, 80/20 Preferential Point System).

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POINTS AWARDED FOR FUNCTIONALITY

For a bidder to qualify it is a requirement that a Professional Service Provider score a minimum of 70 out of a maximum of 100 points for functionality to be evaluated further.

Rustenburg Local Municipality reserves the right to verify and confirm any information submitted for Functionality.

Values: 1 = Poor; 3= Good; 5 = Excellent

ITEM	CRITERIA	WEIGHT	VALUE	SCORE	VERIFICATION METHOD
Company Experience					
1.1	Project size Wastewater Treatment Works or Sanitation projects (Please attach appointment letters and completion letters per project on client letterhead)	50	Attach appointment completion certificates. Please note that amounts will not be accumulative		
	R1- R6 million (Value = 1)				
	R7 – R 12 million (Value = 3)				
	R13 million and above (Value= 5)				
Key Personnel : Please attach CV with qualifications.					
2.1	Project Manager	10	A minimum qualification of NQF level 6 (Degree or BTech) in Mechanical Engineering (Attach a comprehensive CV with Wastewater Treatment Works or Sanitation projects experience)		
	Level 6 (Value = 01)				
	Level 7 (Value 3)				
	Level 8 and above (Value 5)				
2.2	Site agent	5	A minimum qualification of NQF level 5 in Civil Eng (Attach a comprehensive CV with Wastewater Treatment Works or Sanitation projects experience)		
	Level 5 (Value = 01)				
	Level 6 (Value 3)				
	Level 7 and above (Value 5)				

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ITEM	CRITERIA	WEIGHT	VALUE	VERIFICATION METHOD
2.3 Health and Safety Officer	5			Minimum qualification of NQF level 5 in Safety Management or SAMTRAC or higher (Attach a comprehensive CV with clear relevant Wastewater Treatment Works or Sanitation projects experience)
	Level 5 (Value = 01)			
	Level 6 (Value 3)			
	Level 7 and above (Value 5)			
Key personnel: Please attach CV with indicating years of experience in construction projects.				
3.1 Project Manager	10			A minimum qualification of NQF level 6 (Degree or BTech) in Mechanical Engineering (Attach a comprehensive CV with Wastewater Treatment Works or Sanitation projects experience)
	1-3 years (Value = 1)			
	4-6 years (Value = 3)			
	7 years or more (Value = 5)			
3.2 Site Agent	05			A minimum qualification of NQF level 5 in Civil Eng (Attach a comprehensive CV with Wastewater Treatment Works or Sanitation projects experience)
	1-3 years (Value = 1)			
	4-6 years (Value = 3)			
	7 years or more (Value = 5)			
3.3 Health and Safety Officer	05			Minimum qualification of NQF level 5 in Safety Management or SAMTRAC or higher (Attach a comprehensive CV with clear relevant Wastewater Treatment Works or Sanitation projects experience)
	1-3 years (Value = 1)			
	4-6 years (Value = 3)			
	7 years or more			

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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	(Value = 5)					
1.	NQF Level 5 Accreditation (Manage Labour – Intensive Construction Projects) Any of the above-mentioned personnel Contracts Manager or Site Agent)	05				Accreditation (Manage Labour – Intensive Construction Projects) Any of the above-mentioned personnel Contracts Manager or Site Agent)
	NQF Level 5 - 5					
	Any NQF Level less than 5 or no attachment - 0					
2.	Bank Rating	05				Attach bank confirmation letter on the Banks letterhead
	R0 – R433 000 – Value = 01)					
	R434 0000 – R1,32 million (Value =03)					
	R1,33 million and above (Value = 05)					
TOTAL		100				

Calculate the points scored according to the following formula:

$$Ps = \frac{[So]}{Ms} \times Ap$$

Where:

Ps = percentage scored for functionality by the bid under consideration

So = total score of bids under consideration, i.e. weight X value = score

Ms = maximum possible score = 500

Ap = percentage allocated

$$\text{Total percentage scored by the bidder on functionality: } Ps = \frac{\quad \quad \quad}{500} \times 100 =$$

NB: No tender will be regarded as an acceptable tender/responsive if it fails to achieve the minimum qualifying score for functionality of 70 out of a maximum of 100 points.

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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EVALUATION ON TENDER PRICE

The following formula will be used to calculate the points for price.

$$Ps = x \left[1 - \frac{Pt - Pmin}{Pmin} \right]$$

where:

Ps = points scored for comparative price of tender under consideration

Pt = comparative price of tender under consideration

Pmin = comparative price of lowest acceptable tender

X = points assigned to price

NB: The lowest acceptable price will be based on the attached market analysis.

The following specific goals will be utilized for awarding of tenders. They can be applicable individually or wholly in awarding of points. The points will be allocated on merit per tender in line with the specification.

Ownership	Points	Means of Verification
Rustenburg Jurisdiction	4	Proof of address as envisaged on the list of mandatory documents and a full Central Supplier Database full report will be used for verification and allocation of points.
Rural /Township Businesses	4	
Black People	2	
Persons with Disability	2	
Youth	4	
Women	2	

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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Annexure F: Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement (as amended in Board Notice 86 of 2010 (May 2010))

F.1 GENERAL

F.1.1 Actions

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

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

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

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



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

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

- a) **conflict of interest** means any situation in which:
 - i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
- b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body
- f) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.1.4 Communication and employer's agent

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

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

F.1.5.1 The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The



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employer shall not accept or incur any liability to a tenderer for such cancellation and rejection, but will give written reasons for such action upon written request to do so.

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

F.1.6 Procurement procedures

F.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

F.1.6.2.4 The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13 after tenderers have been requested to submit their best and final offer.



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F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2 Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 TENDERER'S OBLIGATIONS

F.2.1 Eligibility

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

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

F.2.2 Cost of tendering

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

F.2.3 Check documents



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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meetings are stated in the tender data.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

- F.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.
- F.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.
- F.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data
- F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.



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F.2.11 Alterations to documents

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

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

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

F.2.13 Submitting a tender offer

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

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

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

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

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

F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside



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the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

- F.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.
- F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
- F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

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

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

F.2.15 Closing time

- F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.
- F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity

- F.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.
- F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.
- F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.
- F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".



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F.2.17 Clarification of tender offer after submission

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

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

F.2.18 Provide other material

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

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

F.3 THE EMPLOYER'S UNDERTAKINGS

F.3.1 Respond to requests from the tenderer



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- F.3.1.1 Unless otherwise stated in the tender data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.
- F.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:
- a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
 - b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
 - c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2 Issue Addenda

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

F.3.3 Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

F.3.4 Opening of tender submissions

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



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

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

F.3.5 Two-envelope system

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

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

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

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

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and



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c) is responsive to the other requirements of the tender documents.

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

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

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

F.3.9 Arithmetical errors, omissions and discrepancies

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

F.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

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

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

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



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- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

F.3.10 Clarification of tender offers

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

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

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

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

F.3.11.3 Method 2: Financial offer and preference

In the case of a financial offer and preferences:



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

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

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
 N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

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

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

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

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



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

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

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

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

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

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

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

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

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

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

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.



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

F.3.11.6 Decimal places

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

F.3.11.7 Scoring Financial Offers

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

$$N_{FO} = W_1 + A$$

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

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

Formula	Comparison aimed at achieving	Option 1*	Option 2*
1	Highest price or discount	$A = \left(1 + \frac{(P - P_m)}{P_m} \right)$	$A = P / P_m$
2	Lowest price or percentage commission / fee	$A = \left(1 - \frac{(P - P_m)}{P_m} \right)$	$A = P_m / P$

* P_m is the comparative offer of the most favourable comparative offer.

P is the comparative offer of the tender offer under consideration

F.3.11.8 Scoring preferences

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



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Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring quality

Score each of the criteria and sub-criteria for quality in accordance with the provisions of the Tender Data.

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

$$N_Q = W_2 \times S_0 / M_S$$

where: S_0 is the score for quality allocated to the submission under consideration;
 M_S is the maximum possible score for quality in respect of a submission; and
 W_2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

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

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

F.3.14 Prepare contract documents



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- F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:
- addenda issued during the tender period,
 - inclusion of some of the returnable documents,
 - other revisions agreed between the employer and the successful tenderer, and
- F.3.14.1 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

- F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.
- F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify all other tenderers that their offers have not been accepted.

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

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

T2.1 additional Returnable Documents

- Tenderers are required to submit the following with their tenders.
 - Certified copy of a Workmen's Compensation Certificate, Act 4 of 2002,
 - Certified copy of Unemployment Insurance Certificate, Act 4 of 2002,
 - Curriculum vitae of the person who prepares the Contractor's Health and Safety Plan.



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- (d) Curriculum vitae of the Health and Safety Officer the successful tenderer intends appointing in accordance with the Occupational Health and Safety Act (Act 85 of 1993).
- (e) Curriculum Vitae of all supervisory staff.

T2.2.1: Record of Addenda to tender documents

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

	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Attach additional pages if more space is required.

Signed _____

Date _____

Name _____

Position _____

Tenderer _____

T2.2.2: Compulsory Enterprise Questionnaire

The following particulars must be furnished. In the case of a joint venture, **separate** enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number

Close corporation number

Tax reference number

Section 6: Record of service of the state

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

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council
<input type="checkbox"/> a member of any provincial legislature
<input type="checkbox"/> a member of the National Assembly or the National Council of Province
<input type="checkbox"/> a member of the board of directors of any municipal entity
<input type="checkbox"/> an official of any municipality or municipal entity | <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
<input type="checkbox"/> a member of an accounting authority of any national or provincial public entity
<input type="checkbox"/> an employee of Parliament or a provincial legislature |
|--|---|

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

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

*insert separate page if necessary

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

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

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> an employee of any provincial department, national or provincial |
|--|---|

- a member of any provincial legislature
- a member of the National Assembly or the National Council of Province
- a member of the board of directors of any municipal entity
- an official of any municipality or municipal entity

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

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

*insert separate page if necessary

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

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

Enterprise
name _____

T2.2.3: 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 authorise Mr/Ms
, authorised 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.

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
<i>Lead partner</i>		Signature. Name Designation
		Signature. Name Designation
		Signature. Name Designation
		Signature. Name Designation

T2.2.4: Schedule of Proposed Subcontractors

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

If we are awarded a contract we agree that this notification does not change the requirement for us to submit the names of proposed 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 contracted to construct a house are registered as home builders with the National Home Builders Registration Council.

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

Signed _____

Date _____

Name _____

Position _____

Tenderer _____

T2.2.5: Schedule of Plant and Equipment

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

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

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

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

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed

Date

Name

Position

Tenderer _____

T2.2.6: Schedule of the Tenderer's Experience

The following is a statement of similar work successfully executed / in progress by myself/ourselves in the last 5 years:

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

Signed

Date

Name

Position

Tenderer _____

T2.2.7: FINANCIAL REFERENCES

(a) FINANCIAL STATEMENTS

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report for consideration by the Employer.

(b) DETAILS OF COMPANY'S BANK

I/We hereby authorise the Employer/Engineer to approach all or any of the following banks for a reference:

DESCRIPTION OF BANK DETAIL	BANK DETAIL APPLICABLE TO COMPANY HEAD OFFICE	BANK DETAIL APPLICABLE TO THE SITE OF THE WORKS
Name of bank		
Branch name		
Branch code		
Street address		
Postal address		
Name of manager		
Telephone number	()	()
Fax number	()	()
Account number		

Signed _____

Date _____

Name _____

Position _____

Tenderer _____

T2.2.8: Proposed amendments and qualifications

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 F.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the employer's handling of material deviations and qualifications.

Page	Clause or item	Proposal

Signed _____

Date _____

Name _____

Position _____

Tenderer _____

T2.2.9: Supervisory and Safety Personnel

PREVIOUS EXPERIENCE ON WORKS OF A SIMILAR NATURE DURING THE LAST FIVE YEARS

Name	% Time on Site	Position (Current)	Service (Years)	Name of Project And year executed	Value of Works	Position Occupied
Contracts Manager						
Contractor's Site Agent	100%					
Contractor's Foremen						
Construction Health and Safety Officer	100%					
Contractors Surveyor						

Tenderers shall indicate the percentage of working time these persons will be engaged on site. Tenderers are required to provide copies of curriculum vitas of all supervisory and safety personnel.

Signed Date

Name Position

Tenderer

Employer
 Witness 1
 Witness 2
 Contractor
 Witness 1
 Witness 2

T2.2.10: Labour Utilisation

Labour Categories - Definitions

NOTE: These definitions serve as a guideline to complete the following table and will in no respect alter the Project Specifications or Standardised Specifications

1. General Foreman / Foreman

An employee who gives out work to and directly co-ordinates and supervises employees. His duties encompass any one or more of the following activities:

- a) Supervision;
- b) Maintaining discipline;
- c) Ensuring safety on the workplace;
- d) Being responsible to the Contractor for efficiency and production for his portion of the works; and
- e) Performing skilled work, whether in an instructional capacity or otherwise.

2. Charge hand

An employee engaged in any one or more of the following activities:

- a) Being primarily employed in a supervisory capacity, but who may also be doing the work of an artisan;
- b) Giving out work to other employees under his control and supervision;
- c) Ensuring safety on the workplace;
- d) Maintaining discipline; and
- e) Being directly responsible to a general foreman or foreman or the Contractor or the Contractor's representative for efficiency and production for his portion of the works.

3. Artisan

An employee who has successfully completed all prescribed courses at a practical institutional training centre for a particular trade and who has successfully completed the on-site period of training as prescribed and who has successfully passed the prescribed trade tests.

Tender

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

4. Team Leader

An employee engaged in any one or more of the following activities:

- a) Being employed in a supervisory capacity, but who may also be doing the work of a skilled person;
- b) Giving out work to other employees under his control and supervision;
- c) Maintaining discipline;
- d) Being directly responsible to a Charge hand or a foreman or a general foreman or the employer's authorised representative for efficiency and production for his portion of the works.

5. Skilled Employee

An employee engaged in an ancillary trade or an assistant artisan.

6. Semi-Skilled Employee

An employee with any specified skills, an apprentice or a trainee-artisan.

7. Unskilled Employee

An employee engaged on any task or operation not specified above.

8. Imported Employee

Personnel permanently employed by Contractor.

9. Local Employee

Temporary workforce employed through Labour Desk.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

MAN DAYS

Categories	a) No. of Man Days		d) HDI (Y/N)
	b) Imported	c) Local	
1. Contracts Manager			
2. Site Agent			
3. Foreman/Supervisors (specify type)			
3.1 _____			
3.2 _____			
3.3 _____			
4. Safety Inspectors (specify type)			
4.1 _____			
4.2 _____			
5. Charge hands			
6. Artisans			
7. Operators/Drivers			
8. Clerks/ Storeman			

<input style="width: 100%; height: 30px;" type="text"/>					
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

Categories	a) No. of Man Days		d) HDI (Y/N)
	b) Imported	c) Local	
9. Team Leader			
10. Skilled Labour			
11. Semi-skilled Labour			
12. Unskilled Labour			

Signed _____ Date _____
 Name _____ Position _____
 Tenderer _____

 Employer Witness 1 Witness 2 Contractor Witness 1 Witness 2

**T2.2.11: OCCUPATIONAL HEALTH AND SAFETY ACT:
STATEMENT BY TENDERING ENTITY**

I, _____ duly authorised

to represent _____ (company name)

in my capacity as _____ hereby confirm that I accept full and exclusive responsibility for compliance by myself and all persons who perform work for me with the provisions of the Occupational Health and Safety Act, No. 85 of 1993 (as amended) and all regulations promulgated from time to time, whilst performing work on _____

I confirm that all employees who perform work on the site shall be properly trained to do this in a manner which is safe and without risk to health and safety to themselves and others in the vicinity and undertake to have our activities adequately supervised in the interest of health and safety.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

--

Employer

--

Witness 1

--

Witness 2

--

Contractor

--

Witness 1

--

Witness 2

T2.2.12: Site Inspection Certificate

As required by Clause 2.7 of the Tender Data, I/we certify that I/we have visited the site of the Works and attended the site visit and clarification meeting on the date certified below.

I/we further certify that I am / we are satisfied with the description of the Work and the explanations given by the Engineer at the site visit and clarification meeting.

Signature of Tenderer

Date

Site Visit

This will certify that _____

representing _____

attended a Site Inspection for this Contract on _____ 20_____

_____(signed)

For the Engineer

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

FORM T2.2.2: AUTHORITY OF SIGNATORY

With reference to Clause 2.13.4 of the Tender Data, I/we herewith certify that this tender is submitted by: (Mark applicable block)

a company, and attach hereto a certified copy of the required resolution of the Board of directors

a partnership, and attach hereto a certified copy of the required resolution by all partners

a close corporation, and attach hereto a certified copy of the required resolution of the Board of Officials

a one-man business, and attach hereto certified proof that I am the sole owner of the business submitting a tender

a joint venture, and attach hereto

- a) an notarially certified copy of the original document under which the joint venture was constituted; and
- b) certified authorised by the participating members of the undersigned to submit tenders and conclude contracts on behalf of the joint venture

SIGNED ON BEHALF OF TENDERER:

PLEASE NOTE:

Failure to complete all blank spaces on this form or attend to other details mentioned therein will render the Bid liable to rejection.

The signatory shall confirm his / her authority thereto by attaching on the tendering company's letterhead a duly signed and dated copy of the relevant resolution of the board of directors / partners.

<input type="text"/>					
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE RUSTENBURG LOCAL MUNICIPALITY					
BID NUMBER:	RLM/OMM/0109/2023/24	CLOSING DATE:	31 MAY 2024	CLOSING TIME:	09H00
DESCRIPTION	APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT)				

THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).

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

RUSTENBURG LOCAL MUNICIPALITY

MISSIONARY MPHENI HOUSE

CNR BEYERS NAUDE AND NELSON MANDELA DRIVE, RUSTENBURG

SUPPLIER INFORMATION

NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER PART B:3]
--	--	---	---

TOTAL NUMBER OF ITEMS OFFERED		TOTAL BID PRICE	R
SIGNATURE OF BIDDER	.....	DATE	

CAPACITY UNDER WHICH THIS BID IS SIGNED

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	SCM	CONTACT PERSON	Ms. P. Molefe
CONTACT PERSON	Ms. L. Pitso	TELEPHONE NUMBER	014-590-3098
TELEPHONE NUMBER	014 590 3630	E-MAIL ADDRESS	molefep@rustenburg.gov.za
E-MAIL ADDRESS	lpitso@rustenburg.gov.za		

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

PART B

TERMS AND CONDITIONS FOR BIDDING

3. 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, COMPLETED WITH A BLACK PEN
1.3.	THIS BID IS SUBJECT TO THE RLM SUPPLY CHAIN MANAGEMENT POLICY, PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
4. TAX COMPLIANCE REQUIREMENTS	
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3	APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.
2.4	FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
2.5	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.6	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.7	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
5. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS: (BIDDER MAY NOT BE DISQUALIFIED ON THIS PART IF INDICATED THAT THEY ARE NOT FOREIGN BASED SUPPLIER)	
3.1.	IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? <input type="checkbox"/> YES <input type="checkbox"/> NO
3.2.	DOES THE ENTITY HAVE A BRANCH IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO
3.3.	DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO
3.4.	DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO
3.5.	IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <input type="checkbox"/> YES <input type="checkbox"/> NO
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.	

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

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

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Employer

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Witness 1

--

Witness 2

--

Contractor

--

Witness 1

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Witness 2

MBD 4: DECLARATION OF INTEREST

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

1. Any legal person, including persons employed by the state¹, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-

- the bidder is employed by the state; and/or
- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

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

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

2.2. Identity Number:

2.3. Position occupied in the Company (director, trustee, hareholder²):

2.4. Company Registration Number:

2.5. Tax Reference Number:

2.6. VAT Registration Number:.....

2.7. Personal Reference Tax Number.....

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

¹“State” means –

- (a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (b) any municipality or municipal entity;
- (c) provincial legislature;
- (d) national Assembly or the national Council of provinces; or
- (e) Parliament.

²“Shareholder” means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.8. Are you presently in the service of the state?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

2.8.1. If yes, furnish particulars.

.....

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

(a) a member of –

- (i) any municipal council;
- (ii) any provincial legislature; or
- (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity; (c) an official of any municipality or municipal entity;

(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);

(e) a member of the accounting authority of any national or provincial public entity; or

(f) an employee of Parliament or a provincial legislature.

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

2.9. Have you been in the service of the state for the past twelve months?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

2.9.1. If yes, furnish particulars.....

.....

2.10. Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

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

.....

2.11. Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

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Employer

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Witness 1

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Witness 2

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Contractor

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Witness 1

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Witness 2

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

2.12. Are any of the company's directors, trustees, managers, principal shareholders or stakeholders in service of the state?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

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

.....

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

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

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

.....

2.14. Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract.

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

2.14.1. If _____ yes, _____ furnish particulars.....

.....

<input type="text"/>

Employer

<input type="text"/>

Witness 1

<input type="text"/>

Witness 2

<input type="text"/>

Contractor

<input type="text"/>

Witness 1

<input type="text"/>

Witness 2

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

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

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

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

.....
.....

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

*YES NO

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

2.2 If yes, provide particulars.

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

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

*YES NO

3.1 If yes, furnish particulars

.....
.....

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

*YES	NO
------	----

4.1 If yes, furnish particulars

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)

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

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

.....
Name/s and Surname of Bidder

.....
Signature

.....
Position in the Firm/Company

.....**2024**
Date

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Employer

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Witness 1

--

Witness 2

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Contractor

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Witness 1

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Witness 2

MBD 6.1 PREFERENCE CLAIMED IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022

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

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

1. GENERAL CONDITIONS

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

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

1.2 **To be completed by the organ of state**

- a) The applicable preference point system for this tender is the 80/20 preference point system.
- b) The 80/20 will be applicable in this tender.

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

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

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

2. DEFINITIONS

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

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

Where

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

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

3.2.1. POINTS AWARDED FOR PRICE

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

$$\begin{array}{ccc}
 \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\
 \\
 Ps = 80 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right) & \text{or} & Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)
 \end{array}$$

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

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

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.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

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

Note to tenderers: "The tenderer must indicate how they claim points for each preference point system. Points claimed will be verified by RLM using the CSD Report, and preference points will be allocated accordingly. Bidders who fail to complete the table below will NOT be disqualified BUT will not be allocated preference points.

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system)	Number of points claimed (80/20 system) (To be completed by the tenderer)	Means of Verification
Rustenburg Jurisdiction	4		Latest (not older than three months) Municipal Account/Traditional Council letter
Rural /Township Businesses	4		Latest (not older than three months) Municipal Account/Traditional Council letter
Black People	2		Valid Sworn Affidavit
Persons with Disability	2		Disability verification letter
Youth	4		Certified ID copy
Women	2		Certified ID copy
SMME's	2		Company registration
Total	20		

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]

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

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:

.....

.....

.....

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

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

Item	Question	Yes	No
4.1	<p>Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?</p> <p>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p>The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	<p>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?</p> <p>The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	<p>Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
Item	Question	Yes	No
4.4	<p>Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	<p>Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

CERTIFICATION

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidde

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

MBD 9: CERTIFICATE OF INDEPENDENT BID DETERMINATION

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

- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4. This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

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

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

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

I, the undersigned, in submitting the accompanying bid: **RLM/OMM/0109/2023/24 - APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT**

(Bid Number and Description)

in response to the invitation for the bid made by:

RUSTENBURG LOCAL MUNICIPALITY

(Name of Municipality / Municipal Entity)

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

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

I certify, on behalf of: _____ that:

(Name of Bidder): Bidders are required to fill in the name of their company in the space provided above.

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

SECTION 38: DECLARATION FORM

Having examined the BID and the general conditions thereto, I/we hereby certify that the bid price in the bid schedules and the preference points claimed are correct.

I/We furthermore certify that I/we/the Company comply/complies with the issues around Section 38 of the Supply Chain Management Policy inter alia:

IF ALL IS IN PLACE IN RESPECT OF THE CONTRACTUAL ISSUES LISTED IN THE TABLE BELOW; THE ANSWER SHOULD BE YES. ATTACH SUPPORTING INFORMATION IF ANY OF THE ANSWERS IS NO.

Note that the Municipality's Procurement Section will verify the statements.

I/we certify the following:

No.	CONTRACTUAL ISSUES	YES	NO
1.	In terms of Section 38 (1) (c) that the Bidder or any of the Directors is not listed as a person prohibited from doing business with the Public Sector		
2.	In terms of Section 38 (1)(d) (i) that the Bidder or any of the Directors does not owe rates and taxes or Municipal service charges to any Municipality that is in any arrears for more than three (3) months. Copies of the latest Municipal service charges statement of the Bidder and the Directors must be attached to the tender/bid document		
3.	In terms of Section 38 (1) (d) (ii) that the Bidder or any of the Directors has not failed to perform satisfactorily on a previous/previous contract/s with the Municipality or any organ of state		
4.	In terms of Section 38 (i) (9) that the Bidder or any of the Directors has not been convicted for fraud or corruption during the past five (5) years		
5.	In terms of Section 38 (i) (9) (iv) that the Bidder or any of the Directors has not been listed in the Register Of Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act, (Act No. 12 of 2004)		

.....
SIGNATURE OF BIDDER

.....2024.
DATE

.....
FULL NAME AND SURNAME OF BIDDER IN BLOCK LETTERS

COMPANY NAME:

PHYSICAL ADDRESS:

TELEPHONE NUMBER:

EMAIL ADDRESS:

WITNESS 1: WITNESS 2:

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

CONTRACT

PART 1 (OF 4): AGREEMENTS AND CONTRACT DATA

- C1.1 Form of Offer and Acceptance
- C1.2 Contract Data
- C1.3 Deed of Guarantee (Pro Forma)
- C1.4 Adjudicator's Agreement (if applicable)

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

C1.1 Form of Offer and Acceptance

Offer

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

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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 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)

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 Date

Name

Capacity

for the tenderer
(Name and
address of
organization)

Name and
signature
of witness

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

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 Parts 1 to 4 above.

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

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfill 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.

Signature Date

Name

Capacity

**for the
Employer** Rustenburg Local Municipality
Missionary Mpheni House
c/o Beyers Naude & Nelson Mandela Drive
Rustenburg

Name and signature of witness Date

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Schedule of Deviations

Notes :

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender;
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here;
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here;
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject

Details

.....

.....

.....

2 Subject

Details

.....

.....

.....

3 Subject

Details

.....

.....

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4 Subject

Details

.....

.....

.....

5 Subject

Details

.....

.....

By the duly authorised 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 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.

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

for the tenderer

Signature Date

Name

Capacity

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

Name and signature of witness
.....

for the Employer

Signature Date

Name

Capacity

Rustenburg Local Municipality
Missionary Mpheni House
c/o Beyers Naude & Nelson Mandela Drive
Rustenburg

Name and signature of witness Date

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT C1.2 Contract Data

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works (2015) 3rd Edition, published by the South African Institution of Civil Engineering, is applicable to this Contract.

The General Conditions of Contract are not bound into this document but are available at the Contractor's expense. Each party to the contract shall purchase its own copy of the GC 2015, available from
 South African Institution of Civil Engineering
 Private Bag X200
 Halfway House, 1685
 South Africa
 Tel: 27(0) 11 805 5947 /48 /53

Each item of data below is cross-referenced to the clause in the conditions of contract to which it applies.

In terms of clause 1.1.1.8 of the General Conditions of Contract for Construction Works (2015) 3rd Edition, published by the South African Institution of Civil Engineering), the following Contract Data apply to this Contract.

The Contract Data consists of two parts. Part 1 contains information provided by the Employer, while Part 2 contains information to be provided by the Contractor.

Part 1: Data Provided by the Employer

Clause	Contract Data
1.1.1.5	Replace the contents of Clause 1.1.1.5 with the following: The "Commencement Date" means the date on which the contractor receives a written instruction from the Employer to commence with the Works. The instruction to commence with the works will not be issued later than 28 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.
1.1.1.13	The Defects Liability Period for the Works shall be 365 days.
1.1.1.14	Add the following to the end of this definition: This clause shall apply <i>mutatis mutandis</i> to any portion or phase of the Works that may be described in the Scope of Works or in the Contract Data, or agreed subsequently between the Contractor and the Employer, and committed to writing. The time for achieving practical completion 10 Months
1.1.1.15	The Employer is Rustenburg Local Municipality.
1.1.1.16	The Engineer means any Director, Associate or Professional Engineer appointed generally or specifically by the management of the Employer to fulfil the functions of the Engineer in terms of the Conditions of Contract.
1.1.1.26	The pricing strategy is Re-measurement Contract.
1.2.1	Add the following to the clause: 1.2.1.3 Sent by facsimile, electronic or any like communication irrespective of it being during office

THE CONTRACT
Part C1: Agreement and Contract Data

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C1.2
Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT

Clause	Contract Data
	<p>hours or otherwise.</p> <p>1.2.1.4 Posted to the Contractor's address and delivered by the postal authorities.</p> <p>1.2.1.5 Delivered by a courier service and signed for by the recipient or his representative.</p>
1.2.1.2	<p>The address of the Employer is:</p> <p>Rustenburg Local Municipality C/o Beyers Naudé & Nelson Mandela Drive</p> <p>P O Box 550 Rustenburg 0300</p> <p>Tel: +27 (14) 590 3098 Fax: +27 (14) 590 3879</p>
1.3.6	<p>Add the following new Clause:</p> <p>The copyright in all documents, drawings and records (prepared by the Engineer) related in any manner to the Works shall vest in the Employer or the Engineer or both (according to the dictates of the Contract that has been entered into by the Engineer and the Employer for the Works), and the Contractor shall not furnish any information in connection with the Works to any person or organisation without the prior approval of the Employer to this effect.</p>
3.1.3	<p>The Engineer is, in terms of his appointment by the Employer for the design and administration of the Works included in the Contract, required to obtain the specific approval of the Employer for the execution of the following duties:</p> <p>3.1.3.1 The issuing of an order to suspend the progress of the Works, the extra cost resulting from which order is to be borne by the Employer in terms of Clause 5.11 or the effect of which is liable to give rise to a claim by the Contractor for an extension of time under Clause 5.12 of these conditions.</p> <p>3.1.3.2 The issuing of an instruction or order to vary the nature or quantity of the Works in terms of Clause 6.3, the estimated effect of which will be to increase the Contract Price by an amount exceeding R50 000, the evaluation of all variation orders in terms of Clause 6.4 and the adjustment of the sum(s) tendered for General Items in terms of Clause 6.11.</p> <p>3.1.3.3 The approval of any claim submitted by the Contractor in terms of Clause 10.1.</p>
4.1.2	<p>Add the following to the clause:</p> <p>The Contractor shall provide the following to the Engineer for retention by the Employer or his assignee in respect of all works designed by the Contractor:</p> <p>4.1.2.1 a Certificate of Stability of the Works signed by a registered Professional Engineer confirming that all such works have been designed in accordance with the appropriate codes of practice.</p> <p>4.1.2.2 proof of registration and of adequate and current professional indemnity insurance cover held by the designer(s).</p> <p>4.1.2.3 design calculations should the Engineer request a copy thereof.</p> <p>4.1.2.4 engineering drawings and workshop details (both signed by the relevant professional engineer), in order to allow the Engineer to compare the design with the specified requirements and to</p>

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Part C1: Agreement and Contract Data

Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT

Clause	Contract Data
	<p>record any comments he may have with respect thereto.</p> <p>4.1.2.5 "As-Built" drawings in DXF electronic format after completion of the Works.</p> <p>The Contractor shall be responsible for the design of the Temporary Works.</p>
4.3.3	<p>Add the following new clause:</p> <p>The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2003 promulgated in terms of Section 43 of the Occupational Health and Safety Act (Act No. 85 of 1993).</p> <p>Without limiting the Contractor's obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan.</p> <p>The Contractor shall submit an approved Health and Safety Plan to the Engineer within 14 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.</p>
4.3.4	<p>Add the following new clause:</p> <p>Contractor's liability as mandatory</p> <p>Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2003, for which he is liable as mandatory. By entering into this Contract, it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act.</p>
4.3.5	<p>Add the following new clause:</p> <p>Contractor to notify Employer</p> <p>The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations.</p>
4.3.6	<p>Add the following new clause:</p> <p>Contractor's Designer</p> <p>The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2003 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract.</p>

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT

Clause	Contract Data
4.3.7	Add the following new clause: The Ministerial Determination 4, Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No 949 of 22 October 2010, as appended to these Contract Data as Annexure A, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.
4.10.3	Add the following new clause: The Contractor shall use local labour in accordance with the requirements contained within the Scope of Work.
5.3.1	Add the following: The documentation required before commencement with Works Execution are: <ul style="list-style-type: none"> • Health and Safety Plan (Refer to Clause 4.3) • Initial Programme (Refer to Clause 5.6) • A detailed cash flow forecast (Refer to Clause 5.6.2.6) • Security (Refer to Clause 6.2) • Insurance (Refer to Clause 8.6)
5.3.2	Add the following: The time to submit the documentation required (Refer to Clause 5.3.1) before commencement with Works execution is 14 days.
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but as set out in the Scope or Works and/or Site information.
5.6.1	Add the following to the clause: In this regard the Contractor shall have regard for the phases and sub-phases (if applicable) for the Development, which shall also be the order in which the Permanent Works shall be constructed, unless otherwise agreed between the parties and committed to writing. If phased construction is applicable, the phases and sub-phases will be described in the Specifications and/or will be indicated on the Phasing Plan which forms part of the Drawings.
5.7.1	Delete the last paragraph of the clause and replace with the following: No such instruction by the Engineer to expedite progress shall be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is entitled to additional compensation, and cites the amount of such compensation or the basis upon which it is to be determined.
5.8.1	The non-working days are Sundays. Special non-working days shall be all South African Statutory holidays and the official building holidays (which commences on 16 December and ends on 10 January).

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Part C1: Agreement and Contract Data

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C1.2
Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT

Clause	Contract Data						
5.12.3	<p>Delete the contents of the clause and insert the following:</p> <p>If an extension of time is granted, other than an extension resulting from abnormal rainfall in terms of Clause 5.12.5, the Contractor shall be paid such additional time-related General Items as are appropriate having regard to any other compensation which may already have been granted in respect of the circumstances concerned.</p>						
5.12.5	<p>Add the following new clause:</p> <p>Extension of time due to Abnormal Rainfall</p> <p>Extension of time for completion of the Contract shall be allowed in the event of abnormal rainfall in accordance with the following formula:</p> $V = (N_w - N_n) + (R_w - R_n)/20$ <p>Where:</p> <p>V = Extension of time in calendar days for the calendar month under consideration</p> <p>N_w = Actual number of days during the calendar month under consideration on which a rainfall of 10mm and more is recorded</p> <p>R_w = Actual total rainfall in mm recorded during the calendar month under consideration</p> <p>N_n = Average number of days, derived from rainfall records, on which a rainfall of 10mm and more was recorded during the relevant calendar month as per the data tabulated hereinafter</p> <p>R_n = Average total rainfall in mm for the relevant calendar month, derived from rainfall records, as tabulated hereinafter</p> <p>Where the extension of time due to abnormal rainfall has to be calculated for portion of a calendar month, pro rata values shall be used. Should V be negative for any particular month, and should its absolute value exceed the corresponding value of N_n, then V shall be taken as being equal to minus N_n. The total extension of time to be granted shall be the algebraic sum of all the monthly extensions, provided that if this total is negative then the time for completion shall not be reduced due to subnormal rainfall.</p> <p>Rainfall records for the period of construction shall be taken on Site. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Engineer or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Engineer's Representative. Access to the measuring gauge(s) shall at all times be under the Engineer's control.</p> <p>The rainfall records applicable to this Contract are those recorded at Weather Station Rustenburg ARG 0511/5234. The following values of N_n and R_n shall apply:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Month</th> <th style="text-align: center;">R_n (mm)</th> <th style="text-align: center;">N_n (days)</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </tbody> </table>	Month	R _n (mm)	N _n (days)			
Month	R _n (mm)	N _n (days)					

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Part C1: Agreement and Contract Data

Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT

Clause	Contract Data		
	January	130,1	4
	February	94,2	3
	March	75,1	2
	April	60,3	2
	May	9,8	0
	June	5,9	0
	July	1,6	0
	August	7,2	0
	September	18,8	0
	October	57,5	2
	November	89,4	3
	December	105,8	3
	TOTAL	655,7	19

No adjustment to the total for time-related preliminary and general items will be applicable for any automatic extension of time for completion granted in terms of this clause.

5.13.	<p>Delete the contents of the clause and insert the following:</p> <p>5.13.1 If the Contractor fails by the Due Completion Date to complete the Works, or any specific portion thereof that is identified in the Scope of Works to the extent which entitles him in terms of Clause 5.14.2 to receive a Certificate of Practical Completion for the Works, then the Contractor shall be liable to the Employer for the sum(s) stated below as (a) penalty(ies) for every day which shall elapse between the Due Completion Date for the Works or the specific portion of the Works and the actual Date of Practical Completion of the Works or of the specific portion.</p> <p>The penalty for delay shall be: R3000-00 per calendar day.</p> <p>5.13.2 If before the issue of a Certificate of Practical Completion for the whole of the Works, or for any specific portion thereof that is identified in the Scope of Works, any further part of the Works has been:</p> <p>5.13.2.1 certified as complete in terms of a Certificate of Practical Completion; or</p> <p>5.13.2.2 occupied or used by the Employer, his agents, employees or other contractors (not being employed by the Contractor);</p> <p>then the appropriate penalty for delay referred to in Clause 5.13.1 above shall be reduced by the amount which is determined by the Engineer to be appropriate under the circumstances.</p> <p>5.13.3 The imposition of penalties in terms of Clause 5.13.1 shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.</p> <p>5.13.4 All penalties for which the Contractor becomes liable in terms of Clause 5.13.1 shall be accumulative. The Employer may, without prejudice to any other method of recovery, deduct the amounts of all such penalties from any monies in his possession that are or may become due to the Contractor.</p>
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THE CONTRACT
Part C1: Agreement and Contract Data

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C1.2
Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM PHASE C (RE-ADVERT

Clause	Contract Data
	5.13.5 The imposition of any penalties in terms of Clause 5.13.1 shall not limit the right of the Engineer of the Employer to act in terms of Clause 9.2.
5.13.4	<p>Add the following new Clause:</p> <p>If the Contractor shall, without the prior written permission of the Engineer, in respect of any portions of the Works which are prescribed in the Scope of Work to be executed using labour intensive construction methods, or for which the maximum size and capacity of mechanical plant and equipment is restricted in terms of the Contract:</p> <ul style="list-style-type: none"> • fail to execute such portions of the Works, or any parts thereof, utilising labour-intensive construction methods strictly in accordance with the provisions of the Contract; or • utilise in the execution of such portions of the Works, or any parts thereof, mechanical plant or equipment which is in conflict with the terms of the Contract; or • utilise in the execution of such portions of the Work, workers drawn from sources other than those allowed in terms of the Contract. <p>then the Contractor shall be liable to the Employer for the percentage stated below of the value of the Works so executed in conflict with the provisions of the relevant Scope of Work, as a penalty for non-compliance.</p> <p>The penalty for non-compliance is: 15% of the value of Works specified.</p> <p>The imposition of penalties in terms of this clause shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.</p>
5.16.3	The Latent defect period is 10 years after the issue of the Final Approval Certificate in terms of Clause 15.6.1
6.1.1	<p>Add the following to the clause:</p> <p>Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.</p>
6.2.1	<p>Add the following to this Clause:</p> <p>The amount of the Surety will be 10% of the Contract Price (including Value Added Tax) at the time that the Agreement comes into effect. The guarantee shall remain valid until the issue of the Certificate or Certificates of Completion in respect of the whole of the Permanent Works. The Pro Forma Form of Guarantee bound into the General Conditions of Contract is replaced by the Form of Guarantee (Deed of Surety ship) which is included in Part C1.3 of this document.</p> <p>This approval or otherwise shall be based upon legal opinion to be provided by the Engineer.</p>
6.8.2	The application of a Contract Price Adjustment factor will not apply to this Contract. "Refer to Contract Price Adjustment Schedule for details".
6.8.3	Price Adjustments for variations in the cost of special materials will be allowed. "The Contractor will be required to provide full details in Part 2 of the Contract Data".

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Part C1: Agreement and Contract Data

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C1.2
Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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Clause	Contract Data
6.8.4	In line 8 delete the words "between the Employer and the Contractor".
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
6.10.3	The percentage retention is 10%. The Limit of Retention Money is 5% of the Contract Price at the time of the Agreement made in terms of the Form of Offer and Acceptance coming into effect.
6.10.4	In line 4 delete the word "said" and insert the word "correct".
6.10.9	Replace the first sentence of the clause with the following: Within 14 days after the date of final approval as stated in the Final Approval Certificate, the Contractor shall deliver to the Engineer a final statement claiming final statement of all moneys due to him for additional work ordered by the Engineer after the Certificate of Completion date (save in respect of matters in dispute, in terms of Clause 58, and not yet resolved) plus the remainder of retention monies (subject to Clause 49.5.1) retained by the Employer.
6.11.1.3	Delete "15 %" and replace it with "25%".
8.6.1.3	The limit of indemnity for liability insurance is R5 000 000 per event, the number of events being unlimited.
10.5.3	The number of Adjudication Board Members to be appointed is 1 (One).

CONTRACT PRICE ADJUSTMENT SCHEDULE	
Clause	Contract Data
1.1	The application of a Contract Price Adjustment factor will not apply to this Contract. The price adjustment formula provided in the General Conditions of Contract will apply, together with the following coefficients and the definition of the relevant indices indicated below; X=0,10 a=0.15 b=0.20 c=0.55 d=0.1
1.2	Replace the definitions of the relevant indices with the following: "L" is the "Labour Index" and shall be the "Consumer Price Index" as published in the Consumer Price Index Statistical Release P0141 (Table A – Consumer Price Index and percentage change according to Rustenburg of Statistics South Africa. "P" is the "Plant Index" and shall be the "Civil Engineering Plant" index as published in the Production Price Index Statistical Release P0142.1 (Table 12 – Price Index for selected materials) of Statistics South Africa. "M" is the "Materials Index" and shall be the "Civil Engineering" index as published in the Production Price Index Statistical Release P0142.1 (Table 11 – Production Price for materials used in certain industries) of Statistics South Africa. "F" is the "Fuel Index" and shall be the "Diesel fuel – Coast and Witwatersrand" index as published in the Production Price Index Statistical Release

THE CONTRACT
Part C1: Agreement and Contract Data

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C1.2
Contact Data

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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	P0142.1 (Table 12 - Production Price Index for selected materials) of Statistics South Africa.
1.3	The base month shall be the month prior to the closing date of this tender.

Part 2: Data provided by the Contractor

Clause	Contract Data												
1.1.1.9	The name of the Contractor is: _____ _____												
1.2.1.2	The address of the Contractor is: _____ _____												
6.2.1	The security to be provided by the Contractor shall be one of the following: <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Type of Security</th> <th>Contractor's choice. Indicate "Yes" or "No"</th> </tr> </thead> <tbody> <tr> <td>Cash deposit of 10% of the Contract Sum (Incl. VAT).</td> <td></td> </tr> <tr> <td>Performance guarantee of 10 % of the Contract Sum (Incl. VAT).</td> <td></td> </tr> <tr> <td>Retention of 10% of the value of the Works (Incl. VAT).</td> <td></td> </tr> <tr> <td>Cash deposit of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).</td> <td></td> </tr> <tr> <td>Performance guarantee of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).</td> <td></td> </tr> </tbody> </table>	Type of Security	Contractor's choice. Indicate "Yes" or "No"	Cash deposit of 10% of the Contract Sum (Incl. VAT).		Performance guarantee of 10 % of the Contract Sum (Incl. VAT).		Retention of 10% of the value of the Works (Incl. VAT).		Cash deposit of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).		Performance guarantee of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).	
Type of Security	Contractor's choice. Indicate "Yes" or "No"												
Cash deposit of 10% of the Contract Sum (Incl. VAT).													
Performance guarantee of 10 % of the Contract Sum (Incl. VAT).													
Retention of 10% of the value of the Works (Incl. VAT).													
Cash deposit of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).													
Performance guarantee of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).													
6.8.3	The variation in cost of special materials is:												

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Contractor

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	Special Material	Method	Price for Base Month

END OF SECTION

Employer

Witness 1

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Contractor

Witness 1

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C1.3. Pro forma Performance guarantee

Contract No **RLM/OMM/0109/2023/24**

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

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

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.

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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 Expiry Date or 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 receipts 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 term 1.
7. Where the Guarantor has made payment in term 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 Employer.

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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 services of all notices for all purposes in connection herewith.
12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor 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).....

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Contractor

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CONTRACT PART C2: PRICING DATA

- C2.1 Pricing Instructions
- C2.2 Bill of Quantities

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C2.1 PRICING INSTRUCTIONS

- 1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.
- 2 The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

Although the Bidder is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Bill.

Clause 8 of each Standardized Specification, and the measurement and payment clause of each Particular Specification, read together with the relevant clauses of the Project Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.

- 3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Contractor submitted on such a basis. The Bill has been drawn up generally in accordance with the latest issue of Civil Engineering Quantities ^[1]. Should any requirement of the measurement and payment clause of the appropriate Standardized or Project Specification(s) be contrary to the terms of the Bill or, when relevant, to the Civil Engineering Quantities, the requirement of the appropriate Standardized, Project, or Particular Specification as the case may be, shall prevail.
- 4 Unless stated to the contrary, items are measured net in accordance with the Drawings without any allowance having been made for waste.
- 5 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Bid is based.
- 6 The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the schedule of quantities, will be used to determine payments to the contractor.

^[1] The standard system of measurement of civil engineering quantities published by the South African Institution of Civil Engineers.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



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- 7 An amount or rate shall be entered against each item in the Bill of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Bill.

The Bidder shall also fill in a rate against the items where the words "rate only" appear in the amount column. Although no work is foreseen under these items and no quantities are consequently given in the quantity column, the bid rates shall apply should work under these items actually be required.

Should the Bidder group a number of items together and bid one sum for such group of items, the single bid sum shall apply to that group of items and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

The bid rates, prices and sums shall, subject only to the provisions of the Conditions of Contract, remain valid irrespective of any change in the quantities during the execution of the Contract.

- 8 The quantities of work as measured and accepted and certified for payment in accordance with the Conditions of Contract, and not the quantities stated in the Bill of Quantities, will be used to determine payments to the Contractor. The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities and the quantities certified for payment.

Ordering of materials are not to be based on the Bill of Quantities, but only on information issued for construction purposes.

- 9 For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:

Unit : The unit of measurement for each item of work as defined in the Standardized, Project or Particular Specifications

Quantity : The number of units of work for each item

Rate : The payment per unit of work at which the Bidder bids to do the work

Amount : The quantity of an item multiplied by the bid rate of the (same) item

Sum : An amount bid for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere, but of which the quantity of work is not measured in units

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- 10 The units of measurement indicated in the Bill of Quantities are metric units. The following abbreviations may appear in the Bill of Quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m ²	=	square metre
m ² -pass	=	square metre-pass
ha	=	hectare
m ³	=	cubic metre
m ³ -km	=	cubic metre-kilometre
kW	=	kilowatt
kN	=	kilonewton
kg	=	kilogram
t	=	ton (1 000 kg)
%	=	per cent
MN	=	meganewton
MN-m	=	meganewton-metre
PC Sum	=	Prime Cost Sum
Prov Sum	=	Provisional Sum

11. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the Standardised Specifications.
12. All prices and rates entered in the Bill of Quantities must be **excluding Value Added Tax (VAT)**. VAT will be added last on the summary page of the Bill of Quantities.

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C2.2 BILL OF QUANTITIES

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
1	SABS 1200 A	<u>SECTION 1 : PRELIMINARY AND GENERAL</u>						
1.1	PSA 8.3	FIXED CHARGE AND VALUE RELATED ITEMS:						
1.1.1	8.3.1	Contractual Requirements	Sum	1	R		R	
1.1.2	PSA 8.3.2.1 PSAB	Facilities for Engineer:						
		a) Engineer's offices, Office Furniture and Carports as per Specifications for RE and 2 Assistants	Sum	1	R		R	
		b) Combination photocopying fax & telephone machine	Sum	1	R		R	
		c) Nameboards (2 No)	Sum	1	R		R	
		d) Survey assistant and survey materials	Sum	1	R		R	
		e) Boardroom for meetings (20 people) including conference table and chairs	Sum	1	R		R	
		f) Safety equipment, including hard hats, removable revolving orange light for vehicles & reflective vests for 3	Sum	1	R		R	
1.1.3	8.3.2.2	Facilities for Contractor:						
		a) Offices and storage sheds	Sum	1	R		R	
		b) Workshops	Sum	1	R		R	
		c) Living accommodation	Sum	1	R		R	
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
1	SABS 1200 A	<u>SECTION 1 : PRELIMINARY AND GENERAL</u>						
1.1	PSA 8.3	FIXED CHARGE AND VALUE RELATED ITEMS:						
1.1.1	8.3.1	Contractual Requirements	Sum	1	R		R	
1.1.2	PSA 8.3.2.1 PSAB	Facilities for Engineer:						
		a) Engineer's offices, Office Furniture and Carports as per Specifications for RE and 2 Assistants	Sum	1	R		R	
		b) Combination photocopying fax & telephone machine	Sum	1	R		R	
		c) Nameboards (2 No)	Sum	1	R		R	
		d) Survey assistant and survey materials	Sum	1	R		R	
		e) Boardroom for meetings (20 people) including conference table and chairs	Sum	1	R		R	
		f) Safety equipment, including hard hats, removable revolving orange light for vehicles & reflective vests for 3	Sum	1	R		R	
1.1.3	8.3.2.2	Facilities for Contractor:						
		a) Offices and storage sheds	Sum	1	R		R	
		b) Workshops	Sum	1	R		R	
		c) Living accommodation	Sum	1	R		R	
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		d) Ablution and latrine facilities	Sum	1	R	R
		e) Tools and equipment	Sum	1	R	R
		f) Water supplies, electric power and communications	Sum	1	R	R
		g) Dealing with water	Sum	1	R	R
		h) Access	Sum	1	R	R
		i) Plant	Sum	1	R	R
1.1.4	8.3.3	Other fixed-charge obligations	Sum	1	R	R
1.1.5	8.3.3	Environmental Specification	Sum	1	R	R
1.1.6	8.3.3	Safety plan	Sum	1	R	R
1.1.7	8.3.4	Removal of site establishment	Sum	1	R	R
1.1.8	PSA 8.3.5	Security of Contractor's plant and personnel	Sum	1	R	R
1.2	PSA 8.4	TIME RELATED ITEMS				
1.2.1	8.4.1	Contractual Requirements	Month	12	R	R
1.2.2	PSA8.4.2.1	Facilities for Engineer:				
	PSAB	a) Office and office Furniture for 3	Month	12	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
1.2.4	8.4.3	Supervision for duration of construction	Month	12	R	R
1.2.5	8.4.4	Company and head office overhead costs for the duration of the contract	Month	12	R	R
1.2.6	8.4.5	Other time-related obligations	Month	12	R	R
1.2.7	8.4.5	Environmental specification	Month	12	R	R
1.2.8	8.4.5	Implementation of Safety plan as per OHS Act	Month	12	R	R
1.2.9	8.4.5	Security of Contractor's plant and personnel	Month	12	R	R
1.2.10		Payment of CLO @ 7000.00 per month	Month	12	R 7,000.00	R 84,000.00
1.5	8.5	Sums stated provisionally by the Engineer Testing				
		b) Material Testing to check testing done by contractor	Prov sum	1	R 50,000.00	R 50,000.00
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
1.6		Other testing requirements				
		a) Allow for attendance to all factory inspections, such as travel expenses, accommodation and per diem.	Prov Sum	1	R 5,000.00	R 5,000.00
		b) Electrical - Allow to test and commission the complete installation in the presence of the engineer and the client's representative and hand over for commercial use	Prov Sum	1	R 5,000.00	R 5,000.00
1.7		Training of Labourers	Prov Sum	1	R 100,000.00	R 100,000.00
1.8		Provisional Sum for costs hiring training venue and labour payment during training	Prov Sum	1	R 10,000.00	R 10,000.00
1.9		Accommodation for engineer's site personnel	Prov Sum	1	R 240,000.00	R 240,000.00
1.10		Additional Surveys required by Engineer	Prov Sum	1	R 50,000.00	R 50,000.00
1.11		Allow for all additional tests and compliance for registration of plant and WUL	PC Sum	1	R 20,000.00	R 20,000.00
1.13		Handling cost for 1.2.10 to 1.11 above	%	R564,000.00	___%	R
TOTAL SECTION 1 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount		
					R	c	R	c	
2		<u>SECTION 2 : NEW DISTRIBUTION BOX</u>							
2.1	SANS 1200 C	SITE CLEARANCE							
2.1.1	8.2.1	Clear site	m ²	6.0	R		R		
2.1.2		Remove topsoil, as designated by Engineer, to nominal depth of 100mm and stockpile	m ³	1.0	R		R		
2.2	SANS 1200 D	-							
		Bulk earthworks for Structures							
	8.3.2 (a)	Excavate and trim in all materials to the level of blinding layer and spread and compact on site at designated area, unsuitable or excess backfill material from:							
2.2.1		Cut to stockpile	m ³	1.0	R		R		
2.2.2	PSD3.3.2	Cut to fill	m ³	1.0	R		R		
2.2.3		Cut to spoil	m ³	10.0	R		R		
TOTAL CARRIED FORWARD TO NEXT PAGE								R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		Restricted Excavation				
	8.3.2(b)	Extra -over items 2.2. for:				
2.2.4		Intermediate material	m ³	10	R	R
2.2.5		Hard Rock material	m ³	5	R	R
		Restricted Backfill				
2.2.6		Extra over items 3.21 to 3.2.4 for backfill with material from stockpile	m ³	3.0	R	R
2.3	SANS 1200 G	CONCRETE (Structural)				
	8.4.3 PSG3.4.4	Strength concrete : 30 Mpa/19mm				
2.3.1		Walls, floor, columns and floor of reactor. Walls, floor and various structural concrete of SST	m ³	11	R	R
2.3.2	PSG8.5.3	Screed	m ²	11	R	R
2.3.3	8.4.2 PSG8.1.3.4	Blinding layer 50mm thick in 15 Mpa/19 mm concrete	m ²	6	R	R
2.4	8.1.1 PSG4.5	FORMWORK Rough				
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE							R	
2.4.1	8.2.1 PSG4.5.1 PSG4.5.2	Walls below ground level at: Vertical at 3.8m	m ²	30.0	R		R	
2.4.2								
	8.2.2	Smooth						
		Walls above ground level at:						
2.4.3		Vertical at 2m	m ²	18	R		R	
2.4.4		Vertical for platform	m ²	1	R		R	
2.4.5		Vertical internal wall	m ²	17	R		R	
2.4.6		Soffit of walkway	m ²	3	R		R	
2.4.7	PSG 8.1.1.2	Small narrow vertical widths 300mm wide	m	1	R		R	
	8.2.6	Box out holes/form voids						
	PSG5.4							
2.4.8	PSG 8.1.3.6	Circular up to 1m diameter for depth over and up to 0m to 0.25m deep	No	2	R		R	
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
2.5	PSG5.1 PSG8.1.2	REINFORCEMENT				
2.5.1	8.3.1	High-tensile steel bars 10 - 32mm diameter	t	3	R	R
2.6	8.4.4	UNFORMED SURFACE FINISHES				
		Wood-floated finish				
2.6.1		Top of walls	m ²	3	R	R
2.6.2		Top of walkway	m ²	1	R	R
		Steel-floated finish				
2.6.3	PSG7.3.6	Create 45° degree overflow weirs	m ²	0.5	R	R
2.7	SANS 1200 HA PSHA 8.1	STRUCTURAL STEELWORK (Small Works)				
2.7.1	PSHA 8.2.5	Handrailing, hot dipped galvanised, complete with stainless steel HD bolts.	m	7	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
2.8		MISCELLANEOUS				
2.8.1		Allow a provisional sum for small items omitted from this section	PC.Sum	1	R 50,000.00	R 50,000.00
2.8.2	PSG7.2.6	Watertightness testing	Sum	1	R	R
TOTAL SECTION 2 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
3		<u>SECTION 3: CLARIFIER/SECONDARY SETTLING TANK</u>				
3.1	SANS 1200 C	SITE CLEARANCE				
3.1.1	8.2.1	Clear site	ha	0.05	R	R
3.1.2		Remove topsoil, as designated by Engineer, to nominal depth of 100mm and stockpile	m ³	28	R	R
3.2	SABS 1200 D	EARTHWORKS Bulk earthworks for Structures				
3.2.1	8.3.2 (a)	Excavate and trim in all materials to the level of blinding layer and spread and compact on site at designated area, unsuitable or excess backfill material from: Cut to stockpile	m ³	28	R	R
3.2.2	PSD3.3.2	Cut to fill	m ³	57	R	R
3.2.3		Cut to spoil	m ³	482	R	R
3.2.5	8.3.2(b)	Restricted Excavation Extra -over item 5.2.1 to 5.2.4 for: Intermediate material	m ³	350	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
3.2.6		Hard Rock material Restricted Backfill	m ³	100	R	R
3.2.7		Extra over item 5.2.2 for backfill with material from stockpile	m ³	113	R	R
3.3	SABS 1200 G	CONCRETE (Structural)				
3.3.1	8.1.3 8.4.2 PSG8.1.3.4	Blinding layer 50mm thick in 15 Mpa/19mm concrete	m ²	50	R	R
3.3.2		No fines concrete : 15 MPa/19mm	m ³	210	R	R
3.3.3		Mass concrete: 20 MPa/19mm	m ³	2	R	R
3.3.4	8.4.3 PSG3.4.4	Strength concrete : 35 Mpa/19mm Wall footings and centre column	m ³	68	R	R
3.3.5		Walls and effluent launder	m ³	83	R	R
3.3.6		Floors	m ³	14	R	R
3.3.7		Outlet boxes	m ³	15	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE							R	
3.3.8	PSG8.5.3	50mm (1:4) Cement mortar screed with steelfloat, shaped with mechanical scrapers	m ²	284	R		R	
3.3.9	PSG8.5.3	Varying depth (1:4) cement mortar screed in channel and outlet box finished with steelfloat	m ³	15	R		R	
3.4	8.1.1 PSG4.5	FORMWORK Rough						
	8.2.1 PSG4.5.1	Walls below ground at radii:						
3.4.1	PSG4.5.2	2.5m and 9.88m	m ²	182	R		R	
3.4.3		4.5m (circular expansion joint in floor)	m ²	20	R		R	
3.4.4		In expansion joints - Vertical plane	m ²	80	R		R	
3.4.5		Vertical at radii of between 1.5m	m ²	38	R		R	
3.4.6		Vertical at radii of between 9.88m and 10.18m (Above Ground)	m ²	151	R		R	
3.4.7		Walls vertical plane (boxes)	m ²	80	R		R	
3.4.8		Soffit to channel (effluent launder)	m ²	180	R		R	
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
3.5	8.2.6 PSG5.4	BOX OUT HOLES/FORM VOIDS				
3.5.1	PSG 8.1.3.6	Box out holes/form voids, large, other shapes, area 0.1 - 0.36m ² for depths over and up to 0m - 0.25m	No	6	R	R
3.6	PSG5.1 PSG8.1.2	REINFORCEMENT				
3.6.1	8.3.1	High-tensile steel bars 10 - 32mm diameter	t	13.5	R	R
3.7	8.4.4	UNFORMED SURFACE FINISHES				
		Wood floated finish				
3.7.1		To top of walls	m ²	30	R	R
		Steel floated finish				
3.7.2		To top of screeds in outlet boxes and overflow channel	m ²	50	R	R
3.7.3	PSG7.3.6	Special finish to top of overflow weir	m	50	R	R
3.7.4		Special surface finish to sliding joint areas	m ²	30	R	R
3.8	8.5 PSG8.1.3.5	JOINTS				
3.8.1		Type 7: Floor expansion joint	m	150	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
3.8.3		Type 1: Horizontal construction joint in walls	m	70	R	R
3.9		SUB-SOIL DRAINAGE				
3.9.1		uPVC non-perforated pipes, 110mm diameter, in Class C bedding	m	100	R	R
3.10		MISCELLANEOUS				
3.10.1		Allows a provisional sum for small items omitted from this section	PC-Sum	1	R 50,000.00	R 50,000.00
3.10.2	PSG7.2.8	Water tightness testing of unit	Sum	1	R	R
TOTAL SECTION 3 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount		
					R	c	R	c	
4		<u>SECTION 4: ANAEROBIC ZONE REACTOR</u>							
4.1	SANS 1200 C	SITE CLEARANCE							
4.1.1	8.2.1	Clear site	ha	0.04	R		R		
4.1.2		Remove topsoil, as designated by Engineer, to nominal depth of 100mm and stockpile	m ³	36	R		R		
4.2	SABS 1200 D	EARTHWORKS							
		Bulk earthworks for Structures							
		Excavate and trim in all materials to the level of blinding layer and spread and compact on site at designated area, unsuitable or excess backfill material from:							
4.2.1	8.3.2 (a)	Cut to stockpile	m ³	68	R		R		
4.2.2	PSD3.3.2	Cut to fill	m ³	135	R		R		
4.2.3		Cut to spoil	m ³	1151	R		R		
		Restricted Excavation							
4.2.4		Excavate and trim in all material and place at stockpile on site for reuse and spread excess unused material on site or unused ponds	m ³	500	R		R		
TOTAL CARRIED FORWARD TO NEXT PAGE							R		

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
4.2.5	8.3.2(b)	Extra -over item 8.2.1 to 8.2.4 for: Intermediate material	m ³	400	R	R
4.2.6		Hard Rock material	m ³	200	R	R
		Restricted Backfill				
4.2.7		Extra over item 8.2.4 for backfill with material from stockpile	m ³	271	R	R
4.3	SANS 1200G 8.1.3	CONCRETE (Structural)				
4.3.1	8.4.2 PSG8.1.3.4	Blinding layer 50mm thick in 15 Mpa/19 mm concrete	m ²	450	R	R
		Strength concrete: 35 Mpa/19mm				
4.3.3	8.4.3 PSG3.4.4	Floor slab	m ³	89	R	R
4.3.4		Stairs and walkway	m ³	29	R	R
4.3.5		Walls & Columns	m ³	52	R	R
4.3.6		Mass Concrete in benching: 15 Mpa/19mm	m ³	20	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE							R	
4.4	8.1.1 PSG4.5	FORMWORK						
		Rough						
4.4.1	8.2.1 PSG4.5.1	Walls below ground level, vertical	m ²	278	R		R	
4.4.2	PSG4.5.2	Narrow widths up to 300mm wide	m	50	R		R	
		Smooth						
4.4.3	8.2.2	Vertical plane to walls	m ²	148	R		R	
4.4.4	PSG 8.1.1.2	Soffit of walkway and columns	m ²	75	R		R	
4.5	8.2.6 PSG5.4 PSG 8.1.3.6	BOX OUT HOLES / FORM VOIDS						
		Small, circular up to 1m dia for depth over and up:						
4.5.1		To 0m to 0.3m	No	3	R		R	
4.6	PSG5.1 PSG8.1.2	REINFORCEMENT						
4.6.1	8.1.2	Mild steel bars 10mm diameter	t	2.5	R		R	
4.6.2	8.3.2	Mesh ref 617	m ²	10	R		R	
4.6.3	8.3.1	High-tensile steel bars 10 - 32mm diameter	t	29	R		R	
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
4.7	8.4.4	UNFORMED SURFACE FINISHES				
		Wood-floated finish				
4.7.1		Top of walls and walkway	m ²	89	R	R
		Steel-floated finish				
4.7.2		Floors	m ²	19	R	R
4.7.3		Benching and screeds in boxes	m ²	6	R	R
4.7.4	PSG7.3.6	Special finish to top of overflow weir	m	20	R	R
4.8	8.7 PSG5.5.13.4	GROUTING				
4.8.1	PSG8.1.3.6	300mm diameter puddle pipe (AR1)	No	1	R	R
4.8.2	PSG8.1.3.6	400mm diameter puddle pipe (AR2)	No	2	R	R
4.9	PSB 1.19	PIPEWORK				
4.9.1		Supply and install (Including lay and bed) the subsoil-drainage pipe, consisting of 110mm perforated pipe in position as indicated on the drawings	m	150	R	R
4.10	SANS 1200 HA	STRUCTURAL STEELWORK (Small Works)				
4.10.1	PSHA 8.1 PSHA 8.2.5	Hand railings as specified	m	89	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
4.11	PSG8.1.3.5 8.5	JOINTS				
4.11.1		Isolation joint (As per structural drawings)	m	200	R	R
4.12		MISCELLANEOUS				
4.12.1		Allow a provisional sum for small items omitted from this section	P.Sum	1	R 50,000.00	R 50,000.00
4.12.2	PSG7.2.6, PSG 8.5.4	Watertightness testing	Sum	1	R	R
TOTAL SECTION 4 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
5.1	SANS 1200 DB, L, LB	<u>SECTION 5 : INTERCONNECTING PIPEWORK</u>						
		EXCAVATION						
	8.3.2(a)	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes:						
		From 40 up to 200mm Diameter for total trench depth (trench width 600mm)						
	5.1.1	0.0 - 1.0m	m	220	R		R	
	5.1.2	1.0 - 2.0m	m	80	R		R	
		From 250mm up to 450mm diameter for total trench depth (trench width 900mm) :						
5.1.3	0.0 - 1.0m	m	100	R		R		
	8.3.2(b)	Extra-over items 5.1.1 to 5.1.3 incl. for:						
5.1.4		Intermediate excavation	m ³	20	R		R	
5.1.5		Hard rock excavation	m ³	10	R		R	
5.2	SABS 1200 LB 8.2.1	PROVISION OF BEDDING						
		Available from trench or within 2.0km free haul						
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
5.2.1		Selected granular material	m ³	36	R	R
5.2.2		Selected fill material	m ³	20	R	R
5.3	SABS 1200L	MEDIUM PRESSURE PIPELINE				
		Supply, handle, lay and bed and test with uPVC couplings:				
5.3.1		250mm diameter uPVC Class 9	m	80	R	R
5.3.2		200mm diameter uPVC Class 9	m	70	R	R
5.3.3		200mm diameter uPVC Class 6	m	150	R	R
5.3.4		110mm diameter uPVC Class 6	m	80	R	R
5.3.5		300mm diameter uPVC Class 6	m	20	R	R
5.3.6		250mm Sch40 STD flanged galvanized steel pipe (Including flanges and flange adaptor as per drawings)	m	15	R	R
5.3.7		200mm Sch40 STD flanged galvanized steel pipe (Including flanges and flange adaptor as per drawings)	m	10	R	R
		110mm Diameter uPVC fittings:				
5.3.8		45 degree bend	No	2	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
5.3.9		200mm dia uPVC/cast iron fittings 45 degree bend	No	5	R	R
5.3.10		90 degree bend Sch40 STD fittings custom made:	No	1	R	R
		250mm Sch40 STD pipe	No.	2	R	R
		<u>ANCILLARIES</u>				
5.3.11	8.2.11	Anchor/thrust blocks and pedestals including class 20/19 Mpa concrete and formwork	m ³	10	R	R
TOTAL SECTION 5 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
6	PSB2.5	SECTION 6: MIXERS (STIRRERS)						
6.1		SUPPLY Supply of the following plant, including the storage, quality assurance and painting where applicable:	-					
	PSB2.5.1	Biological Reactor: Vertical shaft mixers on platforms:						
6.1.1		Anaerobic Basin (proposed new reactor)	No	4	R		R	
6.2		INSTALLATION AND COMMISSIONING						
6.2.1		Produce mechanical drawings for all plant supplied under items 6.1.1	Sum	1	R		R	
6.2.2		Erection & installation of plant & materials supplied under items 6.1.1	Sum	1	R		R	
6.2.3		Commissioning of plant & equipment supplied under items 6.1.1	Sum	1	R		R	
6.2.4		Allow for the cost of returning to site if necessary and if ordered, in order to carry out tests on the plant.	PC Sum	1	R	100,000.00	R	100,000.00
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Contractor

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		Period for complete delivery of all plant and material from date of order.....weeks Period in which complete erection will be affected and plant handed over to the satisfaction of the Engineer, from the date of delivery or receipt of order with erection, whichever is later.....weeks				
TOTAL SECTION 6 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
7	PSB2.6	SECTION 7: SURFACE AERATORS (Existing Aerobic Reactor) Refurbish existing plant, including the all the plant and equipment required to remove, handle, storage, quality assurance and painting where applicable:	-					
7.1		MOTORS AND GEARBOXES						
7.1.1	PSB2.6	For Aerators (45kW)	No	4	R			R
7.2		INSTALLATION AND COMMISSIONING						
7.2.1		Erection & re-installation of plant & materials refurbished under items 7.1.1	No	4	R			R
7.2.3		Commissioning of plant & equipment under items 7.1.1	Sum	1	R			R
7.2.4		Allow for the cost of returning to site if necessary and if ordered, in order to carry out tests on the plant. Period for complete delivery of all plant and material from date of order.....weeks Period in which complete erection will be affected and plant handed over to the satisfaction of the Engineer, from the date of delivery or receipt of order with erection, whichever is later.....weeks	PC Sum	1	R	50,000.00		R 50,000.00
TOTAL SECTION 7 CARRIED FORWARD TO SUMMARY OF SCHEDULES								R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount		
					R	c	R	c	
8	PSB2.16	<u>SECTION8: CLARIFIER ROTATING BRIDGES</u> Supply of the following plant, including the storage, quality assurance and painting where applicable:	-						
8.1		CLARIFIER EQUIPMENT Rotating bridge, hand railings, sludge scraper equipment mounted to bridge, corrosion protection, driving motor, bridge wheel and electrical connections as specified.							
8.1.1	PSB2.16.3	Weir plate each 60m long	No	1	R		R		
8.1.2	PSB2.16.5	Stilling chambers	No	1	R		R		
8.1.3	PSB2.16.4	Commissioning of plant & equipment supplied under items 8.1.	No	1	R		R		
8.2		INSTALLATION AND COMMISSIONING Design, and submit for approval and produce mechanical drawings for all plant supplied under items 8.1.							
8.2.1		Erection & installation of plant & materials supplied under items 8.1.	Sum	1	R		R		
8.2.2		Commissioning of plant & equipment supplied under items 8.1.	Sum	1	R		R		
8.2.3		Allow for the cost of returning to site if necessary and if ordered, in order to carry out tests on the plant.	Sum	1	R		R		
8.2.4			PC Sum	1	R	100,000.00	R	100,000.00	
TOTAL CARRIED FORWARD TO NEXT PAGE								R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		Period for complete delivery of all plant and material from date of order.....weeks Period in which complete erection will be affected and plant handed over to the satisfaction of the Engineer, from the date of delivery or receipt of order with erection, whichever is later.....weeks				
TOTAL SECTION 8 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
9	PSB2.8	<u>SECTION 9: PUMPS AND ASSOCIATED PIPEWORK</u> Supply of the following pumps (belt driven) and motors with pump stand, mounting plates and bolts as specified, including the storage, quality assurance and painting where applicable:	-					
9.1		RAS PUMPS c/w ultrasonic level switch						
9.1.1	PSB2.8.4	Pump Gorman Rupp or Cornell or similar self-priming pump	No	1	R		R	
9.2		DESIGN STEEL PIPE WORK AND SPECIALS Design and produce mechanical drawings for pump set with pipework as specified as well as provision and installation of all pipework as per design:						
9.2.1		All pipework, couplings and valves to add new pump and motor to existing RAS P/S	PC Sum	1		R 100,000.00		R 100,000.00
9.3		INSTALLATION AND COMMISSIONING Erection & installation of plant & materials supplied under items 9.1 to 9.2						
9.3.1			Sum	1	R		R	
TOTAL CARRIED FORWARD TO NEXT PAGE								R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
9.3.2		Commissioning of plant & equipment supplied under items 9.1 to 9.2	Sum	1	R	R
9.3.3		Allow for the cost of returning to site if necessary and if ordered, in order to carry out tests on the plant. Period for complete delivery of all plant and material from date of order.....weeks Period in which complete erection will be affected and plant handed over to the satisfaction of the Engineer, from the date of delivery or receipt of order with erection, whichever is later.....weeks	PC Sum	1	R 100,000.00	R 100,000.00
TOTAL SECTION 9 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount		
					R	c	R	c	
10	PSB2.9	<u>SECTION 10: WEIRS AND PENSTOCKS</u> Supply of the following plant, including the storage, quality assurance and painting where applicable:	-						
10.1		PENSTOCKS AT ANAEROBIC REACTOR							
10.2.1	PSB2.9	Rising sluice gate with extended spindles and flush invert	No	3	R		R		
10.3	PSB2.9.1	WEIRS IN STAINLESS STEEL							
		Flow Division Box							
10.3.1	PSB2.9.1	1000mm Long rectangular	No	1	R		R		
10.4		INSTALLATION AND COMMISSIONING							
10.4.1		Design and produce mechanical drawings for all plant supplied under items 10.1 to 10.3	Sum	1	R		R		
10.4.2		Erection & installation of plant & materials supplied under items 10.1 to 10.3	Sum	1	R		R		
10.4.3		Commissioning of plant & equipment supplied under items 10.1 to 10.3	Sum	1	R		R		
TOTAL CARRIED FORWARD TO NEXT PAGE							R		

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
10.5		GATE VALVES (SLUICE VALVES)				
10.5.1		<p>Construction of gate valve chamber, including valve, pipework and fittings and flange adaptors. Includes all jointing, cutting, supply, delivery & installation. All items to comply with SABS 664 & fitted with resilient seal seats.</p> <p>Period for complete delivery of all plant and material from date of order.....weeks</p> <p>Period in which complete erection will be affected and plant handed over to the satisfaction of the Engineer, from the date of delivery or receipt of order with erection, whichever is later.....weeks</p>	No.	1	R	R
TOTAL SECTION 10 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
11		<u>SECTION 11: TRAINING OF PROCESS CONTROLLERS</u>						
11.1		OPERATION AND MAINTENANCE						
11.1.1		Allowance for effluent compliance monitoring and performance of water quality test if required	Prov Sum	1	R	150,000.00	R	150,000.00
11.2		TRAINING OF OPERATORS						
11.2.1		Intensive training of Process Controllers for first ten days (Accredited Training)	Prov Sum	1	R	250 000.00	R	250 000.00
TOTAL SECTION 11 CARRIED FORWARD TO SUMMARY OF SCHEDULES							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
<u>SECTION 12: MISCELLANEOUS ITEMS</u>						
12.1		Upgrade internal/external road: Lethabong WWTW	Prov Sum	1	R 1 350,000.00	R 1,350,000.00
12.2		Relocation and/or protection of existing services to allow uninterrupted operation of the plant	Prov Sum	1	R 500,000.00	R 500,000.00
12.3		Reimbursement for any other specialist work required by the Employer identified during construction	Prov Sum	1	R 500,000.00	R 500,000.00
12.4		Spares and Tools: Supply specified spares not itemised elsewhere in this Schedule of Quantities	Prov Sum	1	R 20,000.00	R 20,000.00
12.5		Recommended spares and tools as per Returnable Technical Data Sheets	Prov sum	1	R 20,000.00	R 20,000.00
12.6		Providing 2 draft copies of the Installation, Operation and Maintenance Manual prior to commissioning of the Works.	Sum	1	R	R
12.7		Providing 6 final copies of the Installation, Operation and Maintenance Manual prior to commissioning of the Works.	Sum	1	R	R
12.8		Provision of all Test Certificates and Certificate of Compliance in terms of the Code of Practice for Wiring of Premises.	Sum	1	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
12.9		Supply and install Air-conditioning Unit in MCC Room (24000BTU Air-conditioning Unit)	Sum	1	R	R
12.10		Modification to existing control room to allow for the installation of new MCC panel	Prov. Sum	1	R 150,000.00	R 150,000.00
TOTAL SECTION 12 CARRIED FORWARD TO SUMMARY OF SCHEDULES						R

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate		Amount		
					R	c	R	c	
		SECTION: E1 LV Switchgear and Control Assemblies							
		Switchgear Assemblies							
		New Reactor Mixer, RAS, Clarifier Bridge Motor Control Centre complete. Factory acceptance testing.							
E1.1		Supply	Sum	1	R		R		
E1.2		Install	Sum	1	R		R		
E1.3		Testing and Commissioning	Sum	1	R		R		
		New RAS Pump Station Motor Control Centre complete. Factory acceptance testing.							
E1.4		Supply	Sum	1	R		R		
E1.5		Install	Sum	1	R		R		
E1.6		Testing and Commissioning	Sum	1	R		R		
		Field Control Stations							
E1.7		Supply	Sum	6	R		R		
E1.8		Install	Sum	6	R		R		
E1.9		Testing and Commissioning	Sum	6	R		R		
TOTAL CARRIED FORWARD TO NEXT PAGE								R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E1.10		Allow for all costs and expenses in connection with the Site Delivery of items in this section				
E1.11		Supply	Sum	1	R	R
E1.12		Modification of existing control panels	Sum	1	R	R
		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):-				
E1.13				R	R
E1.14				R	R
E1.15				R	R
TOTAL SECTION: E1 Carried to Summary						R

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate R c	Amount R c
		SECTION E2 Area Lighting				
		Allow for all the costs and expenses in connection with the following:	-			
		High mast light fitting				
E2..1		Supply	No	2	R	R
E2..2		Install	No	2	R	R
E2..3		Testing and Commissioning	No	2	R	R
		Photometric Cell				
E2..4		Supply	No	2	R	R
E2..5		Installation	No	2	R	R
E2..6		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify) 	Sum	1	R 20 000.00	R 20 000.00
TOTAL SECTION: E2 Carried to Summary						R

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate R c	Amount R c
		SECTION E3 Cable Supports Allow for all costs and expenses in connection with design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading and storage of the following materials and equipment: Cable Ladder - Stainless steel welded cable ladder, 3mm thick side rails, channel cross rungs at 300mm centres, complete with couplers, clamps, threaded rods, hangers, cantilevers, brackets etc. to fix to trusses, walls. 100 x 100mm (W x H)	-			
E3.1		Straight length	m	-	R	Rate only
E3.2		Bends for cable ladder above	No	-	R	Rate only
		200 x 100mm (W x H)				
E3.3		Straight length	m	-	R	Rate only
E3.4		Bends for cable ladder above	No	-	R	Rate only
		300 x 100mm (W x H)				
E3.5		Straight length	m	-	R	Rate only
E3.6		Bends for cable ladder above	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R	Rate c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE							R
E3.7		600 x 100mm (W x H) Straight length	m	-	R		Rate only
E3.8		Bends for cable ladder above	No	-	R		Rate only
		800 x 100mm (W x H)					
E3.9		Straight length	m	-	R		Rate only
E3.10		Bends for cable ladder above	No	-	R		Rate only
		1000 x 100mm (W x H)					
E3.11		Straight length	m	-	R		Rate only
E3.12		Bends for cable ladder above	No	-	R		Rate only
		Wire Mesh Tray - Stainless steel welded Wire Mesh Cable Tray, 50 x 50mm Base Aperture, 25 x 50mm Side Aperture, complete with splices, couplers, clamps, threaded rods, hangers, brackets etc to fix to trusses, walls etc					
		100 x 50mm (W x H), Ø 4mm Wire					
E3.13		Straight length	m	-	R		Rate only
		200 x 50mm (W x H), Ø 4mm Wire					
E3.14		Straight length	m	-	R		Rate only
		300 x 50mm (W x H), Ø 4mm Wire					
E3.15		Straight length	m	-	R		Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE							R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E3.16		400 x 50mm (W x H), Ø 4mm Wire Straight length	m	-	R	Rate only
E3.17		Supply hot dipped galvanized steel conduit 20 Ø mm	m	-	R	Rate only
E3.18		25 Ø mm Allow for all costs and expenses in connection with the Site installation of the following: Cable Ladder - Stainless steel welded cable ladder, 3mm thick side rails, channel cross rungs at 300mm centres, complete with couplers, clamps, threaded rods, hangers, cantilevers, brackets etc. to fix to trusses, walls.	m	-	R	Rate only
E3.19		100 x 100mm (W x H) Straight length	m	-	R	Rate only
E3.20		Bends for cable ladder above	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E3.21		200 x 100mm (W x H) Straight length	m	-	R	Rate only
E3.22		Bends for cable ladder above	No	-	R	Rate only
		300 x 100mm (W x H)				
E3.23		Straight length	m	-	R	Rate only
E3.24		Bends for cable ladder above	No	-	R	Rate only
		600 x 100mm (W x H)				
E3.25		Straight length	m	-	R	Rate only
E3.26		Bends for cable ladder above	No	-	R	Rate only
		800 x 100mm (W x H)				
E3.27		Straight length	m	-	R	Rate only
E3.28		Bends for cable ladder above	No	-	R	Rate only
		1000 x 100mm (W x H)				
E3.29		Straight length	m	-	R	Rate only
E3.30		Bends for cable ladder above	No	-	R	Rate only
		Wire Mesh Tray - Stainless steel welded Wire Mesh Cable Tray, 50 x 50mm Base Aperture, 25 x 50mm Side Aperture, complete with splices, couplers, clamps, threaded rods, hangers, brackets etc to fix to trusses, walls etc				
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E3.31		Wire Mesh Tray - Stainless steel welded Wire Mesh Cable Tray, 50 x 50mm Base Aperture, 25 x 50mm Side Aperture, complete with splices, couplers, clamps, threaded rods, hangers, brackets etc to fix to trusses, walls etc 100 x 50mm (W x H), Ø 4mm Wire Straight length	m	-	R	Rate only
E3.32		200 x 50mm (W x H), Ø 4mm Wire Straight length	m	-	R	Rate only
E3.33		300 x 50mm (W x H), Ø 4mm Wire Straight length	m	-	R	Rate only
E3.34		400 x 50mm (W x H), Ø 4mm Wire Straight length	m	-	R	Rate only
E3.35		Supply Stainless steel conduit 20 Ø mm	m	-	R	Rate only
E3.36		25 Ø mm	m	-	R	Rate only
E3.37		Provisional Sum for cable supports	Prov Sum	1	R 200,000.00	R 200,000.00
		Percentage mark up on above item for contractor's overheads and profit (State in % and extend as an amount)	%	R200,000.00	_____ %	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Contact Data

Employer

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Contractor

Witness 1

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		All other items not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify):- 	Sum	1	R 50, 000.00	R 50, 000.00
TOTAL SECTION: E3 Carried to Summary						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
		SECTION: E4 LV Cables	-			
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading and storage of the following materials and equipment:	-			
		Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore cable with stranded conductors.	-			
E4.1		2.5mm ² x 4 core	m	100	R	R
E4.2		4.0mm ² x 4 core	m	100	R	R
E4.3		6mm ² x 4 core	m	400	R	R
E4.4		10mm ² x 4 core	m	100	R	R
E4.5		16mm ² x 4 core	m	-	R	Rate only
E4.6		25mm ² x 4 core	m	100	R	R
E4.7		35mm ² x 4 core	m	100	R	R
E4.8		50mm ² x 4 core	m	-	R	Rate only
E4.9		70mm ² x 4 core	m	-	R	Rate only
E4.10		95mm ² x 4 core	m	-	R	Rate only
E4.11		120mm ² x 4 core	m	-	R	Rate only
E4.12		150mm ² x 4 core	m	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E4.13		185mm ² x 4 core	m	-	R	Rate only
E4.14		240mm ² x 4 core	m	-	R	Rate only
E4.15		300mm ² x 4 core	m	-	R	Rate only
E4.16		400mm ² x 4 core	m	-	R	Rate only
E4.17		Cable terminations for Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore cables, complete, including gland shroud, lugs, number tags, etc and connection. 2.5mm ² x 4 core	No	8	R	R
E4.18		4.0mm ² x 4 core	No	8	R	R
E4.19		6mm ² x 4 core	No	8	R	R
E4.20		10mm ² x 4 core	No	2	R	R
E4.21		16mm ² x 4 core	No	-	R	Rate only
E4.22		25mm ² x 4 core	No	2	R	R
E4.23		35mm ² x 4 core	No	2	R	R
E4.24		50mm ² x 4 core	No	-	R	Rate only
E4.25		70mm ² x 4 core	No	-	R	Rate only
E4.26		95mm ² x 4 core	No	-	R	Rate only
E4.27		120mm ² x 4 core	No	-	R	Rate only
E4.28		150mm ² x 4 core	No	-	R	Rate only
E4.29		185mm ² x 4 core	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate	Amount
						R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		Cu/PVC Insulated/PVC Bedded/AWA/PVC Sheathed 600/1000V single core cable with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches.				
E4.30		150mm ² x 1 core	m	-	R	Rate only
E4.31		185mm ² x 1 core	m	-	R	Rate only
E4.32		240mm ² x 1 core	m	-	R	Rate only
E4.33		300mm ² x 1 core	m	-	R	Rate only
E4.34		400mm ² x 1 core	m	-	R	Rate only
E4.35		500mm ² x 1 core	m	-	R	Rate only
		Cable terminations for Cu/PVC Insulated/PVC Bedded/AWA/PVC Sheathed 600/1000V single core cables, complete, including gland shroud, lugs, number tags, etc and connection.				
E4.36		150mm ² x 1 core	No	-	R	Rate only
E4.37		185mm ² x 1 core	No	-	R	Rate only
E4.38		240mm ² x 1 core	No	-	R	Rate only
E4.39		300mm ² x 1 core	No	-	R	Rate only
E4.40		400mm ² x 1 core	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

THE CONTRACT
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Item No	Payment Ref	Description	Unit	Qty	Rate	c	Amount	R	c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE							R		
E4.41		500mm ² x 1 core Bare Copper Earth cable with stranded conductors.	No	-	R				Rate only
E4.42		2.5mm ²	m	100	R		R		
E4.43		4mm ²	m	100	R		R		
E4.44		6mm ²	m	100	R		R		
E4.45		10mm ²	m	-	R				Rate only
E4.46		16mm ²	m	-	R				Rate only
E4.47		25mm ²	m	100	R		R		
E4.48		35mm ²	m	-	R				Rate only
E4.49		50mm ²	m	-	R				Rate only
E4.50		70mm ²	m	-	R				Rate only
E4.51		95mm ²	m	-	R				Rate only
E4.52		120mm ²	m	-	R				Rate only
E4.56		150mm ²	m	-	R				Rate only
E4.55		120mm ²	m	-	R				Rate only
E4.56		150mm ²	m	-	R				Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE							R		

THE CONTRACT
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Item No	Payment Ref	Description	Unit	Qty	Rate		Amount	
					R	c	R	c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE							R	
E4.57		240mm ² Cable terminations for bare copper earth cables, complete, including gland shroud, lugs, number tags, etc and connection.	m	-	R			Rate only
E4.58		2.5mm ²	No	10	R		R	
E4.59		4mm ²	No	10	R		R	
E4.60		6mm ²	No	10	R		R	
E4.61		10mm ²	No	-	R			Rate only
E4.62		16mm ²	No	-	R			Rate only
E4.63		25mm ²	No	2	R		R	
E4.64		35mm ²	No	-	R			Rate only
E4.65		50mm ²	No	-	R			Rate only
E4.66		70mm ²	No	-	R			Rate only
E4.67		95mm ²	No	-	R			Rate only
E4.68		120mm ²	No	-	R			Rate only
E4.69		150mm ²	No	-	R			Rate only
E4.70		240mm ²	No	-	R			Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE							R	

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		Allow for all costs and expenses in connection with the Site installation of the following:				
		Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore cable with stranded conductors.	-			
E4.71		2.5mm ² x 4 core	m	100	R	R
E4.72		4.0mm ² x 4 core	m	100	R	R
E4.73		6mm ² x 4 core	m	400	R	R
E4.74		10mm ² x 4 core	m	100	R	R
E4.75		16mm ² x 4 core	m	-	R	Rate only
E4.76		25mm ² x 4 core	m	100	R	R
E4.77		35mm ² x 4 core	m	100	R	R
E4.78		50mm ² x 4 core	m	-	R	Rate only
E4.79		70mm ² x 4 core	m	-	R	Rate only
E4.80		95mm ² x 4 core	m	-	R	Rate only
E4.81		120mm ² x 4 core	m	-	R	Rate only
E4.82		150mm ² x 4 core	m	-	R	Rate only
E4.83		185mm ² x 4 core	m	-	R	Rate only
E4.84		240mm ² x 4 core	m	-	R	Rate only
E4.85		300mm ² x 4 core	m	-	R	Rate only
E4.86		400mm ² x 4 core	m	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E4.87		Cable terminations for Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore cables, complete, including gland shroud, lugs, number tags, etc and connection. 2.5mm ² x 4 core	No	8	R	R
E4.88		4.0mm ² x 4 core	No	8	R	R
E4.89		6mm ² x 4 core	No	8	R	R
E4.90		10mm ² x 4 core	No	2	R	R
E4.91		16mm ² x 4 core	No	-	R	Rate only
E4.92		25mm ² x 4 core	No	2	R	R
E4.93		35mm ² x 4 core	No	2	R	R
E4.94		50mm ² x 4 core	No	-	R	Rate only
E4.95		70mm ² x 4 core	No	-	R	Rate only
E4.96		95mm ² x 4 core	No	-	R	Rate only
E4.97		120mm ² x 4 core	No	-	R	Rate only
E4.98		150mm ² x 4 core	No	-	R	Rate only
E4.99		185mm ² x 4 core	No	-	R	Rate only
E4.100		240mm ² x 4 core	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Part C1: Agreement and Contract Data

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E4.101		300mm ² x 4 core	No	-	R	Rate only
E4.102		400mm ² x 4 core	No	-	R	Rate only
E4.103		Cu/PVC Insulated/PVC Bedded/AWA/PVC Sheathed 600/1000V single core cable with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches. 150mm ² x 1 core	m	-	R	Rate only
E4.104		185mm ² x 1 core	m	-	R	Rate only
E4.105		240mm ² x 1 core	m	-	R	Rate only
E4.106		300mm ² x 1 core	m	-	R	Rate only
E4.107		400mm ² x 1 core	m	-	R	Rate only
E4.108		500mm ² x 1 core	m	-	R	Rate only
E4.109		Cable terminations for Cu/PVC Insulated/PVC Bedded/AWA/PVC Sheathed 600/1000V single core cables, complete, including gland shroud, lugs, number tags, etc and connection. 150mm ² x 1 core	No	-	R	Rate only
E4.110		185mm ² x 1 core	No	-	R	Rate only
E4.111		240mm ² x 1 core	No	-	R	Rate only
E4.112		300mm ² x 1 core	No	-	R	Rate only
E4.113		400mm ² x 1 core	No	-	R	Rate only
E4.114		500mm ² x 1 core	No	-	R	Rate only
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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E4.115		2.5mm ²	m	100	R	R
E4.116		4mm ²	m	100	R	R
E4.117		6mm ²	m	100	R	R
E4.118		10mm ²	m	-	R	Rate only
E4.119		16mm ²	m	-	R	Rate only
E4.120		25mm ²	m	100	R	R
E4.121		35mm ²	m	-	R	Rate only
E4.122		50mm ²	m	-	R	Rate only
E4.123		70mm ²	m	-	R	Rate only
E4.124		95mm ²	m	-	R	Rate only
E4.125		120mm ²	m	-	R	Rate only
E4.126		150mm ²	m	-	R	Rate only
E4.127		240mm ²	m	-	R	Rate only
		Cable terminations for bare copper earth cables, complete, including gland shroud, lugs, number tags, etc and connection.				
E4.128		2.5mm ²	No	10	R	R
E4.129		4mm ²	No	10	R	R
E4.130		6mm ²	No	10	R	R
E4.131		10mm ²	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E4.132		16mm ²	No	-	R	Rate only
E4.133		25mm ²	No	2	R	R
E4.134		35mm ²	No	-	R	Rate only
E4.135		50mm ²	No	-	R	Rate only
E4.136		70mm ²	No	-	R	Rate only
E4.137		95mm ²	No	-	R	Rate only
E4.138		120mm ²	No	-	R	Rate only
E4.139		150mm ²	No	-	R	Rate only
E4.140		240mm ²	No	-	R	Rate only
E4.141		Allow for all costs and expenses in connection with the Site Delivery of items in this section	Sum	1	R	R
E4.142		Trenching and backfilling: Excavate and set excavated material aside for re-use as filling for cable or sleeve trench not exceeding 1m deep:				
		In earth	m3	135	R	R
		In soft rock	m3	55	R	R
		In rock	m3	15	R	R
		Bedding material imported from off-site sources (provisional)	m3	205	R	R
		Danger Tape 400mm overlapping	m	500	R	R
		Cable Marker with engraved steel plate	No	15	R	R
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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
E4.143		Cable Marker with engraved steel plate	No	15	R	R
E4.143		Provisional Sum for cable supports	Prov Sum	1	R 500,000.00	R 500,000.00
E4.144		All other items not included above, but which are nevertheless necessary to meet the Specification and/or required for the proper, safe and effective operation of the plant (Specify) 	Sum	1	R 50, 000.00	R 50, 000.00
TOTAL SECTION: E4 Carried to Summary						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
		SECTION: I1 Instrumentation, Control and Data Cables Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading and storage of the following materials and equipment: Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore control cables with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches.				
I1..1		2.5mm ² x 4 core	m	200	R	R
I1..2		2.5mm ² x 7 core	m	200	R	R
I1..3		1.5mm ² x 12 core	m	100	R	R
I1..4		1.5mm ² x 19 core	m	-	R	Rate only
I1..5		1.5mm ² x 24 core	m	-	R	Rate only
I1..6		1.5mm ² x 30 core	m	-	R	Rate only
I1..7		1.5mm ² x 37 core	m	-	R	Rate only
I1..8		CAT6 Cable	m	-	R	Rate only
I1..9		Armoured Multimode Fibre optic Cable (8C)	m	100	R	R
I1..10		Fieldbus Cables	m	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
I1..11		Cable terminations for multicore control cable complete, including gland shroud, lugs, number tags, etc and connection. 2.5mm ² x 4 core	No	16	R	R
I1..12		2.5mm ² x 7 core	No	16	R	R
I1..13		1.5mm ² x 12 core	No	8	R	R
I1..14		1.5mm ² x 19 core	No	-	R	Rate only
I1..15		1.5mm ² x 24 core	No	-	R	Rate only
I1..16		1.5mm ² x 30 core	No	-	R	Rate only
I1..17		1.5mm ² x 37 core	No	-	R	Rate only
I1..18		CAT6 Cable	No	-	R	Rate only
I1..19		Armoured Multimode Fibre optic Cable (8C) including splicing	No	4	R	R
I1..20		Fieldbus Cables	No	-	R	Rate only
I1..21		Extra low voltage instrumentation cable fixed to cable tray, drawn into sleeves or power skirting. 1.5mm ² 1-pair	m	100	R	R
I1..22		1.5mm ² 2-pair	m	100	R	R
I1..23		1.5mm ² 4-pair	m	-	R	Rate only
I1..24		1.5mm ² 12-pair	m	-	R	Rate only
I1..25		1.5mm ² 19-pair	m	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
I1..26		1.5mm ² 30-pair	m	-	R	Rate only
I1..27		1.5mm ² 1-triad	m	-	R	Rate only
I1..28		1.5mm ² 2-triad	m	-	R	Rate only
I1..29		Terminations for Extra low voltage instrumentation cable 1.5mm ² 1-pair	No	10	R	R
I1..30		1.5mm ² 2-pair	No	10	R	R
I1..31		1.5mm ² 4-pair	No	-	R	Rate only
I1..32		1.5mm ² 12-pair	No	-	R	Rate only
I1..33		1.5mm ² 19-pair	No	-	R	Rate only
I1..34		1.5mm ² 30-pair	No	-	R	Rate only
I1..35		1.5mm ² 1-triad	No	-	R	Rate only
I1..36		1.5mm ² 2-triad	No	-	R	Rate only
I1..37		Instrumentation Power cable Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches. 2.5mm ² x 3 core	m	-	R	Rate only
I1..38		2.5mm ² x 4 core	m	-	R	Rate only
		Terminations for Instrumentation Power cable Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore with stranded conductors.				
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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C1.3
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Contractor

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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM - PHASE C (RE-ADVERT)

Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
11..39		2.5mm ² x 3 core	No	-	R	Rate only
11..40		2.5mm ² x 4 core	No	-	R	Rate only
11..41		Allow for all costs and expenses in connection with the Site Delivery of items in this section	Sum	1	R	R
		Trenching and backfilling				
		Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore control cables with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches.				
11.42		2.5mm ² x 4 core	m	200	R	R
11.43		2.5mm ² x 7 core	m	200	R	R
11.44		1.5mm ² x 12 core	m	100	R	R
11.45		1.5mm ² x 19 core	m	-	R	Rate only
11.46		1.5mm ² x 24 core	m	-	R	Rate only
11.47		1.5mm ² x 30 core	m	-	R	Rate only
11.48		1.5mm ² x 37 core	m	-	R	Rate only
11.49		CAT6 Cable	m	-	R	Rate only
11.50		Armoured Multimode Fibre optic Cable (8C)	m	100	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
I1.51		Fieldbus Cables Cable terminations for multicore control cable complete, including gland shroud, lugs, number tags, etc and connection.	m	-	R	Rate only
I1.52		2.5mm ² x 4 core	No	16	R	R
I1.53		2.5mm ² x 7 core	No	16	R	R
I1.54		1.5mm ² x 12 core	No	8	R	R
I1.55		1.5mm ² x 19 core	No	-	R	Rate only
I1.56		1.5mm ² x 24 core	No	-	R	Rate only
I1.57		1.5mm ² x 30 core	No	-	R	Rate only
I1.58		1.5mm ² x 37 core	No	-	R	Rate only
I1.59		CAT6 Cable	No	-	R	Rate only
I1.60		Armoured Multimode Fibre optic Cable (8C) including splicing	No	4	R	R
I1.61		Fieldbus Cables Extra low voltage instrumentation cable fixed to cable tray, drawn into sleeves or power skirting.	No	-		Rate only
I1.62		1.5mm ² 1-pair	m	100	R	R
I1.63		1.5mm ² 2-pair	m	100	R	R
I1.64		1.5mm ² 4-pair	m	-	R	Rate only
I1.65		1.5mm ² 12-pair	m	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
I1.66		1.5mm ² 19-pair	m	-	R	Rate only
I1.67		1.5mm ² 30-pair	m	-	R	Rate only
I1.68		1.5mm ² 1-triad	m	-	R	Rate only
I1.69		1.5mm ² 2-triad	m	-	R	Rate only
I1.70		Terminations for Extra low voltage instrumentation cable 1.5mm ² 1-pair	No	10	R	R
I1.71		1.5mm ² 2-pair	No	10	R	R
I1.72		1.5mm ² 4-pair	No	-	R	Rate only
I1.73		1.5mm ² 12-pair	No	-	R	Rate only
I1.74		1.5mm ² 19-pair	No	-	R	Rate only
I1.75		1.5mm ² 30-pair	No	-	R	Rate only
I1.76		1.5mm ² 1-triad	No	-	R	Rate only
I1.77		1.5mm ² 2-triad Terminations for Extra low voltage instrumentation cable	No	-	R	Rate only
I1.70		1.5mm ² 1-pair	No	10	R	R
I1.71		1.5mm ² 2-pair	No	10	R	R
I1.72		1.5mm ² 4-pair	No	-	R	Rate only
I1.73		1.5mm ² 12-pair	No	-	R	Rate only
I1.74		1.5mm ² 19-pair	No	-	R	Rate only
I1.75		1.5mm ² 30-pair	No	-	R	Rate only
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
11.76		1.5mm ² 1-triad	No	-	R	Rate only
11.77		1.5mm ² 2-triad	No	-	R	Rate only
		Instrumentation Power cable Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches.				
11.78		2.5mm ² x 3 core	m	-	R	Rate only
11.79		2.5mm ² x 4 core	m	-	R	Rate only
		Terminations for Instrumentation Power cable Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V multicore with stranded conductors.				
11.80		2.5mm ² x 3 core	No	-		Rate only
11.81		2.5mm ² x 4 core	No	-	R	Rate only
11.82		Allow for all costs and expenses in connection with the Site Delivery of items in this section	Sum	1	R	R
		All other items not included above, but which are nevertheless necessary to meet the Specification and/or required for the proper, safe and effective operation of the plant (<i>Specify</i>)				
				R	R
				R	R
				R	R
TOTAL SECTION: I1: Carried to Summary						R

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate	Amount
					R	R
		SECTION: I2				
		Remote I/O				
		RAS Pump Station Remote IO				
I2..1		Supply	Sum	1	R	R
I2..2		Install	Sum	1	R	R
I2..3		Testing and Commissioning	Sum	1	R	R
I2..4		Allow for all costs and expenses in connection with the Site Delivery of items in this section	Sum	1	R	R
I2..5		All other items not included above, but which are nevertheless necessary to meet the Specification and/or required for the proper, safe and effective operation of the plant <i>(Specify)</i>	Sum	1	R50,000.00	R50,000.00
TOTAL SECTION: I2: Carried to Summary						R

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Part C1: Agreement and Contract Data

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate		Amount		
					R	c	R	c	
		SECTION: I3 Industrial Network							
		Functional Design Specification							
I3..1		Compile control system FDS as per specifications. Allow for 5 iterations	Sum	1	R		R		
I3..2		Allow for all costs and expenses in connection with the Site Delivery of items in this section	Sum	1	R		R		
I3..3		All other items not included above, but which are nevertheless necessary to meet the Specification and/or required for the proper, safe and effective operation of the plant <i>(Specify)</i>	-						
			Sum	1	R	50,000.00		R 50,000.00	
TOTAL SECTION: I3 Carried to Summary								R	

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Part C1: Agreement and Contract Data

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate R c	Amount R c
		SECTION: I4 Instrumentation Allow for all the costs and expenses in connection with the design, manufacture, painting, supplying, delivery, offloading and storage of the following materials and equipment: Referred to as "Supply" in this schedule Allow for all costs and expenses in connection with the Site installation in terms of in terms of FIDIC and Part C3: Scope of Work (excluding pre-commissioning) for the following: Referred to as "Install" in this schedule Dissolved Oxygen Meter complete.				
I4..1		Supply	No	1	R	R
I4..2		Install	No	1	R	R
		pH Meter complete, integrated with Electrical Conductivity				
I4..3		Supply	No	1	R	R
I4..4		Install	No	1	R	R
		Free Chlorine Meter complete.				
I4..5		Supply	No	1	R	R
I4..6		Install	No	1	R	R
TOTAL CARRIED FORWARD TO NEXT PAGE						R

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Part C1: Agreement and Contract Data

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Item No	Payment Ref	Description	Unit	Qty	Rate R c	Amount R c
TOTAL CARRIED FORWARD FROM PREVIOUS PAGE						R
		Suspended Solids Meter complete.				
I4..7		Supply	No	1	R	R
I4..8		Install	No	1	R	R
		No Flow switch complete.				
I4..9		Supply	No	2	R	R
I4..10		Install	No	2	R	R
I4..11		All other items not included above, but which are nevertheless necessary to meet the Specification and/or required for the proper, safe and effective operation of the plant <i>(Specify)</i>	Sum	1	R 20,000.00	R20,000.00
TOTAL SECTION: I4 Carried to Summary						R

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Item No	Payment Clause	Short Description	Unit	Quantity	Rate		Amount	
					R	c	R	c
21.		SECTION 36: DAYWORKS (Contingencies) According to the Preamble to the Daywork Schedule:						
21.1		LABOUR						
		a) Artisan	h	1	R			Rate only
		b) Charge-hand Artisan	h	1	R			Rate only
		c) Skilled labourer	h	1	R			Rate only
		d) Unskilled labourer	h	1	R			Rate only
		e) Watching, etc. necessitated by day work (workmen only)	h	1	R			Rate only
21.2		PLANT						
		a) Crawler Tractor: 100 kW to 120 kW	h	1	R			Rate only
		b) Front-end Loader, pneumatic tyred or crawler type: Min. 60 kw	h	1	R			Rate only
		c) Flat bed truck 5T	h	1	R			Rate only
		d) Trench Excavator, pneumatic tyred or crawler type:						
		(i) Min. 60 kw	h	1	R			Rate only
		(ii) Min. 200 kw	h	1	R			Rate only
		e) Mobile crane: min 10 t	h	1	R			Rate only
		f) Tip Truck						
		(i) Min. 5 m3	h	1	R			Rate only
		(ii) Min. 10 m3	h	1	R			Rate only

THE CONTRACT
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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM - PHASE C (RE-ADVERT)

21.3	g) Compactor, vibrating plate type: Min. 100 kg	h	1	R	Rate only
	h) Pump for dewatering, nom. 75 mm to 100 mm:				
	(i) Centrifugal	h	30	R	Rate only
	(ii) Submersible	h	1	R	Rate only
	(iii) Well-point pump	h	1	R	Rate only
	i) Diesel generator: 15 to 20 kVA, 380V	h	1	R	Rate only
	HAND TOOLS : (Tenderer must complete rate and quantity)				
	a) Wheelbarrow	Day	1	R	Rate only
	b) Shovels	Day	1	R	Rate only
	c) Picks	Day	1	R	Rate only
	d) Rakes	Day	1	R	Rate only
	e) Handtampers	Day	1	R	Rate only
21.4	Mark up on materials for dayworks	%			Rate only

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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM - PHASE C (RE-ADVERT)

SUMMARY OF SECTIONS BROUGHT FORWARD FROM SECTION TOTALS

Section no	Description	Amount in Rand
1	SECTION 1: PRELIMINARY AND GENERAL	R
2	SECTION 2: NEW DISTRIBUTION BOX	R
3	SECTION 3: CLARIFIER/SECONDARY SETTLING TANK	R
4	SECTION 4: ANAEROBIC ZONE REACTOR	R
5	SECTION 5 : INTERCONNECTING PIPEWORK	R
SUB-TOTAL 1: CIVIL WORKS		R
6	SECTION 6: MIXERS (STIRRERS)	R
7	SECTION 7: SURFACE AERATORS	R
8	SECTION 8: CLARIFIER ROTATING BRIDGES	R
9	SECTION 9: PUMPS AND ASSOCIATED PIPEWORK	R
10	SECTION 10: WEIRS AND PENSTOCKS	R
11	SECTION 11: TRAINING OF PROCESS CONTROLLERS	R
12	SECTION 12: MISCELLANEOUS ITEMS	R
SUB-TOTAL 2: MECHANICAL WORKS		R
E1	LV SWITCHGEAR AND CONTROL ASSEMBLIES	R
E2	AREA LIGHTING	R
E3	CABLE SUPPORTS	R
E4	LV CABLES	R
SUB-TOTAL 3: ELECTRICAL WORKS		R
I1	INSTRUMENTATION, CONTROL AND DATA CABLES	R
I2	REMOTE I/O	R
I3	FUNCTIONAL DESIGN SPECIFICATION	R
I4	INSTRUMENTATION	R
SUB-TOTAL 4: INSTRUMENTATION		R
TOTAL 1 (SUB TOTAL 1 + SUB TOTAL 2 + SUB TOTAL 3+ SUB TOTAL 4)		R
10% CONTIGENCIES		R
TOTAL 2 (Total 1 + Contingencies)		R
VAT (15%)		R
GRAND TOTAL (VAT INCL) CARRIED TO THE FORM OF OFFER		R

THE CONTRACT
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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM - PHASE C (RE-ADVERT)

CONTRACT PART C3: SCOPE OF WORKS/ SPECIFICATIONS

C3.2 PROJECT SPECIFICATIONS

PART A	GENERAL
PS-1	Project description
PS-2	Description of the site and access
PS-3	Details of the works
PS-4	Construction management requirements
PS-5	Site facilities available
PS-6	Facilities required on site
PS-7	Features of the contract requiring special attention
PS-8	Rainfall figures
PS-9	Security clearance of personnel
PS-10	Safety
PS-11	Subcontractors
PS-12	Deviation from construction programme
PS-13	Delay in completion
PS-14	Supply of materials
PS-15	Execution of works
PS-16	Information that will be provided by the municipality
PS-17	Key performance indicators
PS-18	Payments
PS-19	Period of tender
PS-20	Accept of offer
PS-21	Evaluation
PS-22	Validity period
PS-23	Estimate timeframes

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Part C1: Agreement and Contract Data

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APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM - PHASE C (RE-ADVERT)

PART B VARIATIONS, AMENDMENTS & ADDITIONS TO THE STANDARD SPECIFICATIONS

C3.3 MECHANICAL AND ELECTRICAL ENGINEERING

C3.4 PROCUREMENT

C3.5 CONSTRUCTION MANAGEMENT

C3.6 PARTICULAR SPECIFICATIONS

PB: Building Work
PO: Occupational health and safety specifications

C3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are the South African National Standards(SANS) 1200 Volumes 1 & 2. For the purpose of this Contract the latest issues of the following Standard Specifications for Civil Engineering Construction, applicable at the date of tender advertisement, shall apply:

SANS NO.	SECTION NAME
SANS (previously SABS) 1200 A	: General
SANS (previously SABS) 1200 AB	: Engineer's Office
SANS (previously SABS) 1200 C	: Site Clearance (Amendment 1, 1982)
SANS (previously SABS) 1200 D	: Earthworks (Amendment 1, 1990)
SANS (previously SABS) 1200 DB	: Earthworks (Pipe Trenches)
SANS (previously SABS) 1200 DM	: Earthworks (Roads, Subgrade)
SANS (previously SABS) 1200 G	: Concrete (Structural)

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SANS (previously SABS) 1200 HA	:	Structural Steelwork (Sundry Items)
SANS (previously SABS) 1200 L	:	Medium-Pressure Pipelines
SANS (previously SABS) 1200 LB	:	Bedding (Pipes)
SANS (previously SABS) 1200 LC	:	Cable Ducts
SANS (previously SABS) 1200 LD	:	Sewers
SANS (previously SABS) 1200 LE	:	Stormwater Drainage
SANS (previously SABS) 1200 M	:	Roads (General)
SANS (previously SABS) 1200 ME	:	Subbase
SANS (previously SABS) 1200 MF	:	Base
SANS (previously SABS) 1200 MG	:	Bituminous Surface Treatment
SANS (previously SABS) 1200 MJ	:	Segmented Paving
SANS (previously SABS) 1200 MK	:	Kerbing and Channelling
SANS (previously SABS) 1200 MM	:	Ancillary Roadworks

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C3.2 PROJECT SPECIFICATIONS

STATUS

The project specification, consisting of two parts and 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 and detailed specifications.

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 with the engineer before the execution of the work under the relevant item.

The standard specifications which form part of this contract have been written to cover all phases of work normally required for road contracts, and they may therefore cover items not applicable to this particular contract.

THE CONTRACT Part C1: Agreement and Contract Data

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C1.3 Contract Data

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PART A: GENERAL

PS1 PROJECT DESCRIPTION

APPOINTMENT OF A CONTRACTOR FOR THE UPGRADING OF LETHABONG WASTEWATER TREATMENT WORKS AND INSTALLATION OF SEWER RETICULATION SYSTEM - PHASE C

PS2 DESCRIPTION OF THE SITE AND ACCESS

2.1 Location of site

The site is situated at the existing Lethabong Wastewater Treatment Works and is shown on the locality plan in Part C4-Site Information. Access to the site is via the R510 from Rustenburg, through Lethabong and onto an existing gravel track of about 300m to the Lethabong WWTW.

2.2 Access to site

No additional payment shall be made for the use of temporary haul roads and all relevant costs shall be deemed to be covered by the appropriate rates.

The Contractor must note that no additional payment will be made for the construction of temporary access roads to the construction site, borrow areas or to the spoil sites, except for payment made under payment item A 8.3.2.2 of SABS 1200 A.

2.3 Existing/Known services

The positions of existing services, insofar as they are known, are shown on the drawings. Items have been allowed in the Bills of Quantities for dealing with and protecting services.

The Contractor shall take whatever precautions necessary to protect these services from damage during the period of the Contract. Notice must be served within 4 hours to the Engineer or Employer as and when any services are incidentally damaged.

**THE CONTRACT
Part C1: Agreement and Contract Data**

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**C1.3
Contact Data**

Employer

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Witness 2

Contractor

Witness 1

Witness 2

PS3 DETAILS OF THE WORKS

3.1 Description of works

The contract comprises the civil engineering construction of concrete water retaining structures, building works, interconnecting pipework, general site works, and the installation of mechanical and electrical equipment.

All arrangements regarding security and access to site shall be covered by the Contractor under this contract and all cost associated with liaising, accommodation, providing facilities and co-ordination shall be deemed to be covered by the rates under this contract.

Work included in this contract entails the construction of various concrete, water retaining structures, pipe work, electrical and mechanical equipment installation, limited mechanical equipment design, site works, minor road works and tie-in with existing facilities. The main works are as listed below:

- a) Site clearance and excavations
- b) Construction of a new biological reactor (anaerobic zone)
- c) Interconnecting pipework, manholes and boxes
- d) 4 off vertical shaft mixers;
- e) 1 off return activated sludge pumps;
- f) knife-gate valve;
- g) 1 off 19 m final clarifier with mechanical equipment;
- h) Adjustable weirs, sluice gates and handstops;
- i) Flow meters, online water quality monitoring equipment and ancillary equipment for controlling waste

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sludge;

- j) Electrical switchboards, switchgear and cables, including electrical cable reticulation on site;
- k) Grouting in of pipes through walls, grout base plates of mechanical equipment to concrete plinths.
- l) Area lighting

Construction methods must be such that no property or life is endangered. The Employer accepts no responsibility for work that is done outside the site boundaries without the Employer's Agent's approval.

All excavations, bedding and back filling for cable and pipe trenches done in this contract, no additional payment for re-programming of the works and/or any delays that may be caused by bad co-ordination, unless otherwise agreed by the Employer's Agent.

As indicated in Clause 21 of the General Conditions of Contract (2015), the Contractor shall afford reasonable facilities to other Contractors. Contracts covering the supply and installation of plant will be executed concurrently with this contract and the Contractor will be required to afford reasonable facilities to Contractors and also to carry out certain work in connection with the installation of plant and pipe work. Provision has been made in the Schedule of Quantities for such work, insofar as it can be foreseen.

Sufficient photos of existing structures and areas that have to be crossed must be taken by the Contractor and handed over to the Employer's Agent before such operations commence. No payment will be made in this regard and it shall be deemed to be covered in the preliminary and general items.

The Contractor must program his work in such a way that no construction is to be done during the Christmas holiday season and Easter weekend as set out in the Contract Data.

The compilation of the construction program and any amendments thereto during the course of construction shall be at the cost of the Contractor and shall not be measured elsewhere in this contract.

The sequence of work must be executed in such a way that **the existing works remain in operation throughout the duration of the contract with the exception of a few hours allowed for main break-ins or tie-ins.** The contractor must take into account when programming the work, the sequence within which various structures have to be constructed.

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The first action to be completed before any excavation on site commences is the locating existing services on site.

All the major and vital civil structures and pipework must be completed before mechanical installation commences. Existing infrastructure shall be sufficiently protected from damage related to construction work.

3.2 **Nature of stratum on site**

Will be provided to the winning bidder.

3.3 **Construction in confined areas**

It may be necessary for the contractor to work within confined areas. Except where provided for in the specifications, no additional payment shall be made for work done in restricted areas. In certain places excavation, construction and filling works will have to be performed in a small ($\pm 1,0$ m width) working space. The method of construction in these confined areas largely depends on the contractor's constructional plant. The contractor shall note that, unless provided for in terms of the scheduled payment items of the project specifications, measurement and payment shall be in accordance with the specified excavation, construction and filling works, irrespective of the method used for achieving these cross-sections and dimensions, and that the tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered when working in confined areas and narrow widths, and at or around obstructions, and that no extra payment shall be made nor shall any claim for additional payment be considered in such cases. This will also apply to over break during any excavation.

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PS4 CONSTRUCTION PROGRAMME

PS 4.1 General

The submission of a construction programme as stated per clause 5.3.1 of the general conditions of contract is compulsory.

Before any work is to be commenced on the site (within a period as stated in clause 5.12.5 of the general conditions of contract), the contractor must submit a detailed project programme for the construction of the works to the engineer for his approval.

In preparation of the construction programme the contractor must liaise with the engineer and the programme must take into account the coordination of all activities. The programme must consist of a detailed schedule or block diagram covering all aspects of the works and the planned time thereof must, with the contract period as time basis, be shown.

Rainfall conditions will be taken as abnormal when the average rainfall, as shown in clause PS 8, is exceeded and the contractor must then apply in writing for extension of the contract period using clause 6.11 of the special conditions of contract.

The contractor shall submit to the engineer a realistic, detailed programme not later than 14 days after receipt of the letter of acceptance. The programme shall be in bar-chart format showing in detail how the contractor proposes to complete the work covered by this contract by the due completion date. The following details must be stated:

- i) The quantity of work applicable to each bar item as well as the rate at which the work will be completed.
- ii) A budget of the value of completed work, month by month, for the full contract period.
- iii) The contractor's plant commitment on the contract for every fortnight.
- iv) The critical path.

The programme shall be kept up to date. If a contractor fails to maintain progress in terms of the programme, he shall produce a revised programme showing the modifications to the original programme necessary to ensure completion of the works before the due completion date.

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The approval of any programme by the engineer shall have no contractual significance, other than satisfying the engineer that the work is carried out according to such programme and that the contractor undertakes to carry out the work in accordance with the programme. The engineer will have the right to instruct the contractor to revise the programme if necessitated by circumstances.

PS 4.2 Time for completion

The maximum time allowed for the completion will be indicated on the allocation letter of the appointed bidders.

PS 5 SITE FACILITIES AVAILABLE

PS 5.1 Water supply

Fresh water will be available for domestic and construction purposes, but the contractor must make arrangements with the project manager for extraction points. Furthermore the contractor shall supply all necessary materials for the water connection at a position pointed out by the engineer / council representative. Water used by the Contractor from the Employer's mains will be charged for at the tariffs ruling of the time of use, and the Contractor shall include for the payment of water used for construction purposes in his tendered rates. The availability of water cannot be guaranteed by the municipality and in the event of water no longer being freely available, the contractor must make his own arrangements to acquire it. No additional costs incurred by the Contractor as a result of water shortage shall be accepted by the Municipality. **It should be noted that no contractor shall be permitted to draw water from Municipal fire hydrants.**

The Contractor shall take note that no direct payment will be made for any costs incurred for the provision of any additional water supply points nor for the cost of water used from it. The rates tendered for the relevant items in the preliminary and general section of the schedule shall include all costs for the establishment and maintenance of water supply to the works and the contractor shall make his own arrangements for the possible conveyance and storage of water if necessary. The contractor will be held responsible for any wastage of water due to negligence.

PS 5.2 Power supply

The Contractor shall be allowed to make use of the 400 V electrical supply point on site for all electricity needs during construction.

Electrical power cannot be guaranteed by the municipality. During power failures and shortages, the contractor must make his own arrangements for the provision of electricity.

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Electricity used by the Contractor shall be charged for at the tariffs ruling at the time.

The Employer accepts no responsibility for any power failure due to load shedding or any other cause whatsoever, nor additional costs incurred by the Contractor as a result of such failures.

The Contractor shall take note that no direct payment will be made for any costs incurred for the provision of any additional electrical supply points nor for the cost of electricity used. Payment for the aforementioned shall be deemed to be covered by the rates and prices tendered and paid for the various items of work included under the Contract.

PS 5.2 Location of Camp and Materials Storage Area

The camp site and storage area will be indicated to tenderers at the site inspection following the compulsory clarification meeting.

The Contractor shall confine his camp and storage of materials to the areas designated. On completion of the construction works the surface of the areas utilised shall be re-instated to their original condition.

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PS 6 FACILITIES REQUIRED ON SITE

PS 6.1 Facilities for the engineer

A site office for the engineer is required.

PS 6.2 Facilities for the contractor

The following facilities are required on the site for the contractor in addition to the facilities required by the contractor for his own purposes:

Ablution and sanitary facilities

The contractor shall erect and maintain on the site proper ablation facilities. The contractor shall service and maintain the facilities in a clean and hygienic state for the duration of the contract period and on completion of the works it from the site. The Contractor shall supply chemical toilets for use by his workmen. The number of toilets shall be based on one toilet per fifteen (15) personnel on site.

The Contractor's staff will use the chemical toilet facilities at all times.

Site Establishment

The engineer in consultation with council shall indicate the location for the site office before the contractor establishes site.

PS 6.3 Laboratory facilities

The contractor shall furnish test results to both the Employer and the Engineer as part of his quality control on site. Payment shall be deemed to be covered under the tendered rates. SANAS Accredited Laboratory to be used.

PS 6.4 Municipal name board

2 official name boards, as per C4.2 site information: construction notice board, are required for this contract.

PS 6.5 Housing for the engineer and/or his representative

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Housing is required for the engineer or his representative. Payment for these services shall be through the payment items provided.

PS 6.6 Housing for the contractor and/or his representative

No housing is available for the contractor's employees, and the Contractor shall make his own arrangements for housing his employees or transporting them to and from the site. The Contractor is in all respects responsible for the housing and transporting of his employees and for the arrangement thereof, and no extension of time due to any delays resulting from this will be granted.

PS 6.7 Telephone Facilities

Telephone facilities are not needed on the site. The contractor's representative on site shall at all times be reachable by cell phone.

PS 6.8 Rail facilities

The nearest rail siding is Rustenburg Railway Station.

PS 6.8 Permits and Way Leaves

Wayleave for working close to or in the proximity of any existing services shall be applied for by the Contractor.

PS 6.9 Survey Control and Setting Out of the Works

Survey pegs will be indicated to the Contractor. The Contractor shall be solely responsible for the protection of the survey pegs. The Contractor's attention is specifically drawn to the requirements of Clause PSA 5.1.1.

PS 6.10 Alterations, Additions, Extensions and Modifications to Existing Works

The Contractor must confirm in writing to the Employer's Agent within 14 days after the site has been handed over to him, that the accuracy of all levels, dimensions and volumes of existing structures or components thereof are compatible with the proposed works.

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PS 6.11 Water for Construction Purposes

Water supply for construction purposes is available on site. The Contractor shall install a water meter at the water supply point before any construction activities commence in order to measure all water used on site during this contract.

The cost of installing the water meter shall not be paid for by the Employer but shall be deemed to be covered by the tendered rates.

No extension of time due to delays resulting from installation of the water meter shall be granted.

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PS 7 FEATURES OF THE CONTRACT REQUIRING SPECIAL ATTENTION

The Engineer or Employer shall not be responsible or liable for any losses or damages incurred by the contractor irrespective if it is due to the execution of work as per specifications or as directed in writing or verbally by the Employer or Engineer.

PS 7.1 Safety regulations

Both the "Factories, Machinery and Building Work Act (Act 22 of 1941) and the "Machinery and Occupational Safety Act (Act 6 of 1983)" must, wherever they appear in the SABS 1200 standardised specifications, be substituted by the "Occupational Health and Safety Act (Act 85 of 1993)".

The Contractor shall apply suitable proven methods for construction complying with the OHS Act so that his activities will not constitute a hazard to his work force, the public or any adjacent property. All excavations shall be suitable safeguarded and barricaded especially during night-time, weekends or holidays and any other day of inactivity by the Contractor. The Contractor shall also ensure that excavations are shored or otherwise made safe. The camp and construction site will be locked after hours to ensure the safety of the public. No additional payment will be made to the Contractor for complying with these requirements.

PS 7.2 "As-Built" drawings or Record Drawings

As the work progresses, the Contractor shall keep full records of all amendments to and deviations from the drawings as issued to the Contractor at the start of the contract. The Contractor must submit this information monthly with his payment certificate to the Employer's Agent. The true positions, invert levels and ground levels of all services shall be indicated on the drawings, for which purpose the Contractor shall receive a separate complete set of drawings from the Employer's Agent at no cost. The actual position and depth of any future connections, as well as any previously unknown existing services shall also be provided.

The completion certificate shall only be issued after the Employer's Agent has received a properly completed set of "As Built" drawings from the Contractor. No separate payment shall be made for this service as all costs related thereto shall be deemed to be included in the relevant items.

PS 7.3 "As-Built" drawings or Record Drawings

Progressive and systematic finishing and tidying will form an essential part of this contract. Under no circumstances shall spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate unnecessarily and in the

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event of this occurring the Employer's Agent shall have the right to withhold payment for as long as necessary in respect of the relevant works in the area(s) concerned.

PS 8 RAINFALL FIGURES

The following figures are applicable for clause 5.12.5 of the special conditions of contract:

The rainfall records applicable to this Contract are those recorded at Weather Station Rustenburg ARG 0511/5234. The following values of Nn and Rn shall apply:

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MONTH	Nn	Rn
Month	Rn (mm)	Nn (days)
January	130.1	4
February	94.2	3
March	75.1	2
April	60.3	2
May	9.8	0
June	5.9	0
July	1.6	0
August	7.2	0
September	18.8	0
October	57.5	2
November	89.4	3
December	105.8	3
Total	655.7	19

Nn = Average amount of days on which a rainfall of 10 mm or more has been recorded
Rn = Average monthly rainfall in mm

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PS 9 SECURITY CLEARANCES OF PERSONNEL

Tenderers to note that the Rustenburg Local Municipality may require that security clearance investigations be conducted on any number of the tenderer's personnel.

If so required, by the Rustenburg Local Municipality, the tenderer must remove personnel as indicated immediately and ensure that they have no access to the works or documentation or any other information pertaining to the site.

The Employer shall not be liable for any cost concerning the removal of personnel or the effect thereof on the execution of the work.

PS 10 SAFETY

PS10.1 Safety of workmen

The safe conduct of the works shall be a primary consideration and the entire works shall be carried out in conformity with all applicable statutory regulations and requirements and tenderers must price their tenders accordingly.

The contractor shall provide and maintain in readiness on the site, all equipment, and materials necessary to render first aid in case of accidents or other emergencies. The contractor shall also assign to the works and designate for this purpose, trained employees who are able to render first aid.

PS10.2 Health and safety requirements

It is a requirement of this contract that the contractor shall provide a safe 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 conform to all the stipulations of the Occupational Health and Safety Act (Act 85 of 1993) and the regulations applicable at the time of tender, which inter alia provide for the designation of a health and safety representative (or representatives) when an employer has more than 20 employees in his employ.

PS 11 SUB-CONTRACTORS

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The employer shall have the right to cede any sub-contract under this contract to a pre-approved subcontractor, in accordance with the provisions of clause 9 of the general conditions of contract. A percentage of 30% made up of locally sourced material and local emerging subcontractors shall be subcontracted.

PS 12 DEVIATION FROM CONSTRUCTION PROGRAMME

The programme of work as required in terms of the “General Conditions of Contract –Second Edition (2015)” shall be submitted to the engineer not later than fourteen days after the commencement date.

The contractor shall take into account the requirements of the Occupational Health and Safety Act, as well as the construction regulations in the drafting of the programme.

The format shall not be in the form of a bar chart only, but shall also clearly indicate the anticipated quantity of work to be executed each month. The construction programme shall also clearly indicate the local and foreign labour to be utilised for the duration of the Contract.

If during the progress of the work, the quantities of the work performed per month fall below the expected indicated in the construction programme, or if the sequence of operation is altered, or if the programme is deviated from in any other way, the contractor shall, within one week after being notified by the engineer, submit a revised construction programme.

Such a revised construction programme shall be based on the tempo of work achieved by the contractor up to the date of revision. Any proposal to increase the tempo of work must be accompanied by positive steps to increase production by providing more labour and plant on site or by using the available labour and plant in a more efficient manner.

Failure on the part of the contractor to work according to the programme or revised programmes shall be sufficient reason for the Engineer to take steps as provided for in the “General Conditions of Contract –Second Edition (2015)”.

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PS 13 DELAY IN COMPLETION

The contractor shall organise the works in such a manner that no delays occur. Delay due to faulty organisation or lack or shortage of materials or labour or co-operation with other parties or to any other cause within the control of the contractor will not be countenanced and full power is reserved by the engineer to order the contractor to expedite the work should the work, in the opinion of the engineer, not progress in a satisfactory way.

PS 14 SUPPLY OF MATERIALS

All material to be used in the works is to be supplied by the contractor.

The contractor shall ensure that the work is not delayed due to the lack of materials on site, by placing orders for material required under this contract as soon as possible. No extension of time will be allowed for any delay due to the supply of materials.

Although the quantities have been carefully calculated, it must be considered as approximate only and the contractor, before ordering any materials, should check the quantities required. The bill of quantities is provisional.

PS 15 EXECUTION OF THE WORKS

PS 15.1 Inspection by the engineer

No portion of the work shall be proceeded with until the engineer or his representative has examined and approved the previous stage. If any work is covered or hidden from view before the engineer or his representative has inspected the work, the contractor shall at his own cost expose the covered or hidden work for inspection. The contractor shall also be responsible for making good any work damaged during the uncovering.

PS 15.2 Site instruction book

A triplicate book for site instructions shall be supplied free of charge by the Contractor and shall at all times be kept on the Site and accessible to the Employer's Agent during normal working hours. At the end of the Contract the Contractor shall hand the site instruction book to the Employer's Agent.

PS 15.3 Interruption of existing services

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The known services are indicated on the drawings, but it remains the responsibility of the Contractor to detect and protect the existing services. The Contractor must liaise with all services owners before any excavation begins.

The existing Lethabong Wastewater Treatment Works is to remain operational at all times throughout the duration of this contract.

PS 15.3 Work considered to be labour based (labour intensive)

The following components of work must be executed using labour-based construction methods.

1. Excavation in soft material for cable trenches.
2. Preparation of bedding and blanket.
3. Laying and jointing of all pipes with a nominal diameter of 355 mm or less.
4. Backfilling of all trenches with compaction excluded.
5. Locating of existing services
6. Mixing, placing and finishing of concrete for small concrete works.
7. Building work including bricklaying, plastering and painting, etc.
8. All cleaning and finishing off.

PS 15.5 Certificate of completion

When all the work under the contract have been completed to the entire satisfaction of the engineer, he will issue a certificate of completion to the contractor informing the contractor of the date the date at which the works are deemed to be completed and accepted by the employer.

The sureties provided by the contractor for the fulfilment and completion of the contract in terms of the form of agreement will be released upon the issue of the certificate of completion.

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PS 16 INFORMATION THAT WILL BE PROVIDED BY THE MUNICIPALITY

To be made available on compulsory site briefing

(Indicate information which will be supplied by the municipality)

PS 17 KEY PERFORMANCE INDICATORS

The following Key Performance Indicators will be used to assess the performance of the service provider:

17.1 Monthly reports indicating the progress on site shall be submitted at every technical or special meetings arranged by council;

17.2 EPWP job creation reports)

PS 18 PAYMENTS

Payment will be in accordance with the tendered pricing schedule in relation to the value of work done at that particular timeframe. All prices should be inclusive of VAT. A valid tax invoice must be submitted by the 25 of each month with all mandatory information and reporting as indicated in the scope of work.

Payment will be made within 30 working days from receipt of invoice by the finance department.

PS 19 PERIOD OF TENDER/CONSTRUCTION

The period of tender is 12 months

PS20 ACCEPTANCE OF OFFER

The municipality reserves the right not to award the tender or any part of the tender subject to the availability of budgetary funds.

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PS 21 EVALUATION

Tenders will be evaluated on functionality first. Only tenders who receive the minimum eligible points will be further evaluated on price and preference points.

PS 22 VALIDITY PERIOD

The tender shall be valid for 90 days from date of opening the tender.

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PART B VARIATIONS, AMENDMENTS & ADDITIONS TO THE STANDARD SPECIFICATIONS

The term “project specifications” appearing in any of the SANS (*previously SABS*) 1200 standardised specifications must be replaced with the term “scope of work”.

The variations and additions to the specifications listed in C3.4.1.2(a) are as follows:

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PS A	:	General	C3.18 - C3.23
PS AB	:	Employer's Agent's Office	C3.24 - C3.25
PS C	:	Site Clearance (Amendment 1, 1982)	C3.26 - C3.27
PS D	:	Earthworks (Amendment 1, 1990)	.....	C3.28 - C3.34
PS DB	:	Earthworks (Pipe Trenches)	.....	C3.35 - C3.38
PS DE	:	Earthworks (Small Earth Dams)	.....	C3.39
PS DM	:	Earthworks (Roads, Subgrade)	.....	C3.40 - C3.41
PS G	:	Concrete (Structural)	C3.42 - C3.50	
PS HA	:	Structural Steelwork (Sundry Items)	.....	C3.51
PS L	:	Medium-Pressure Pipelines	.....	C3.52 - C3.53
PS LB:		Bedding (Pipes)	C3.54 - C3.56	
PS LC	:	Cable Ducts	C3.57 - C3.58
PS LD	:	Sewers	C3.59 - C3.61
PS M :		Roads (General)	C3.62 - C3.63

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PS A : GENERAL

PS A 3 MATERIALS

PS A 3.1 QUALITY

Substitute the second sentence of the first paragraph of A 3.1 with the following:

Materials shall bear the official mark of the appropriate standard.

The Contractor is responsible for the cost of all testing to ascertain that the materials do comply with the specified minimum requirements of the relative materials and no additional payment will be made for such testing.

The Contractor shall inform the Employer's Agent of any control testing to be done at least 48 hours before such tests are required and must allow in his program for the time necessary for the tests and the processing of the results thereof.

PS A 4 PLANT

PS A 4.2 CONTRACTOR'S OFFICE, STORES AND SERVICES

Add the following to A 4.2:

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

No housing facilities are available for the Contractor's work force, and arrangements must be made by the Contractor for both accommodation and transport. The Contractor is solely responsible for all housing, or the arranging thereof, and no payment or extension of time will be allowed because of any delay and/or work damage that may arise.

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PS A 5 **CONSTRUCTION**

PS A 5.1 **SURVEY**

PS A 5.1.1 **Setting Out the Works**

Substitute the first sentence of A 5.1.1 with the following:

The works shall be set out as shown on the drawings. Benchmarks will be placed before handing over of the site.

Add the following:

Setting out of the works is the sole responsibility of the Contractor and shall be done from fixed points as indicated on the drawings. The Contractor shall, within two (2) weeks after the site has been handed over to him, ascertain himself of the correctness of all points. Any discrepancy shall immediately be reported to the Employer's Agent in writing. Any costs or subsequent costs arising from discrepancies that had not been reported to the Employer's Agent within the aforementioned period shall be the sole responsibility of the Contractor.

Setting out the works will not be measured and paid for directly, and compensation for the work involved in setting out shall be deemed to be covered by the tendered rates for the various items of work included under the contract.

PS A 5.2 **WATCHING, BARRICADING, ELECTRIC LIGHTING AND TRAFFIC CROSSINGS**

Add the following to A 5.2:

All excavations must be marked with barriers, reflecting tape and warning signs to satisfaction of the Employer's Agent.

PS A 5.4 **PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES**

Add the following to A 5.4:

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

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Detected existing services shall also be indicated on the "Record" drawings.

Where the Contractor is responsible for the cost of repairs carried out by the Employer or others, the costs will be recovered by means of a deduction from the Contractor's monthly payment certificate.

PS A 5.5 DEALING WITH WATER ON WORKS

Add the following to A 5.5:

A high water table is expected due to significant dewatering requirements experienced on previous contracts at this site. For the purposes of this contract, it must be assumed that the water table is at ground level and that each structure shall require dedicated dewatering measures.

Special treatment of water on site shall, where necessary, be specified separately (refer PS D 5.2.6).

PS A 5.6 POLLUTION

The Contractor's attention is drawn specifically to dust disturbance (See PS D 5.1.4.1).

PS A.5.7 SAFETY

Substitute A 5.7 with the following:

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

- (a) Provide to its Employees on the Site of Works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) as amended and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times; and
- (b) Provide, install and maintain of all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the Site, as well as the general public; and
- (c) Implement on the Site of Works, such procedures and systems and keep all records as may be required

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to ensure compliance with the requirements of the Act at all times; and

- (d) Implement all necessary measures as to ensure compliance of the Act by all subcontractors engaged by the Contractor and their employees engaged on the Works; and
- (e) Comply fully with all other requirements pertaining to safety as may be specified in the Contract.

The Employer and the Employer's Agent shall be entitled, although not obliged, to make such inspections on the Site, as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the requirement of the Act. For this purpose, the Contractor shall grant full access to the Site of all parts of the Site and shall co-operate fully in such inspection and shall make available for inspection, all such documents and records as the Employer's and/or Employer's Agent's representatives may reasonably require.

Where any such investigations reveal, or where it comes to the Employer's Agent's attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Employer's Agent shall, in accordance with the provision of Clause 39 of the General Conditions of Contract, be entitled to suspend progress on the Works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Employer's Agent, the breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the Works or any part thereof is suspended by the Employer's Agent in terms of this clause and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of Clause 43(1) of the General Conditions of Contract should the Contractor fail to complete the Works on or before the specified Due Completion Date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute ground for the Employer's Agent to act in terms of Sub-Clause 55.1.5 of the General Conditions of Contract and for the Employer to terminate the Contract in accordance with the further provisions of the said Clause 55.

PS A 5.9

TRAINING OF LOCAL LABOUR (in task)

An aim to this construction project is to provide as many temporary employment opportunities to the community of Lethabong / Rustenburg as possible. It is incumbent on the Contractor to provide the necessary core of artisans, skilled and semi-skilled personnel required to construct, supervise and adequately control the project as well as providing any necessary on-going training in basic construction skills.

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Witness 2

Contractor

Witness 1

Witness 2

PS A 5.10 **WORKMEN's COMPENSATION ACT**

It is a requirement of this contract that all labour employed on the site be covered by the Workmen's Compensation Act. The Contractor is to arrange a suitable method of complying with the Act including the payment of the necessary levies.

PS A 7 **TESTING**

PS A 7.4 **STATISTICAL ANALYSIS OF CONTROL TESTS**

Substitute A 7.4 with the following:

Test results shall not be evaluated by statistical methods. All results shall comply with the specified minimum requirements of the materials concerned.

PS A 8 **MEASUREMENT AND PAYMENT**

PS A 8.2 **PAYMENT**

Add the following to A 8.2:

PS A 8.2.5 **Adjusted Payment for Time-related Items**

The payment to the Contractor for time-related items shall be adjusted in accordance with the following formula in the event of the contract being extended by means of a variation order:

$$\text{Sum of Tendered amounts for time-related items} \times \frac{\text{Extended contract period as authorised by variation order}}{\text{Tendered contract period}}$$

The above-mentioned adjustment of the payment for time-related items shall be made in the Completion Payment Certificate and shall be the only payment for additional time-related costs.

Add the following to A 8.4:

PS A 8.4.6 **Standing Time Costs**
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Witness 2

- a) plant Unit : Sum per working day
- b) labour Unit : Sum per working day
- c) other resources (to be specified by Contractor) Unit : Sum per working day

The tendered sum for each item shall include full compensation for all standing time costs of the specified resource of whatever nature and approved by the Employer's Agent, which are not recoverable by way of the provision made in PS A 8.2.5 for the adjusted payment of time-related items.

For the purposes of calculating the total standing time cost, a working week shall be held to consist of five working days and a working day of 8 hours.

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

The amount by which the standing time costs is adjusted shall be subject to the contract price adjustment formula as defined in the conditions of contract.

The Contractor shall take note that this payment item shall only apply to delays, which **in the opinion of the Employer's Agent**, are incurred as a result of riot, commotion, politically motivated sabotage and acts of terrorism or disorder outside the Contractor's control. This item shall also apply to standing time incurred as a result of labour boycotts, except that only sub-items (a) and (c), as applicable, will be paid where the Contractor did not pay his labour for the time boycotted. Costs for delays incurred for all other circumstances shall be treated as provided for in the conditions of contract.

The provision of this clause shall in no way prejudice the right of either the Employer or the Contractor to determine the contract in terms of the provisions of clause 9.1.2 of the general conditions of contract.

The Contractor shall take note that no payment will be considered for additional cost or time lost for any daily removal of plant and equipment from the site, any additional costs incurred in protecting his plant and site establishment, or loss incurred in respect of damage to construction plant, equipment and materials supplied and the works.

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Witness 2

Contractor

Witness 1

Witness 2

In the event that GCC 15.13.1 becomes applicable, the time on which such penalties are calculated shall be reduced by the total standing time approved by the Employer's Agent.

PS A 8.5 PROVISIONAL AMOUNTS DETERMINED BY THE EMPLOYER'S AGENT

PS A 8.5(b) 1 Community Liaison Officer..... Unit: Prov.

A salary must be paid fortnightly by the Contractor to the person appointed as the Community Liaison Officer for the project. The payment dates will be determined as soon as the CLO is appointed. The hourly rate shall be specified monthly by the Department of Labour.

PS A 8.5(b) 2 Overhead costs, surcharge, and profit on (1) above..... Unit: %

The tariff is to cover the Contractor's overheads, surcharge and profit on payments made to the Community Liaison Officer and Clerk of Works and will be calculated as percentage levy on payments. No payments will be made on this item before any payments is made to the Community Liaison Officer and Clerk of Works.

PS A 8.5(b) 3 Liaising with mechanical / electrical contractors Unit: Sum

All cost associated with liaison with the Mechanical / Electrical Contractors and the accommodation of the main contractor's activities (programming). Including but not limited to the dewater and cleaning of structures after water tightness test, cleaning and removal of rubble, providing access during installation and providing hard standing for crantage.

PS A 8.5(c) 1 Computer facilities..... Unit: Prov

The Contractor shall allow for an amount of R15 000-00 for a lap-top computer for use by the clerk of works during the contract period. After the contract, the computer will be handed over to the employer. Quotations for the computer will be obtained by the Employer's Agent and handed to the Contractor for purchase.

PS A 8.5(c) 2 Overhead costs, surcharges & profit on (1) above..... Unit: %

The tariff is to cover the contractor's overheads, surcharges, insurance and profit on payment for the computer facilities for the clerk of works will be calculated as percentage levy on payments. No payments will be made on this item before any payments is made for the computer facilities.

PS A 8.5(d)1 Site Supervision

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Contact Data**

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

A salary must be paid monthly by the contractor to the person appointed as the Clerk of Works/ Site Engineer by the Employer's Agent for a period of 12 months. Payment date will be determined as soon as person is appointed. The monthly rate is R40 000-00.

PS A 8.5(d)2 Overheads, Costs, Surcharges & Profit on (1) above

The tariff is to cover the contractor's overheads, surcharges, insurance and profit on payment for the clerk of works and will be calculated as percentage levy on payments. No payments will be made on this item before any payments is made for the site supervision.

PS A 8.7 DAYWORK..... Unit: Prov

Replace A 8.7 with the following:

Daywork will be paid according to the percentage allowance method. For calculating the total remuneration the General Conditions of Contract for Construction Works, Third Edition (2015) shall apply, with the amendments as in the appropriate Special Conditions of Contract, which is bound into this document. A daywork schedule will be provided for filling in the necessary information.

PS A 8.8.4 Existing Services

Add the following to A 8.8.4:

Where the Contractor is responsible for the cost of repairs carried out by the Employer or others, the costs will be recovered by means of a deduction from the Contractor's monthly payment certificate. The Employer will attend to the payment of monies due to others.

PS A 8.9 OCCUPATIONAL HEALTH AND SAFETY

PS A 8.9.1 Health and Safety Measures Unit: Sum

The rate shall cover all costs pertaining to the provision and maintenance for the duration of the contract of the health and safety measures required in terms of Clause 5 (Principal Contractor and Contractor) of the Construction Regulations (2014) of the Occupational Health and Safety Act. other sum shall be paid in this respect and Tenderers must therefore ensure that adequate provision has been allowed for.

PS A 8.9.2 Health and Safety Plan Unit: Sum

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The rate shall cover all costs pertaining to the provision and maintenance for the duration of the contract of the Health and Safety Plan as required in the Construction Regulations (2014). The rate shall include for all risk assessments required as well as for the development and implementation of safe work procedures and method statements. No other sum shall be paid in this respect and Tenderers must therefore ensure that adequate provision has been allowed for.

PS A 8.9.3 Health and Safety File Unit: Sum

The rate shall cover all costs pertaining to the provision and/or collection of data (drawings, design, materials, operation and maintenance manuals etc.) to be contained in the file, co-operation with other parties, compilation and maintenance of the file during the duration of the contract and the handing over of the file to the Client on completion of the contract. No other sum shall be paid in this respect and Tenderers must therefore ensure that adequate provision has been allowed for.

PS A 8.10 ENVIRONMENTAL MANAGEMENT PLAN

PS A 8.10.1 Cost of Environmental Management Plan Unit: Sum

The sum shall cover the Contractor’s initial cost of providing and demonstrate to the Employer’s Agent a suitable and sufficiently documented Method Statement based on the Client’s documented Environmental Management Plan Specifications as set out under Part C3: Scope of Works (ref. Clause C3.5.1.5) of this document.

PS A.8.10.2 Complying with the Environmental Management Plan (EMP) Unit: Sum

The sum shall cover the time-related cost of whatever nature, for complying with the Environmental Management Plan (EMP) Specifications as set out under Part C3: Scope of Works (ref. clause C3.5.1.5) of this document and that is not specifically covered in PS A.8.10.1

PS AB: EMPLOYER’S AGENT’S OFFICE

PS AB 3 MATERIALS

PS AB 3.1 NAMEBOARDS

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Witness 2

Contractor

Witness 1

Witness 2

Substitute "South African Institution of Civil Engineers" in the first paragraph of AB 3.1 with "South African Association of Consulting Engineers".

PS AB 3.2 OFFICE BUILDINGS

Add the following to AB 3.2:

The office must have an adjacent carport with minimum dimensions of 6 m x 3 m with a free draining, wearing course floor. The roof must be built in such a way that a vehicle will always be shielded against the sun throughout the day. An approved shade net may be used for the sides to comply with above-mentioned requirement.

PS AB 4 PLANT

PS AB 4.1 TELEPHONE

Substitute AB 4.1 with the following:

The Contractor shall, over and above the telephone for his own use, allow for an amount of R800-00 per month for the cost of the cellular phone (including 4G or HSDPA functionality) of the Clerk of Works.

PS AB 5 CONSTRUCTION

PS AB 5.1 NAMEBOARDS

Add the following to AB 5.1:

Details of the name board are shown on Figure 2.

The name boards shall be erected within one month after receipt of the letter of acceptance and shall be placed at the position indicated by the Employer's Agent, and kept in good repair for the duration of the contract and the defects liability period. Any damage to these boards shall be repaired within fourteen days of a written instruction issued by the Employer's Agent. No payment shall be made in terms of the contract prior to the erection of the name boards.

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Contractor

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Witness 2

The Contractor will be permitted to erect a maximum of two of his own name boards, in positions approved by the Employer's Agent. The Employer's Agent reserves the right to order the removal of these boards if they are not kept in good repair.

PS AB 5.3 KEY PERSONNEL

Add the following to AB 5.3:

The Contractor shall inform the Employer's Agent of the person to whom he has assigned duties with respect to the site in terms of the Occupational Health and Safety Act and the person(s) who are in possession of a valid certificate of competency in first aid. The Contractor shall give copies of the minutes of the site safety meeting to the Employer's Agent.

PS AB 5.4 SURVEY ASSISTANTS

Substitute "two or more suitably educated survey labourers" in the first sentence of AB 5.5 with "two semi-skilled labourers"

PS AB 5.5 SURVEY EQUIPMENT

The Contractor shall provide the following tested and approved survey equipment on site for the duration of the contract and for the use of the Employer's Agent whenever needed:

- a) one tacheometer capable of reading to minimum 20 seconds and maximum 6 seconds of arc, plus tripod;
- b) one automatic level plus tripod;
- c) two tacheometer staffs and one level staff, all graduated metrically; and
- d) one 5 m and one 100 m tape measure.

The above-mentioned equipment may by arrangement be shared between the Contractor and the Employer's Agent's representative.

The Contractor shall keep the equipment continuously insured against any loss, damage or breakage, and he shall indemnify the Employer's Agent and the Employer against any claims in this regard.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

The Contractor shall maintain the equipment in good working order and keep it clean throughout the contract period.

PS AB 8 **MEASUREMENT AND PAYMENT**

PS AB 8.2 **PAYMENT**

Add the following to AB 8:

PS AB 8.2.2 **Survey Assistants and Survey Equipment**

No payment shall be made for the survey assistants or survey equipment and all costs shall be deemed to be covered by the rates tendered for the Contractor's facilities.

PS C : SITE CLEARANCE

PS C 3 **MATERIAL**

PS C 3.1 **DISPOSAL OF MATERIAL**

Substitute the first sentence of C 3.1 with the following:

An area for the disposal of material obtained from clearing and grubbing, demolition of structures and dismantling and removal of pipes shall be disposed of at the municipal dumping site.

PS C 5 **CONSTRUCTION**

PS C 5.1 **AREAS TO BE CLEARED AND GRUBBED**

Substitute the first sentence of C 5.1 with the following:

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

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

Measurement and payment for clearing and grubbing shall occur for areas as required by the Employer's Agent.

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Witness 2

Contractor

Witness 1

Witness 2

Substitute the last paragraph with the following:

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

PS C 5.2 CUTTING OF TREES

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

A penalty of R1000-00 per tree for trees damaged and/or removed will be charged.

PS C 5.9 EXISTING FENCING

The fences around the site shall be repaired immediately after any damage to them has occurred.

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

PS C 8 MEASUREMENT AND PAYMENT

PS C 8.2 SCHEDULED ITEMS

PS C 8.2.7 Dismantle and Remove Pipelines Unit : m

Substitute the last sentence of C8.2.7 with the following:

The rate shall cover the cost of excavation to expose each pipeline to be removed and for backfilling upon completion.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

PS D : EARTHWORKS

PS D 2 INTERPRETATIONS

PS D 2.3 DEFINITIONS

Add the following to D 2.3:

Sand (cohesionless and non-cohesive)

For the purpose of the compaction requirements, a non-plastic material of which not less than 95 % by mass passes a sieve of nominal aperture size 5,0 mm, and not more than 10 % passes a sieve of nominal aperture size 0,075 mm.

PS D 3 MATERIALS

PS D 3.1.2 Classes of Excavation

Add the following to D 3.1.2:

Soft, intermediate and boulder excavation shall be classified and measured as soft excavation. Hard rock excavation shall be classified and measured as hard rock excavation.

PS D 3.3 SELECTION

PS D 3.3.1 General

Substitute the second paragraph of D 3.3.1 with the following:

The Contractor shall deal in such a way with materials from all excavations for structures and pipe trenches to ensure that usable material is not contaminated with unsuitable material. If usable material is contaminated, such contaminated material shall be removed and replaced with material of standard at least equal to the in situ usable material, all at the Contractor's expense. No additional payment shall be made in respect of this and all relevant costs shall be deemed to be included in the tendered rates.

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Add the following to D 3:

PS D 3.4 **SUBSOIL DRAIN UNDER THE REACTOR**

A subsoil drain consisting of 110 mm diameter perforated or slotted uPVC pipes in a 300 mm x 400 mm bed of 19 mm stone, all as specified hereunder, shall be installed where shown on the drawings. The pipes shall be connected with approved couplings and a gradient of 1 in 200 must be maintained towards the discharge point.

PS D 3.4.1 **Material for Subsoil Drainage**

PS D 3.4.1.1 **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 \pm 1,5 mm and the number of perforations per metre shall be not less than 26 for 110 mm pipes and 52 for 160 mm pipes. Perforations shall be spaced in two rows for 110 mm pipes and in three rows for 160 mm pipes.

Slotted pipes shall have a slot width of 8 mm \pm 1,5 mm. The arrangement of slots shall be subject to the Employer's Agent'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 D 3.4.2 **Crushed Stone**

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

PS D 3.4.3 **Geotextile Blanket**

The geotextile blanket around subsoil drains shall be a woven polypropylene tape similar and equal to Kaytech Bidim A2.

PS D 3.4.4 **Sand**

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

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

PS D 4 PLANT

Add the following to D 4:

PS D 4.5 AVOIDING QUAGMIRE CONDITIONS

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

PS D 5 CONSTRUCTION

PS D 5.1 PRECAUTIONS

PS D 5.1.2 Existing Services

PS D 5.1.2.2 Detection, location and exposure

Add the following to D 5.1.2.2:

The requirements of PS A 5.4 shall apply mutatis mutandis.

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

PS D 5.1.2.3 Protection of cables

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

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Witness 2

Contractor

Witness 1

Witness 2

PS D 5.1.4 **Nuisance**

PS D 5.1.4.1 **Dust Nuisance**

Add the following to D 5.1.4.1:

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

PS D 5.2 **METHODS AND PROCEDURES**

D 5.2.1 **Site Preparation**

PS D 5.2.1.2 **Conservation of topsoil**

Add the following to D 5.2.1.2:

Removal of topsoil shall only occur in areas as approved by the Employer's Agent. The topsoil shall be conserved for use elsewhere.

PS D 5.2.2 **Excavation: Add or Amend the Following Sub-Clauses**

PS D 5.2.2.1 **Excavations for general earthworks and for structures**

Add the following to D 5.2.2.1:

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

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

PS D 5.2.2.3 **Disposal**

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Substitute the second sentence of D5.2.2.3 with the following:

All surplus material which is suitable for fill shall be transported to an open site or be used for terracing works around structures on site, to be designated by the Employer's Agent, spread and compacted as fill.

All material unsuitable for fill shall be disposed of within a distance of 1.0 km from the site boundaries.

PS D 5.2.2.4 Excavation limits for payment purposes

Where formwork has to be provided to the outside face of a concrete member, the limits of excavation for measurement and payment purposes shall be the vertical planes 0,5m outside the perimeter of the concrete member for which the formwork is to be provided at the founding level as shown on the Drawings.

PS D 5.2.3.1 Embankments

Add the following to D 5.2.3.1:

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

PS D 5.2.3.2 Backfilling of trenches and backfilling against structures

Add the following to D 5.2.3.2:

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

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

Add the following to D5.2.3:

PS D 5.2.3.3 Filling under floors

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

PS D 5.2.4 Finishing

PS D 5.2.4.1 Final grading

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Add the following to D 5.2.4.1:

Embankments and terraces shall be trimmed to an even grade of 1 in 2 or as shown on the drawings.

PS D 5.2.4.2 Top soiling

Add the following to D 5.2.4.2:

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

PS D 5.2.4.3 Grass or other vegetation

Add the following D 5.2.4.3:

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

a) Grassing

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

PS D 5.2.5.1 Freehaul

Add the following to item 5.2.5.1(1):

Transport for earthworks within 1.0 km distance from the site boundaries shall be considered freehaul.

PS D 5.2.6 Dewatering of Foundation Excavations

Over and above his general obligations in regard to dealing with water as specified in SABS 1200 A, the Contractor shall be responsible for preventing the ingress of water into the foundation excavations. The preventative measures shall include the construction of proper drainage channels, diversion channels, berms, sumps, and the supply, operation and maintenance of the necessary bailing and pumping equipment.

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Witness 2

Contractor

Witness 1

Witness 2

The dewatering measures, with the exception of pumping, shall be maintained until the backfilling has been completed, after which all settled silt, mud, etc. shall be removed from the exposed surfaces where necessary. Between the various construction stages, pumping may be interrupted as may be decided by the Employer's Agent. The draining or pumping of water from foundation excavations shall be so done that no concrete materials will be carried away.

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

PS D 8 **MEASUREMENT AND PAYMENT**

PS D 8.1 **BASIC PRINCIPLES**

Add the following to D 8.1:

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

PS D 8.3 **SCHEDULED ITEMS**

PS D 8.3.2 **Bulk Excavation**

Add the following sub items to D 8.3.2:

- c) Extra-over 8.3.2(a) for soil cement backfilling where specifically required by the Employer's Agent (percentage of cement indicated) Unit: m³

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

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

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

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

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

PS D 8.3.3 **Restricted Excavation**

Add the following sub items to D8.3.3

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Contractor

Witness 1

Witness 2

Restricted excavation shall be limited to those excavations detailed on the drawings or as agreed to by the Employer's Agent as being restricted.

Refer to sub clause PSD 5.2.2.4:

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

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

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

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

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

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

PS D 8.3.5 Extra Excavation in All Materials to Provide Working Space Around Structures

Delete this sub clause and refer to sub clause PSD 5.2.2.4

PS D 8.3.8.1 c) Excavate by hand in soft material to expose existing services Unit: m³

Add the following to D 8.3.8.1(c):

Excavation by hand to expose existing services shall only be measured and paid for if ordered in writing by the Employer's Agent. After the excavation of trial holes to determine the exact position and depth of existing services, at intervals as required by the Employer's Agent, the excavation to a level of 300 mm above such services shall be

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measured and paid for as normal excavation, independent of the depth of such excavation. Only excavation within 300 mm of the existing services will be measured and paid for as excavation by hand and then only if ordered in writing by the Employer's Agent. The rate shall also include the backfilling of the excavations and compaction thereof.

PS D 8.3.14 Dewatering of Foundation Excavations Lump sum

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

The tendered lump sum shall include full compensation for all work and operations required for keeping the excavations dewatered and dry and for the removal of silt and mud from the exposed concrete surfaces, all as specified in Sub-Clause PSD 5.2.6 of this section.

PS D 8.4 SUBSOIL DRAINS UNDER FLOORS OF STRUCTURES

PS D 8.4.1 Pipes in Subsoil Drains

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

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

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

PS D 8.4.2 Crushed Stone in Subsoil Drains Unit : m³

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

PS D 8.4.3 Supply and Place Geo-fabric (Kaytech Bidim A2 Or Similar) In Subsoils and Below Floors

The rate shall cover the cost of supplying the geotextile blanked and of placing it as indicated on the drawings.

PS DB : EARTHWORKS (PIPE TRENCHES)

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PS DB 1 **SCOPE**

Add the following to DB 1.1:

This specification also covers the excavation for cable trenches.

PS DB 2.2 **APPLICATION**

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

PS DB 3 **MATERIALS**

PS DB 3.5 **BACKFILL MATERIALS**

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

PS DB 4 **PLANT**

PS DB 4.1 **EXCAVATION EQUIPMENT**

Add the following to DB 4.1:

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

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PS DB 5 **CONSTRUCTION**

PS DB 5.1 **PRECAUTIONS**

PS DB 5.1.2 **Stormwater, Seepage and Dewatering Of Excavations**

Substitute DB 5.1.2 with the following:

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

Add the following to DB 5.1:

PS DB 5.1.4 **Existing services that intersect or adjoin trenches**

Add the following to DB 5.1.4

The conditions of PS A5.4 shall apply mutatis mutandis.

PS DB 5.1.5 **Hand Excavation**

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

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PS DB 5.2 **MINIMUM BASE WIDTHS SPECIFIED**

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

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

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

PS DB 5.4 **EXCAVATION**

Add the following to DB 5.4:

The provisions of PS D 5.2.2.4 shall apply mutatis mutandis for hand excavation.

PS DB 5.5 **TRENCH BOTTOM**

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

PS DB 5.6 **BACKFILLING**

PS DB 5.6.2 **Material for Backfilling**

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

Add the following to DB 5.6.2:

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

PS DB 5.6.3 **Disposal of Soft Excavation Material**

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Add the following to DB 5.6.3:

The provisions of PS D 5.2.2.3 shall apply mutatis mutandis.

PS DB 5.7 **COMPACTION**

PS DB 5.7.2 **Areas Subject to Traffic Loads**

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

Add the following to DB 5.7.2:

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

PS DB 8 **MEASUREMENT AND PAYMENT**

PS DB 8.1 **BASIC PRINCIPLES**

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

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Add the following to DB 8.1.2(b):

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

PS DB 8.2 **COMPUTATION OF QUANTITIES**

PS DB 8.2.4 **Shoring**

Add the following to DB 8.2.4:

Shoring will only be measured and paid for if written approval is given by the Employer's Agent before it is installed.

PS DB 8.3 **SCHEDULED ITEMS**

PS DB 8.3.2 **Excavation** **Unit: m**

Add the following to DB 8.3.2:

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

PS DB 8.3.2 **a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material** **Unit: m**

Add the following to D 8.3.2(a):

In cases where services lay parallel to steep slopes, the depth of the excavation will be measured along the centre of the trench (on the route of the service).

The rate shall also provide for the fact that the excavation width in sand will be wider than normal and that fast excavation and backfill will reduce ground water seepage.

- i) Electric cable trenches

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Excavation for electric cables not laid with other services will be measured and paid for separately under the relevant depth increments. The rate shall provide for excavation, preparing trench lengths as requested by the electrical subcontractor, backfilling and compaction thereof.

The rate shall also make provision for the possibility that long trenches need to be prepared for the electrical Contractor to lay full cable lengths (up to 300 m) and immediate backfilling after the installation of the cable (same day) to prevent theft.

ii) Combined trenches

The rate for excavation and backfilling of trenches with more than one service, shall allow for trench widths as set out in PS DB 5.2 and the bill of quantities. Extra bedding and fill blanket will be measured as in the case of normal pipe trenches.

The depth increment for combined trenches is determined by the deepest pipe in the trench.

PS DB 8.3.2 **d) Hand excavation and backfill** **Unit : m³**

The provisions of PS DB 8.3.2(a), DB 8.3.2(b) and PS DB 8.3.2(c) shall apply mutatis mutandis for hand excavation.

Payment shall only be made if ordered by the Employer's Agent.

Add the following sub item:

e) Excavate by hand in soft material to expose existing services **Unit : m³**

The rate shall apply for pipelines and cables.

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

PS DB 8.3.5 **Existing Services That Intersect or Adjoin A Pipe Trench**

PS DB 8.3.5 **a) Existing services that intersect a trench** **Unit : No**

Add the following to DB 8.3.5(a):

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

The rate shall also cover the cost of the following:

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

PS DB 8.3.5 b) Existing services that adjoin a trench Unit : No or m

Add the following to DB 8.3.5 (b):

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

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

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

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

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

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

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

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

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

PS DB 8.3.8 Pipe Trenches Crossing Existing Gravel RoadsUnit : m³

The tendered rate shall cover the cost (all labour, plant and material) to excavate and backfill the trenches with sand, stabilise with 5 %, by volume, with cement and compact to 100 % MAASHTO density, as well as re-instate the road surface as per the original pavement layers.

PS DE: EARTHWORKS (SMALL EARTH DAMS)

PS DE 4 PLANT

Add the following to DE 4:

PS DE 4.3 TEMPORARY DRAINING EQUIPMENT

The Contractor will provide temporary pipework and equipment to tie-in with the existing reactor and RAS pump station, i.e. pumps, to lower the top water level in the reactor/sump before work can begin on new pipes entering through the embankments. Upon completion, all temporary pipework and equipment will be removed from site.

PS DE 4.4 TEMPORARY BYPASS FACILITIES

The Contractor will provide temporary pipework and equipment, i.e. pumps, and koffer dam to accommodate the tie-in of the inlet pipe with the new anaerobic reactor.

DE 8 MEASUREMENT AND PAYMENT

DE 8.3 SCHEDULED ITEMS

PS DE 8.3.11 Temporary work for connection to new reactorUnit : Sum

The rate shall cover all plant, material and labour necessary to execute any temporary work required to successfully make the connection.

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PS G : CONCRETE (STRUCTURAL)

PS G 3 MATERIAL

PS G 3.2 CEMENT

PS G 3.2.1 Applicable Specifications

Substitute G 3.2.1 with the following:

All cement types shall comply with the requirements of SABS EN 197-1.

For this contract only CEM I Portland cement shall be used in structural concrete.

Malmesbury hornfels (shale) shall not be used as aggregate in concrete.

PS G 3.2.3 Storage of Cement

Add the following to G 3.2.3:

Separate storage facilities shall be provided for the various types of cement specified.

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

PS G 3.5.2 Air-entraining Agents

Substitute G 3.5.2 with the following:

Air-entraining agents shall not be used in concrete.

PS G 4 PLANT

PS G 4.5.3 Ties

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Add the following to G 4.5.3:

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

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

PS G 5 **CONSTRUCTION**

PS G 5.1 **REINFORCEMENT**

PS G 5.1.3 **Cover**

Substitute G 5.1.3 with the following:

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

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PS G 5.2.1 **Classification of Finishes**

Add the following to G 5.2.1:

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

(a) **Rough**

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

(b) **Smooth**

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

(c) **Special smooth, repaired and rubbed**

This shall be for formed surfaces of structures prominently exposed to public view where appearance is of special importance. Formwork shall only be of approved plywood, approved commercial formboard or smooth tongue-and-groove boards, except that in certain cases such as for pre-cast units permission may be granted to use steel formwork provided that sufficient vibration is used. After defects have been repaired, as described in paragraph (e), all ridges, nail marks and other projections shall be removed with carborundum stone. After the treatment the surface shall then be kept continuously wet for 10 days after which period of additional curing it shall be allowed to approach surface dryness immediately prior to treatment by sack rubbing in order to secure a degree of suction most favourable for obtaining good bond. A soft mortar consisting of one part cement and two parts sand passing the 1,0 mm sieve shall be thoroughly rubbed over the entire exposed surface with clean hessian, completely filling all pits and irregularities. The mortar consistency shall be that of thick cream. At a sufficient interval after the sack rubbing to prevent smearing, but before the mortar hardens, most of the excess mortar shall be removed by rubbing with clean hessian. After the mortar has set for several hours, curing shall be resumed and continued for at least two (2) days. The surface shall then be allowed to become surface dry and in this condition well sanded with no. 2 sandpaper.

(d) **Exposed arrises**

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

(e) Repair of concrete

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

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

Concrete filling generally of the same class as the damaged concrete shall be used for holes extending entirely through concrete sections and of such a size as will accept concrete and for holes in mass concrete greater in area than 0,1 m² and deeper than 100 mm and for holes in reinforced concrete which are greater in area than 0,15 m² and which extend beyond the reinforcing. Mortar filling composed of sand and cement in the same proportions as used for the concrete and of a consistency such as will make the mortar sufficiently plastic to be easily placed, shall be used for all other imperfections.

A filling shall be bonded tightly to the surface of the area being repaired and shall be bound and free from shrinkage, cracks and hollow areas after the filling has been cured and dried. Curing of repaired areas shall be performed in such a manner and for such periods as the Employer's Agent may direct.

Particular care shall be exercised to ensure that the colour of the repair work shall match as nearly as possible to the colour of the surrounding concrete. No cement washing or plastering shall be carried out except on the written instruction of the Employer's Agent.

PS G 5.2.5 Removal of Formwork

In Table 2 of G 5.2.5.2, substitute "Portland cement and Portland cement 15" in columns 2, 3 and 4 with "CEM 1 Portland cement, delete columns 5 to 10.

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PS G 5.4

PIPES AND CONDUITS

Add the following to G 5.4:

All pipes and specials, which must be installed in the floors and walls of structures, shall be embedded in the concrete during the casting of such concrete. No holes shall be left for the later installation of pipes and specials, without the written approval of the Employer's Agent.

Where such holes have been approved by the Employer's Agent, the Contractor shall be responsible for the grouting-in of such pipes or specials with an approved expansive cementitious grout as specified in PS G 4.5.3, regardless of whether or not these have been supplied by himself. The Contractor shall provide a smooth, dense and waterproof finish around the pipes or specials.

The clear space between pipes of any kind embedded in reinforced concrete and the clear space between such pipes and reinforcement shall at any point be not less than:

- (a) 40 mm, or
- (b) 5.0 mm plus the maximum size of coarse aggregate,

whichever is the greater.

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PS G 5.5 CONCRETE

PS G 5.5.1.5 Durability

Substitute G 5.5.1.5 with the following:

Concrete shall be so proportioned to ensure that the water/cement ratio does not exceed 0,5 and to ensure workability, water-reducing admixtures of approved manufacture shall be used in preference to increasing the cement content.

PS G 5.5.1.7 Strength concrete

Add the following to G 5.5.1.7:

The grade of strength concrete and the maximum nominal size of coarse aggregate for each portion of the works, unless otherwise indicated on the drawings, shall be as follows:

- (a) Mass concrete for stairs 20 MPa/19 mm
- (b) Blinding layers 20 MPa/19 mm
- (c) Encasing of pipes 20 MPa/19 mm
- (d) Strip foundations 20 MPa/19 mm
- (e) Benching and screeds 20 MPa/10 mm
- (f) All Reinforced concrete 35 MPa/19 mm
- (g) All water retaining concrete 35 MPa/19 mm

PS G 5.5.7 Construction Joints

Add the following to G 5.5.7.1:

Construction joints shall be limited to the minimum and shall only be made in positions as shown on the drawings or in positions as specifically approved by the Employer's Agent. Construction joints between tank bottoms, floors, or

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wall bases, and the walls standing on them shall not be made flush with the supporting surface, but shall be made in the wall 150 mm above the base. The 150 mm high riser wall shall be cast as an integral part of the bottom, floor or base, i.e. the concrete in the riser shall be deposited simultaneously with the concrete in the bottom, floor or base adjacent to it. Where there is a fillet at the bottom of a wall, the construction joint shall be made 150 mm above the fillet.

PS G 5.5.7.4 Expansion joints

Expansion joints shall be formed in positions and in accordance with details as shown on the drawings. All expansion joints shall be formed with an approved closed cell polyethylene fill material with a density of not less than 100 kg/m³. Joint sealers shall consist of a two component polyurethane sealing compound complying with SABS 1077. Rearguard S-type PVC water stops with centre bulbs shall be installed under floors and Hydrofoil PVC water stops with centre bulbs in walls, as shown on the drawings.

All sealants, fill material and waterstops shall be installed strictly in accordance with the specification of the manufacturers and to the satisfaction of the Employer's Agent. The sealant shall be installed in one operation and jointing to already hardened sealant will not be permitted.

PS G 5.5.9 Adverse Weather Conditions

Add the following to G 5.5.9.1:

No material having a temperature of below 5°C shall be used for concrete, and no concrete shall be deposited when the ground or air temperature is below 2°C. Furthermore, if the air or ground temperature is likely to fall below 2°C within 12 (twelve) hours after depositing of concrete, no concreting shall be done without the written consent of the Employer's Agent. If such consent is given, the Contractor shall heat the aggregate stockpiles and mixing water, and defrost the formwork and the reinforcement.

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PS G 5.5.10 **Concrete Surfaces**

Add the following to G 5.5.10.1:

Concrete surfaces under screeds, granolithic floor finishes or benching, and surfaces of strip foundations and footings shall be brought up to a plane, uniform surface with a suitable screed board.

Add the following to G 5.5.10:

PS G 5.5.10.4 **Wood-floated finish**

Where wood floating is specified or scheduled, the surface shall first be given a finish as specified in G 5.5.10.1 and after the concrete has hardened sufficiently, it shall be floated to a uniform surface free from trowel marks. The screeded surface shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screed marks.

PS G 5.5.10.5 **Steel-floated finish**

Where steel floating is specified or scheduled, the surface shall be treated as specified in PS G 5.5.10.4 except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screeded surface shall be steel-trowelled under firm pressure to produce a dense, smooth, uniform surface free from trowel marks.

PS G 5.5.11 **Watertight Concrete**

Add the following to G 5.5.11:

All structures shall be deemed to be water retaining, unless otherwise specified.

PS G 5.5.11.1 **Requirements and tests for water tightness of structures**

The completed structure shall be watertight, and the quality and finish of the work shall be such that no after-treatment of the work such as plastering or cement wash is necessary to ensure compliance with this requirement.

The works will not be certified complete until the structures enumerated in PS G 5.5.11 has been proved by testing to be watertight.

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Upon completion of construction and when so agreed by the Employer's Agent, the structure shall be filled by the gradual admission of water until the water level reaches the designed maximum level. The water level shall then be carefully noted and recorded by the Employer's Agent in relation to a fixed bench mark, and the structure shall be allowed to remain filled for a period of 2 (two) weeks or such longer time as may be required to permit complete saturation of the concrete. During this period, readings will be taken by the Employer's Agent and the results so obtained will be available for the information of the Contractor.

At the end of this period more water shall be added, if necessary, to bring the water level back to the designed maximum level and the water shall be left undisturbed for a period of at least 4 (four) days during which time the level shall again be recorded by the Employer's Agent at regular intervals. The structure shall be considered to be watertight if the water level drop does not exceed 6 mm in 96 (ninety six) hours in the case of a roofed structure and if no leakage is apparent.

The acceptable level drop in the case of an open (non roofed) structure shall be such that it allows for normal evaporation during the time of the test.

If appreciable leakage is evident at any stage of the filling or testing or if, in the opinion of the Employer's Agent, the degree of water tightness is unsatisfactory, the Contractor shall, when so ordered by the Employer's Agent, discontinue the test immediately and at his own expense take approved steps to rectify the work. The work of rectification shall be continued assiduously until, on repetition of the test procedure, a satisfactory test result is obtained and the degree of water tightness is acceptable.

Backfilling around structures shall not commence until a satisfactory test result has been obtained.

The Employer's Agent shall have the right to retest the structure before the expiry of the defects liability period and the results of these tests will be made available to the Contractor. If these tests indicate to the Employer's Agent that the degree of water tightness is unsatisfactory, the Employer's Agent (before issuing the final certificate) will be entitled to order the Contractor to rectify the work at his own expense in such a manner as will cause least interruption of the water supply to consumers and will ensure that the degree of water tightness of the structure is satisfactory.

PS G 5.8 NO-FINES CONCRETE

PS G 5.8.1 Materials

Cement shall be CEM II.

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Water and aggregate shall comply with the requirements of G 3.3 and G 3.4.

Each size of aggregate shall be a single size aggregate graded in accordance with SABS 1083.

PS G 5.8.2 Classes of No-fines Concrete

No-fines concrete shall be classified by the prefix NF and the size of aggregate to be used. Class NF 19 means a no-fines concrete with a 19 mm nominal size aggregate.

The volume of aggregate per 50 kg of cement for each class of concrete shall be as follows:

CLASS	AGGREGATE PER 50 kg CEMENT
NF 38	0,33 m ³
NF 19	0,30 m ³
NF 13	0,27 m ³

PS G 5.8.3 Batching and Mixing

Cement shall be measured by mass or in full pockets of 50 kg each and aggregate shall be measured by volume in approved measuring boxes or barrows.

The aggregate shall be moist or wetted before the cement is added. Where drum mixers are used, about 20 % of the water shall be poured into the drum before the aggregate and cement are loaded. The mixing time in the drum shall be about 45 to 50 seconds.

The quantity of water added shall be just sufficient to form a smooth grout which will adhere to and completely coat each and every particle of aggregate, and which is just wet enough to ensure that, at points of contact of aggregate, the grout will run together to form a small fillet to bond the aggregate together. The mix shall contain no more than 20 litres of water for every 50 kg of cement.

Mixing shall be done in an approved batch-type mechanical mixer, but small quantities may be hand mixed.

PS G 5.8.4 Placing

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No-fines concrete shall be placed in accordance with the procedure approved by the Employer's Agent. It shall be placed in its final position within 15 minutes of having been mixed.

The concrete shall be worked sufficiently to ensure that it will completely fill the space to be concreted and that adjacent aggregate particles are in contact with one another. Excessive tamping shall be avoided and the concrete shall not in any circumstances be vibrated.

PS G 5.8.5 Protection

All no-fines concrete shall be protected from the elements and loss of moisture. Protection against loss of moisture shall be accomplished by one or more of the following methods:

- a) Retaining formwork in place;
- b) Covering exposed surfaces with sacking or other approved material kept continuously wet;
- c) Covering exposed surfaces with plastic sheeting.

No-fines concrete placed during cold weather shall be adequately protected against frost for at least three (3) days.

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PS G 5.10

JOINING NEW CONCRETE TO EXISTING

Where partial demolition is required for extension work to existing structures, the contact face shall be cut to predetermined line and level, and any loose and fragmented material shall be removed, and projecting steel cleaned and bent as directed by the Employer's Agent. Where partial demolition is not required but extension work only, the contact surface shall be scabbled and cleaned of all dirt and loose particles.

If dowels are required, they shall be installed in holes drilled into the existing structure, in accordance with the details shown on the drawings, and secured by means of an approved type of epoxy bonding compound such as Epidermix 372 or similar.

Fresh concrete shall be bonded to the old concrete with an approved type of epoxy bonding compound, such as Epidermix 344 or similar.

PS G 6

TOLERANCES

PS G 6.2.2

Concrete Surfaces

Add the following to G 6.2.2:

The top surface of the clarifier wall shall be finished to Degree of Accuracy I in G 6.2.3(d)7, but there shall be no abrupt changes in the continuous surface. Deviations shall be measured as set out in G 6.1.2(a).

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PS G 8 **MEASUREMENT AND PAYMENT**

PS G 8.1 **MEASUREMENT AND RATES**

PS G 8.1.1 **Formwork**

Delete "or the plan size of the excavation where additional excavation is provided to facilitate erection of forms" in the first sentence of PS G 8.1.3.1(c).

Delete the following in G 8.1.1.3(c):

"and for different prop heights for beams and slabs".

PS G 8.1.3 **Concrete**

Delete "or the plan size of the excavation where additional excavation is provided to facilitate erection of forms" in the first sentence of PS G 8.1.3.1(c).

Add the following to PS G 8.1.3.1(d):

Strip foundations and encasement of pipes shall be cast directly against the sides and bottoms of excavations. No payment shall be made for additional concrete in over-break.

Delete the full stop at the end of G 8.1.3.3(a) and add the following:

"and special steps necessary before depositing concrete during cold weather, as prescribed in PS G 5.5.9".

PS G 8.2 **SCHEDULED FORMWORK ITEMS**

PS G 8.2.7 **Chamfers Exceeding 20 mm x 20 mm, Grooves and Rebates Unit : m**

The size of chamfers, or the width and depth in the case of grooves and rebates, is stated.

PS G 8.4 **SCHEDULED CONCRETE ITEMS**

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PS G 8.4.4 **Unformed Surface Finishes** **Unit : m²**

Add the following to G 8.4.4:

The concrete surface finishes under screeds, granolithic finishes or benching as prescribed in PS G 5.5.10 shall not be measured separately. The rates for the related concrete items shall also cover the cost of these surface finishes.

PS G 8.4.7 **Concrete Complete With Formwork And/Or Trowel Finish** **Sum or m³**

The rate shall cover the cost of the provision of concrete (made from ordinary Portland cement, unless otherwise scheduled), mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints, striking-off or levelling as applicable, trowelling and curing and repairing where necessary, together with the cost of all parts of formwork in contact with the concrete and the necessary bearers, struts, and other supports, plus the layout and plant necessary to erect and strike such formwork.

PS G 8.5 **JOINTS** **Unit : m**

Add the following to G 8.5:

Only construction joints with PVC waterstops shall be measured separately. The cost of all other construction joints shall be deemed to be included in the rates for the relevant concrete items.

The cost of all construction and expansion joints shall include formwork, joint filler and sealer as well as waterstops where applicable.

PS G 8.7 **GROUTING** **Unit : m³**

Add the following pay items:

- c) Grouting in of equipment supplied and installed by the Plant Supplier
 - (i) using non-shrink grout (state type)..... **Unit : cubic metre (m³)**
 - (ii) using dry-packed grout **Unit : cubic metre (m³)**

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The unit of measurement shall be the cubic metre of completed grouting.

The tendered rate shall include full compensation for supplying of all materials, mixing, applying and finishing to a steel-float surface after installation of the Plant.

PS G 8.9 **TEST STRUCTURE FOR WATERTIGHTNESS Unit : Sum**

The rate shall cover the cost of all equipment and labour necessary to test the structure for water tightness as described in PS G 5.5.11.1, including the supply of water (effluent water shall be pumped from the existing maturation ponds), filling and to empty such structure.

No additional payment will be made for re-testing the structure for water tightness after the repair of leaks.

PS G 8.10 **BUILDING PIPES INTO CONCRETE WORK AND GROUTING PIPES
INSTALLED BY THE MECHANICAL EQUIPMENT SUPPLIER Unit : No**

The rate shall cover the cost of forming the opening for the pipe, scabbling, cleaning and preparing the concrete surface, providing an approved non-shrink epoxy grout, placing and ramming of it solidly into all voids, formwork and finishing to a smooth watertight surface.

PS G 8.11 **Demolition of Structures..... Unit : Sum**

The existing pylon and concrete footing shall be demolished.

This item shall include all plant, labour and material for the removal of the complete electrical installation, structural steel work and demolition of the concrete plinth (200 m³). All building rubble shall be disposed of at a suitable disposal site.

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PS HA : STRUCTURAL STEELWORK (SUNDRY ITEMS)

PS HA 5 **CONSTRUCTION**

PS HA 5.2 **FABRICATION AND ASSEMBLY**

PS HA 5.2.6 **Handrails**

Substitute the first sentence of HA 5.2.6 with the following:

Handrails shall be of the tube and sphere type similar to Monoweld and shall be manufactured by an approved firm specialising in such works. Hot-dipped galvanised mild steel will be used, unless other material specifically been described in schedules of quantities.

Handrails shall be 1 000 mm high and shall consist of a handrail and a knee-rail, both manufactured of steel tubing of nominal wall thickness 2,6 mm and of nominal outside diameter of at least 34 mm.

Stanchions shall be manufactured pre-formed in one piece and shall be of steel tubing of nominal thickness of 2,6 mm and of nominal outside diameter of at least 42 mm. The bases of the stanchions shall be manufactured of 150 mm x 75 mm x 12,5 mm flat bars and shall be pre-formed to suit the situation in which they are to be installed (i.e. for platform- or side-mounting, and for horizontal- or sloped-mounting on concrete or steel), and the stanchion spheres shall be pre-formed to suit right angled or other angled intersections), all as shown on the drawings.

Stanchions shall be spaced at intervals not exceeding 1,5 m and shall be fixed with two M16 bolts, washers and nuts each. All joints shall be welded. Kicker plate should be installed along the length of the hand railing and should be 3 mm HDG plate 100 mm high and should be fixed to the stanchions.

Materials shall be as shown on the drawings or as scheduled.

PS HA 5.2.11 **Ladders**

Add the following to HA 5.2.11:

Ladders shall be hot-dipped galvanised after manufacturing.

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PS HA 5.2.12 **Prefabricated Open Grid Floors**

Substitute the second sentence of HA 5.2.8.1 with the following:

This shall be similar to the "U"-grid type grid floors manufactured by Armco Superlite and hot-dipped galvanised, unless other material specifically been described in the schedule of quantities.

PS HA 5.2.13 **Floor plate Floors**

Substitute HA 5.2.13 with the following:

Floor plate floors shall consist of 8 mm thick raised pattern plates as shown on the drawings. Floor plate floors shall be hot-dipped galvanised after manufacturing.

PS HA 8 **MEASUREMENT AND PAYMENT**

PS HA 8.3.6 **Corrosion Protection**

Substitute HA 8.3.6 with the following:

The corrosion protection of sundry steel items shall not be measured separately. The cost thereof shall be included in the rate for the related item.

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PS L : MEDIUM PRESSURE PIPELINES

PS L 3 MATERIALS

PS L 3.1 GENERAL

Substitute the first sentence of L 3.1 with the following:

Types and classes of materials shall be as scheduled.

PS L 3.8 JOINTING MATERIALS

PS L 3.8.4 Loose Flanges

Substitute the first sentence of the last paragraph of L 3.8.4 with the following:

Bolts and nuts shall comply with the requirements of SABS 135.

PS L 3.9 CORROSION PROTECTION

PS L 3.9.2.1 Steel pipes of nominal bore up to 150 mm

Add the following to L 3.9.2.1:

The requirements of PS L 3.9.2.2 shall apply mutatis mutandis.

PS L 3.9.2.2 Steel pipes of nominal bore over 150 mm

Add the following to L 3.9.2.2:

All mild steel pipes under this contract shall be treated in accordance with L 3.9.2.2(b)(2) on the inside and the outside, with a polyamide-cured epoxy system similar and equal to Copon EP 2300 or Amercoat 385. The Contractor shall furnish the Employer's Agent with certificates of tests in accordance with L 7.4.

Substitute "250 µm" in L 3.9.2.2(b)(2) with "350 µm".

PS L 3.9.5 Joints, Bolts, Nuts and Washers

Substitute L 3.9.5 with the following:

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All joints, bolts, nuts and washers shall be of grade 304 stainless steel, where installed above ground level or below water level. For underground installations, hot dipped galvanised bolts, nuts and washers shall be used.

PS L 3.10 **VALVES**

PS L 3.10.1 **Gate Valves**

All gate valves shall comply with the requirements of SABS 664 – Figure 2 and shall be suitable for a working pressure of 1,0 MPa unless otherwise specified. All gate valves must be supplied with a square spindle nut, suitable to be used with a valve key.

Gate valves shall have spigot ends unless shown differently on the drawings and shall close clockwise. The direction for opening and closing shall be permanently displayed on the valves.

Valves shall have extension spindles complete with handwheels. Spindles, spindle nuts and body rings shall be of galvanised mild steel.

All flanged gate valves shall be drilled according to SABS 1123 Table 16 for valves with a diameter smaller than 150mm and Table 10 for diameters exceeding 150mm.

Pipes shall not be tested against a closed valve. Special blank flanges or end caps, fully anchored, shall be provided for testing. Thrust blocks for test sections shall be approved by the Employer's Agent prior to testing of pipes.

PS L 3.10.2 **Ground Water Pressure Relief Valves**

The ground water pressure relief valves in the floors of certain water retaining structures, shown on the drawings shall be manufactured in stainless steel and shall be similar and equal to those manufactured by Gereg Sewage and Water Equipment. The valves must be designed for a water pressure of at least 6 metres and to maintain a flow rate of 320 litres per minute at a differential head of 1,0 metres.

PS L 3.11 **MANHOLES AND SURFACE BOXES**

PS L 3.11.4 **Step Irons**

Substitute L 3.11.4 with the following:

Step irons shall consist of polypropylene coated 12 mm high tensile steel such as Calcamite or similar. The installation of the step irons shall be in accordance with the specification of the manufacturer.

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PS L 4 **PLANT**

PS L 4.3 **TESTING**

Add the following to L 4.3:

The Contractor must ensure that the test equipment is in good working order and that it is calibrated.

PS L 7 **TESTING**

PS L 7.3 **STANDARD HYDRAULIC PIPE TEST**

PS L 7.3.1.2 **Test pressure**

Add the following to L 7.3.1.1:

Pipes shall not be tested against closed valves. Special blank flanges or end caps, fully anchored, shall be provided for testing.

Substitute L 7.3.1.2 with the following:

The test pressure for field testing shall be 1,5 times the rated maximum working pressure of the pipe e.g. class 4 uPVC pipes shall be tested to 0,6 MPa.

PS L 8 **MEASUREMENT AND PAYMENT**

PS L 8.2 **SCHEDULED ITEMS**

PS L 8.2.11 **Anchor/Thrust Blocks and Pedestals** **Unit : m³**

Substitute L 8.2.11 with the following:

The concrete shall be measured net volume to the specified width and depth in excess of the external volume of the pipe (i.e. the volume of the pipe will be deducted). The rate shall cover the cost of formwork and concrete.

PS LB : BEDDING (PIPES)

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PS LB **BEDDING (PIPES)**

PS LB 1 **SCOPE**

Add the following to LB 1.1:

This specification also covers the bedding required for electric cables.

PS LB 3 **MATERIALS**

PS LB 3.1 **SELECTED GRANULAR MATERIAL**

Substitute LB 3.1 with the following:

Selected granular material shall be an aggregate, sand or granular material, all of a non-cohesive nature and free from any organic material, of which the grading analysis shows 100 % passing a 14,0 mm sieve and not more than 5 % passing a 0,075 mm sieve.

In very wet conditions and if ordered by the Employer's Agent, a non-plastic crushed material with the specification as stated underneath should be used for bedding cradle.

a) **Grading**

Sieve size (mm)	% passing	
20,0		100
14,0	84	- 100
10,0	70	- 84
5,0	45	- 65
2,0	29	- 47
1,0	19	- 33
0,600	13	- 25
0,300	10	- 18

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PS LB 8.1 **PRINCIPLES**

PS LB 8.1.1 **Supply of Bedding Materials Measured Separately**

Add the following to LB 8.1.1:

Payment for bedding material and selected fill material is only made if the selected trench-excavation material cannot be used in the same position as bedding material but has to be obtained from another part of the site of works or from commercial sources.

PS LB 8.1.4 **Separate Items for Cradle And Blanket**

Substitute LB 8.1.4 with the following:

No distinction shall be made as regards material for the bedding cradle and selected fill blanket, and the material shall comply with the requirements for material for bedding cradle.

PS LB 8.1.5 **Disposal of Displaced Material**

Add the following to LB 8.1.5:

Surplus displaced material shall be dumped and levelled at the closest local municipal dumping site.

PS LB 8.2 **SCHEDULED ITEMS**

Add the following to LB 8.2:

PS LB 8.2.6 **Building Pipes into Brick Work**

Pipes supplied and installed by the Contractor (irrespective of type)

- i) (state diameter of pipe and wall thickness) Unit : No
- ii) (etc. of other diameter and wall thickness) Unit : No

The unit of measurement shall be the number of pipes built into the brick work as shown on the drawing.

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The tendered rate shall include full compensation for supplying all materials (wet to dry epoxy in the case of casting new concrete against the faces of old concrete) concreting in the pipes, cutting and placing formwork to fit around pipes and neatly finishing to conform to a smooth surface finish. In the case of the Contractor building in his own pipes the rate shall also include for holding the pipe in position and aligning the pipes to the correct levels as indicated on the drawing or as ordered by the Employer's Agent.

PS LC : CABLE DUCTS

PS LC 3 MATERIALS

PS LC 3.1 DUCTS

Add the following to LC 3.1:

Class 6 uPVC pipes (dia 110 mm or 160 mm) shall be used as ducts for electric cables under roads and paved areas.

PS LC 3.2 BEDDING

Substitute LC 3.2 with the following:

The provisions of SABS 1200 LB: Bedding (Pipes) and the relevant project specification shall apply mutatis mutandis and payment shall be made under the appropriate payment clauses of SABS 1200 LB.

PS LC 3.3 BACKFILL

Substitute LC 3.3 with the following:

The provisions of SABS 1200 DB: Earthworks (Pipe Trenches) and the relevant project specification shall apply mutatis mutandis and payment shall be made under the appropriate payment clauses of SABS 1200 DB.

PS LC 5 CONSTRUCTION

PS LC 5.1 EXCAVATION OF TRENCHES

PS LC 5.1.1 Trench Widths and Depths

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Add the following to LC 5.1.1:

Trench widths shall be in accordance with the provisions of SABS 1200 DB : Earthworks (Pipe Trenches).

The minimum depth of cover over ducts shall be 600 mm from the final road level or the finished ground level.

PS LC 5.1.3 Excavation of Trenches At Road Crossings

The minimum depth of cover over ducts shall be 300 mm where construction traffic is liable to cross them. Road crossings shall therefore be constructed after the construction of the roadworks has reached the stage where the required cover is available.

PS LC 5.2 BEDDING AND COMPACTION OF BEDDING

Substitute LC 5.2.1 and LC 5.2.2 with the following:

All ducts shall be laid on a Class C bedding according to the provisions of SABS 1200 LB: Bedding (Pipes). Backfilling shall be according to the provisions of SABS 1200 DB: Earthworks (Pipe Trenches).

PS LC 5.4 BACKFILLING AND COMPACTION

Add the following to LC 5.4: Road crossings shall be backfilled with sand (stabilised with 5 % cement by volume) from designated borrow pits, the site or commercial sources, whichever is applicable, up to underneath the subbase, and compacted to a minimum of 100 % of MAASHTO density.

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PS LD: SEWERS

PS LD 3 **MATERIALS**

PS LD 3.1 **PIPES, FITTINGS, AND PIPE JOINTS**

PS LD 3.1.5 **uPVC-pipes**

Substitute "approved flexible joints" in LD 3.1.5 with "spigot and socket rubber ring joints".

PS LD 3.5 **MANHOLES, CHAMBERS, ETC.**

PS LD 3.5.2 **Precast Concrete Sections**

Add the following to LD 3.5.2:

Precast concrete sections with an inside diameter of at least 1 000 mm shall be used for manholes.

Where the angle between the inlet and outlet of the manhole deviates by more than 45 ° from the straight or where more than one inlet enters a manhole, the invert level of the outlet shall be 30 mm lower than the lowest inlet invert level.

Sectional spun concrete cylinders shall have been manufactured from dolomitic aggregate.

PS LD 3.5.7 **Step Irons**

Substitute LD 3.5.7 with the following:

Step irons shall be installed in all manholes deeper than 1,2 m. Step irons shall consist of polypropylene coated 12 mm high tensile steel, such as Calcamite or similar. The installation of the step irons shall be in accordance with the specification of the manufacturer.

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PS LD 5 **CONSTRUCTION**

PS LD 5.6 **MANHOLES, INSPECTION CHAMBERS, ETC**

PS LD 5.6.1 **General**

Substitute LD 5.6.1(a) with the following:

Manholes shall be of precast concrete sections with an inside diameter of at least 1 000 mm and shall be constructed as shown on the drawings bound into the document.

1. Final cover levels of manholes in roads and paved areas shall be to the same level as the road or paved area.
2. In the veld 100 mm above natural ground level.

If a manhole is positioned at a low point or in a hollow where stormwater infiltration may occur, the manhole cover level must be raised to a level to avoid the danger of infiltration, or to a level as agreed with the Employer's Agent.

If the manhole needs to be raised with more than 300 mm, precast concrete sections with the same diameter shall be installed and sealed with epoxy.

PS LD 5.6.2 **Benching**

Add the following to LD 5.6.2.3:

Benching for all manholes except those with sand traps shall be in accordance with the drawings bound into the document.

PS LD 5.6.3 **Step Irons**

Add the following to LD 5.6.3:

Step irons shall only be installed in manholes deeper than 1,2 m.

PS LD 5.6.4 **Brick Manholes**

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Add the following to LD 5.6.4.3:

Walls of brick manholes, as well as the extension of precast manholes above the concrete roof slab, shall be plastered internally. External plasterwork shall extend to at least 150 mm below ground level. Manholes shall not be extended above the concrete roof slab by more than 300 mm with brickwork.

If manhole covers are raised with bricks, a half-brick recess, as a foothold, shall be left directly below the concrete slab above the step irons.

PS LD 7 **TESTS**

PS LD 7.1 **GENERAL**

Add the following to LD 7.1.5:

All tests shall be repeated after the completion of backfilling of pipe trenches.

PS LD 8 **MEASUREMENT AND PAYMENT**

PS LD 8.2 **SCHEDULED ITEMS**

PS LD 8.2.3 **Manholes**

Add the following to LD 8.2.3:

PS LD 8.2.3.1 **Precast concrete manholes Unit : No**

Precast concrete manholes shall be measured complete as indicated on the drawings and the rate shall be all inclusive for benching, step irons, type 4 CI cover and frame, and it shall make provision for all additional excavation and backfilling.

The depth of manholes as mentioned in the schedule of quantities, shall be measured from the final cover level to the outlet invert level (flow level).

PS LD 8.2.3.2 **New manholes on existing pipe lines Unit : No**

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The tendered rate shall be all inclusive for the connection of all new pipes to the manhole, the handling of sewage flow, all excavation and backfilling, cutting of pipe and supply and installation of the new manhole, complete as described in PS LD 8.2.3.1 above, with finish and benching to accommodate the level difference of approximately 200 mm.

PS LD 8.2.11 **Connection To Existing Sewers** **Unit : No**

Add the following to LD 8.2.11:

Separate items will be scheduled for each diameter of connecting pipe.

The tendered rate shall include full compensation for all plant and labour associated with connecting the proposed pipe, cutting the pipe to suit the connection, supplying and building in the short junction pipe, dealing with existing flow, preventing foreign material from entering the sewer and making the connection.

The excavation for pipelines, pipes, backfilling and extra couplings shall be measured separately.

Where a direct connection is made to an existing pipe, the rate covers all labour involved in opening the existing pipe, the removal of the existing end cap and disconnection at the pipe.

PS LD 8.2.13 **Connection to Existing Structures** **Unit : No**

Separate items will be scheduled for each diameter of connecting pipe.

The tendered rate shall include full compensation for the plant and labour to break into the existing concrete structure, disposal of rubble, cutting the pipe to suit the connection, dealing with existing flow, preventing foreign material from entering the sewer and building the pipe into the concrete work complete as described in PS G 8.10.

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PS M : ROADS (GENERAL)

PS M3 **MATERIAL**

PS M 3.2 **RESPONSIBILITY FOR LOCATION**

Add the following to M3.2:

The subbase and base layers of all roads shall be constructed with material from designated borrow areas. The Contractor is responsible for the selection of the material in the borrow areas and if the material in the paving layers do not comply with the minimum requirements it shall be removed and replaced with suitable material at the expense of the Contractor.

PS M 3.3 **REQUIREMENTS FOR GRAVEL WEARING COURSE**

The gravel wearing course as listed in the bill of quantities shall comply with the following:

Table 1 : Requirements for Gravel Wearing Course

Parameter	Limit Type 1
Maximum size, mm	37,5
Oversize index (1_o) (maximum), %	0
Shrinkage product (S_P)	100 – 240
Grading coefficient (G_C)	16 – 34
CBR at ≥ 95 % modified AASHTO compaction (soaked value) (minimum), %	≥ 15
1_o = Oversize index (per cent retained on 37,5 mm sieve) S_P = Linear shrinkage x (per cent passing 0,425 mm sieve) G_C = (Per cent passing 25,0 mm – per cent passing 2,0 mm) x per cent passing 5,0 mm/100	

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Table 2: Recommend material specifications for unsealed rural roads

Parameter	Limit Type 1
Maximum size, mm	(h) 37,5
Oversize index (1 _o) ^a	(i) ≤ 5 %
Shrinkage product (S _P) ^b	(j) 100 – 365 (max. of 240 preferable)
Grading coefficient (G _C) ^c	(k) 16 – 34
Soaked CBR (at 95 per cent Mod AASHT0 compaction)	(l) ≥ 15 %
Treton impact value (%)	(m) 20 - 65
a 1 _o = Oversize index (per cent retained on 37,5 mm sieve) b S _P = Linear shrinkage x (per cent passing 0,425 mm sieve) c G _C = (Per cent passing 25,0 mm – percentage passing 2,0 mm) x percentage passing 5,0 mm/100	

PS M 5 **CONSTRUCTION**

PS M 5.1 **SELECTION**

The Contractor shall deal selectively with material in order that suitable material is not contaminated with unsuitable material. If suitable material is contaminated, the Contractor shall replace such contaminated material with suitable material, at his own expense.

PS M 6 **TOLERANCES**

PS M 6.3 **FREQUENCY OF CHECKS**

Add the following to M 6.3:

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These checks shall be submitted to the Employer's Agent for his approval.

PS M 7 **TESTING**

PS M 7.3 **ROUTINE INSPECTION AND TESTING**

Substitute M 7.3.3 with the following:

Statistical evaluation of test results shall not be applicable to this contract and all tests shall meet the specified minimum requirements for the specific material.

PS M 8 **MEASUREMENT AND PAYMENT**

Add the following to M 8.1:

The cost of all routine testing done by the Employer's Agent, and of which the results do not comply with specified minimum requirements for the material, shall be borne by the Contractor.

These costs shall be deducted from the Contractor's monthly payment certificates.

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C3.3 MECHANICAL AND ELECTRICAL ENGINEERING

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C3.3 ENGINEERING

C3.3.1 DESIGN SERVICES AND ACTIVITY MATRIX

Responsibility for design of works, per design stage:

Concept, feasibility and overall process	Employer (Engineer)
Basic engineering and detail layout to tender stage	Employer (Engineer)
Final design to be approved for construction stage	Employer/Contractor
Temporary works	Contractor
Preparation of "record" drawings	Contractor

C3.3.1 EMPLOYER'S DESIGN

The Employer, through the services of the Engineer, has designed the process layout and civil structures required to produce treated effluent that complies with the General Authorisations for the release of treated effluent to a watercourse as published by the Department of Water and Sanitation.

Any changes to the process or civil design that the contractor may require to suit his particular equipment must be submitted with the tender document. Full details of the changes, including cost implications where applicable, must be provided at the time of tender.

C3.3.2 DESIGN BRIEF

The contractor shall be responsible for the design of his own proprietary equipment and systems. All designs shall be done in accordance with good engineering practise, based on the specifications and types of materials specified in the tender document.

The Contractor shall ensure that all equipment designed and/or provided and installed by him shall be of robust construction capable of performing the desired work/duty in an efficient manner.

Although the Engineer may approve plans and designs of the Contractor, this does not exempt the Contractor from this responsibility. The professional responsibility for such designs shall remain with the Contractor and his Engineer.

C3.3.3 DRAWINGS

The drawings are provided in "**Book of Drawings**" of the tender documents in A2 size. Standard drawings are contained in this document.

Additional construction drawings will be issued to the Contractor by the Engineer/Employer on the commencement date and from time to time as required.

C3.3.4 DESIGN PROCEDURES

The provision of all structures to accommodate the plant and the construction of all foundations and structures will be the subject of another Contract but where applicable, will be carried out in accordance

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with the requirements of the Contractor under this Contract.

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Data Submitted at Tender Stage and Preliminary Design Basis

The information called for in this section “C3.3: Engineering” and/or the Data Sheets and any approved alterations by the Tenderer (agreed to under “Deviations” on the Form of Offer and Acceptance), as well as the Tender drawings, in the form of diagrams and bound into this document shall form the basis of the final approved design under this section. It is assumed that Contractor have visited the Site of Works and have satisfied himself as to the means of access and everything affecting the delivery, storage, handling and complete erection and installation of the plant.

Preliminary drawings and tender data typically consist of the following:

- Dimensioned scale drawings of the layout of all the plant with information regarding space requirements, loading on supporting structures and major openings to be left in the structure etc.
- Full and detailed description and illustrations or drawings of the plant and ancillaries and of materials used in the construction thereof.

C3.3.4.1 Compliance with Regulations

All equipment including temporary works and construction equipment must comply with the requirements of the Machinery and Occupational Safety Act, 1983 as amended. The Contractor must meet all costs involved should alterations be necessary to secure compliance with the regulations mentioned.

C3.3.4.2 Construction Stage Data and Drawing

This section shall be governed by the requirements of the Conditions of Contract as defined and amended in “Part C1: Agreement and Contract Data”. In addition to this, the Contractor shall supply the Engineer, in triplicate, with the following information within four (4) weeks of the acceptance of his tender for any portion of the Contract:

- fully dimensioned drawings of the plant ordered.
- the necessary data concerning the geometry of structures housing the plant.
- the positions and sizes of all foundations, bolt holes, openings in walls or floors and all other special features affecting the design and construction of the Works.

This information will be used by the Employer to arrange for the necessary alterations to concrete work designs, foundations, bolt holes, openings for pipes, cable ducts, etc. for the proper erection and installation of the plant under this contract.

Any cutting or alteration of structural work arising from inadequate or incorrect dimensions and particulars afforded by the Contractor, or through late receipt of such particulars, will be arranged by the Engineer to be carried out at his discretion at the expense of the Contractor under this Contract.

C3.3.4.3 Guarantee

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The Tenderer shall submit performance details of the plant, where called for in the information sheets and these details shall be taken as the guaranteed figures of the performance of the plant. Should the overall performance of the plant fail to comply with these figures by more than five per cent (5 %), then the Engineer shall have the right to reject the plant, to recover all monies paid to the Contractor under the contract for such plant and to confiscate the surety by way of liquidated damages, whereupon the Contractor at his own expenses shall remove all rejected plant when ordered to do so by the Engineer.

All equipment shall be guaranteed against incorrect application, faulty design, materials and workmanship for a period of twelve (12) months from the date of commissioning. During this period the Contractor shall rectify, at this own cost, any defect which can be attributed to faulty design, materials and workmanship. Normal wear and tear shall be excluded.

C3.3.4.4 Factory Test

Switchboards must be inspected and tested by the contractor at the premises of the switchboard manufacturer. Tenderers must make provision for all equipment necessary to test the operation of the boards for compliance with the specification, inclusive of all protection devices.

Once the contractor under this contract is satisfied that the switchboard is to specification, the Engineer must be notified in writing and he will then inspect and test the switchboards at the premises of the switchboard manufacturer. Should the switchboard fail due to non-compliance with the specification, the cost of the inspection and any re-inspection will be for the account of the contractor, in accordance with SAICE rates.

The cost of the Engineer for the factory test must be borne by the Contractor who will be responsible for the travel arrangements from Rustenburg to the switchboard manufacturer's premises.

C3.3.4.5 Commissioning and Acceptance

On completion of the works, the Contractor must commission all equipment to operational status.

After commissioning the Contractor shall operate the plant successfully for a period of 28 days to enable him to prove to the Engineer that all equipment and the plant as a whole perform to the specified requirements.

On successful completion of this 28-day Trial Operation Period, the Contractor shall inform the Engineer in writing that the plant is fully functional and ready for the taking over inspection as per Clause 32.1, complete with all performance test results required by the Engineer under C3.2.25.

During this period, the Contractor shall submit one copy of the operational and maintenance manual to the Engineer for comment.

Note that the Taking Over/Completion Certificate will not be issued unless the final three copies of the operation and maintenance manuals including any amendments have been submitted to the Engineer. Only then will the contractual stipulations related to the issue of the Taking Over Certificate such as the release of the contract guarantee, be implemented.

Note that should the plant not be ready for taking over, after notification by the Contractor, the

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cost of the Engineer for this unsuccessful inspection shall be borne by the Contractor.

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C3.3.4.6 Final Completion Date

On final completion all work in terms of the contract shall be completed. A certificate of completion shall be issued.

C3.3.4.7 Maintenance Obligations

The Contractor shall maintain all equipment provided in a good working order during the defects liability period.

The defects liability period shall commence on the day following final completion.

The Employer reserves the right to undertake any emergency repair work during the defects liability period without the prior consent of the Contractor without invalidating any guarantees, provided that the contractor is informed verbally, which communication will be confirmed in writing within 24 hours from the verbal communication. The Engineer has the right to decide whether an emergency exists and shall notify the Contractor accordingly. Should this emergency repair work be caused by poor material, faulty workmanship or neglect on the part of the Contractor, the Employer may deduct the cost of the repair work from the outstanding retention money owing to the Contractor.

After the satisfactory completion of the guarantee period, the final certificate shall be issued and all retention money released.

C3.3.4.8 Operation and Maintenance Manuals

Three (3) copies of comprehensive operation and maintenance instructions in the form of hard covered manuals with a rear pocket enclosing prints of relevant "as built" drawings shall be supplied.

All manuals shall be supplied prior to taking-over/acceptance of equipment as stipulated above. The taking-over certificate shall not be issued, nor shall the corresponding payment be made until the above manuals and drawings have been supplied.

Operating instructions shall include:

- Index;
- Pre-start check list;
- Step-by-step description of the approved procedures for all modes of operation of equipment;
- Description of required safety checks.

Maintenance manuals shall include:

- Index;
- Details of routine and regular maintenance work which the manufacturer considers necessary to

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maintain equipment in satisfactory running order;

- Instructions for the repair or replacement of worn or damaged parts;
- Schedules of routine testing of electrical equipment (as recommended by specific suppliers);
- Spare parts list;
- Particular technical data of equipment;
- Preference list, including local agents for the supply and repairs of specific equipment;
- All schematic wiring diagrams pertaining to technical equipment.
- As built CAD drawings of the switchboard construction, wiring diagrams and a functional description of the control of equipment served from the switchboard.
- “Record” drawings of all cables referred to permanent structures as reference point for measurement.

The Contractor shall in addition to supplying the above information, undertake to instruct departmental staff and satisfy himself that they are capable of operating all equipment when it has been commissioned.

C3.3.4.9 Operator Training

During the testing and commissioning period, the Contractor shall train the treatment works operators in the operation and maintenance of the equipment supplied under this contract. Prior to commencement of this operator training, a draft copy of the Operating and Maintenance Manual shall be available on site. On completion of commissioning, the Manual shall be updated in light of experience gained during the commissioning of the plant and the final copies as required in terms of the Contract, shall be submitted.

The entire training period of no less than 10 working days shall be supervised by a certified Class V operator and a representative of the Contractor in full time attendance on Site during the normal 8 hour working day. Course content and presentation shall be of professional quality and training shall be provided on site, as well as at facilities made available by the Employer for this purpose.

Training shall cover the following aspects:

- Theoretical training, including lectures in the theory of sewage treatment, biological nutrient removal technology as implemented in this Contract, and operation of the various configurations.
 - Provision of A0 size laminated, full colour posters of:
 - Layout drawing of the installation
 - Process flow diagram of the entire facility
 - P&ID diagram

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- MV switchgear single line diagram and switching procedures for start-up, shut-down and operation
- Separate MCC single line diagrams for each MCC with start-up, shut-down and operating instructions for all operational modes of the relevant equipment
- Provision of lecture materials (10 sets) including the above diagrams and procedures in a smaller format
- Training of operational staff in the adjustment and determination of the correct setting of the sluice gates, weirs and recycle pumps for the various process configurations.
- Training of the operators in the determination and setting of:
 - the optimum immersion depths for the required oxygen transfer rates
 - bypass facilities
 - process configurations
 - recycle flow rates
 - sludge age control mechanisms
 - structure isolation
- Training of operators in emergency procedures
 - Power failures
 - Chemical dosing
 - Chlorine handling
- Training of operators and maintenance personnel in the operation of MCCs
 - Control system software and/or timer setting
 - Alarm conditions and basic fault finding
 - Overview of PLC programming for the purposes of making changes and re-loading programs if PLCs are replaced (only if used in the Contract)
 - Monitoring and downloading of data from loggers
 - Motor protection relay and settings
- Training of operators and maintenance staff in the inspection and maintenance procedures required for all mechanical and electrical equipment
 - Routine inspection and logging of data
 - Greasing and oil changes

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- Planned preventative maintenance

C3.3.5 BIOLOGICAL REACTOR EQUIPMENT

C3.3.5.1 Scope

This section of the Contract covers the design, supply, delivery, transport, handling, storage, erection, installation, commissioning, testing, adjustment, handing over in complete working order and upholding during the Defects Liability Period of -

- a) Four (4) vertical shaft stirrers in the Anaerobic Zone.
- b) One (1) Self-priming pump in the RAS pump station
- c) Adjustable Overflow Weir

C3.3.5.2 Adjustable Overflow Weir

Adjustable overflow weirs are required at the outlet of the anaerobic basin of the biological reactor for controlling the mixed liquor level in the basin to obtain the required outflow rate.

The weir shall be of robust construction and suitably braced to avoid distortion and shall be made in grade 304 stainless steel. Bearings shall be suitable for submerged operation.

Each adjustable outlet weir shall be manufactured from minimum 4 mm thick SS304 components (may be thicker subject to deflection limit). The maximum flow over the weirs will be 46 l/s. The weirs shall be of sturdy construction with sufficient cross bracing and support members to limit deflection to a maximum of 3 mm at the centre of the span.

The weirs shall be fitted with a hand-wheel for normal operation. The distance between the lowest weir position and top of platform for the hand-wheel will be in the order of 1.5 m.

C3.3.5.3 Vertical Shaft Stirrers

C3.3.5.3.1 General

Four (4) stirrers are required in the anaerobic compartment of the activated sludge reactor for keeping the solids in suspension and for gently mixing the contents of the basins without introducing oxygen through surface agitation.

Raw sewage and return activated sludge will be introduced into the anaerobic compartment. Preferably, the horizontal zones of maximum turbulence should be as close to the floor of the basin as possible. Scour velocities near the bottom shall be such that sludge which has settled during a power failure will be lifted and brought back into suspension. The maximum concentration of the sludge will be 5 000 mg/l and the sludge will be flocculent having a SVI of between 50 and 250. The size of the compartment to be

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stirred is as follows:

Anaerobic Zone: 1 055 m³

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C3.3.5.3.2 Duties of vertical shaft stirrers

The installed motor power for each of the vertical shaft stirrers in both the anaerobic and anoxic zones shall be:

- Anaerobic Zone 1 : 5,5 kW, 4 off

The speed of rotation of these vertical shaft stirrers shall preferably not exceed 25 rpm.

The Tenderer shall supply all relevant information for the proper adjudication of all the units, giving information regarding the type of impeller, size and shape, the tip speed, the pattern of flow in the basin, shaft length and diameter as well as construction.

C3.3.5.3.3 Speed reducers

Speed Reducers shall be selected for continuous operation of 24 hours per day.

Mechanical power ratings (according to AGMA rating) shall be greater than 2.25 times the installed power and shall account for D.O.L. starting of the unit at full load conditions (maximum immersion). Thermal power ratings shall be based on an ambient temperature of 40°C.

The speed reducers shall be of a type specifically designed to accommodate bending caused by long overhang of the shaft of the stirrer. Bending of the shaft shall not damage the driving gears or the bearings. Worm gears will not be considered and all gears and pinions must be hardened and ground after cutting.

Tenderers shall provide a catalogue of the make of reducer offered.

All bearings shall be designed for a life of at least 100 000 hours at a L10 rating. A dry well for the output shaft lower bearing is required. In addition, the bearings on the output shaft shall be capable of withstanding the resultant forces caused by the combination of radial and axial loads (imposed by the stirrer) acting simultaneously, and shall be selected such that the following condition is complied with:

$$\left(\frac{\text{actual radial load}}{\text{permissible radial load}} \right) + \left(\frac{\text{actual axial load}}{\text{permissible axial load}} \right) \leq 1$$

(where the "permissible" loads are the manufacturer's figures for 5 000 hours at a L10 rating).

Tenderers shall indicate what these forces are and how they are accommodated.

Casings shall be made of close grained cast iron and shall be designed such as to prevent moisture from entering.

Each speed reducer shall be fitted with a nameplate showing at least the following information:

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- i) Speed reducer type or model number
- ii) Serial number
- iii) AGMA rating
- iv) Nominal ratio
- v) Approximate oil quantity required

C3.3.5.3.4 Corrosion protection

All steel pipes and equipment manufactured in mild steel shall be thoroughly cleaned by grit blasting and coated within four (4) hours after cleaning with a polyamide-cured epoxy system similar and equal to Copon EP2300 or Amercoat 385. The coating shall be built up to dry film thickness of 350 microns minimum, or higher as prescribed by the manufacturer. The manufacturer shall be acquainted with the circumstances under which the product is to be used. Pipes shall be coated externally and internally.

Surfaces exposed to UV shall be coated with one coat of polyurethane enamel (two part) with a minimum thickness of 40 microns.

The tendered price for equipment shall include the cost of providing instruments for testing the thickness of the coating and for testing for pin holes.

Fabrication stainless steel components shall be carried out in a clean workplace, free from contamination with mild steel and care shall be taken in handling to avoid scratching of finished surfaces. Dedicated grinding and polishing elements shall be used and shall not be contaminated with mild steel.

Cut edges, welds and heat affected surfaces shall be pickled and passivated to remove discoloration by means of proprietary pickling and passivating pastes in accordance with the manufacturer's specifications.

After passivating, surfaces shall be thoroughly washed and rinsed with clean potable water to remove any trace of acid. Surfaces shall be allowed to dry, and polished where necessary by means of suitable polishing compounds.

C3.3.5.3.5 Electrical installation

Provision has been made for the required electrical installation under a separate section of the contract.

C3.3.7 PUMPING EQUIPMENT

C3.3.7.1 Scope

This section of the Contract covers the supply, delivery, transport, handling, storage, erection, installation, commissioning, testing, adjustment, handing over in complete working order and upholding during the Defects Liability period of the following equipment:

- a) one self-priming centrifugal type pumps for pumping return sludge (RAS) from the RAS sump to

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the aeration basin, hereinafter called sludge return (RAS) pumps.

- b) Pipework and accessories for above-mentioned pumps.

C3.3.7.2 Type of Pumps

C3.3.7.2.1 Axial Flow Mixed Liquor Recycling Pumps

This section of the contract covers the supply, delivery, erection, installation, putting into satisfactory operation, testing and upholding during the Period of Operation Service of the electrically driven axial flow mixed liquor recycle pumps:

The following table presents the parameters per Reactor (2 of; 1 standby):

From	To	Recycle Ref No	No. of pumps	
			Operation	Standby
Aerobic	Anoxic	a	1	0

THE DRIVING HEAD

The driving head shall consist of a framework incorporating at its upper and lower ends plumber block bearing, each consisting of a spherical bearing assembly with locking bush. The upper shaft shall be carried in these bearings.

The upper bearing will be effectively locked to the shaft and carry all axial loads, whilst the lower bearing can float axially within its housing to accommodate any thermal expansion.

Both bearings shall be spherical double rows of self-aligning units and be sealed against the ingress of liquid. They shall be selected with a B-10 life in excess of 100 000 hours.

For ease of lubrication the bearing grease pipes are brought up to grease nipples on the outer cover. At its lower end the driving head shall incorporate a gusseted rectangular mounting flange which is suitable for bolting to the two steel supporting channels. The bearings shall be grease lubricated above the mounting flange.

MOTOR AND DRIVE

The upper end of the driving head shall incorporate an adjustable bracket for mounting the drive motor giving easy adjustment of "V" belt tension and changing of pulleys. The guards shall be designed to avoid water contamination of the "V" belts and upper bearing whilst allowing adequate air-cooling for the belt.

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The motor power shall be transmitted to the driving head shaft by adequately rate “V” belts such that should one belt break the remaining belt/s will transmit the required power without overload. The motor shall be rated with at least a 1,10-service factor on the maximum absorbed power and be adequate weather proofed for use outdoors.

PROPELLER SHAFT

The propeller shaft shall be constructed from heavy-duty steel tubing to minimize deflection whilst running and be fixed to the upper shaft with a precision machined rigid coupling incorporating a spigot location. Both shafts and coupling shall be designed to transmit the required torque to the propeller and withstand all cantilever loads imposed under any extreme circumstances during operation.

PROPELLER BLADES

The propeller blades shall be manufactured as two separate, diametrically balanced helices. Each helix shall be welded to the tubular shaft and will incorporate a gradual taper from the shaft so that the collection of rags or other materials is impossible.

The propeller blades shall be cast in stainless steel.

THROAT TUBE

The throat tube which shall be constructed from painted mild steel will provide a duct within which the propeller shall operate. A small clearance between the propeller and throat tube shall ensure that a minimum of liquid slip takes place thus maintaining a high efficiency.

OPERATION

The rotational speed shall be varied relatively easily by changing the pulley size. Increasing the rotational speed shall increase the generated head and discharge quantity.

PROPOSED MATERIAL OF CONSTRUCTION

Driving Head Framework	M.S. Painted
“V” Belt Guard	M.S. Painted
Shaft	Bright carbon steel
Propeller	Grade 304 Stainless steel
Throat Tube	Mild Steel H.D. Galv.
Support Channels	Mild Steel H.D. Galv.
Bolts and Nuts below Platform	Grad 304 Stainless steel
Bolts and Nuts above Platform	Mild Steel H.D. Galv.

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TECHNICAL DATA

The following table presents the design requirements:

		Recycle Ref No	Pump rate of each pump (l/s)		
From	To		Min	Max	Design
Aerobic	Anoxic	a	125	220	106

Total head approximately 3m for all pumps.

CONTROL OF PUMPS

These pumps shall be controlled manually although control of these pumps shall be from the main control board, a local stop/start lockout facility shall be provided. An ultrasonic with bracket and controller shall be provided for each pump station for level control

C3.3.7.2.2 Horizontal self-priming centrifugal pumps

The return activated sludge pumps shall be of the horizontal, self-priming, centrifugal type specifically designed for the handling of raw, unscreened domestic sewage. Each pump, at its rated speed, shall be designed to retain adequate liquid in the pump casing to ensure automatic re-priming in a complete open system without suction or discharge check valves and with a dry suction leg.

The openings and passages of the pump shall be large enough to permit the passage of a sphere of 75 mm in diameter. The pump shall be equipped with a removable cover plate weighing not more than 30 kg, allowing complete access to the pump interior without disturbing suction or discharge piping.

The pump shall also be fitted with a replaceable wear plate. Replacement of the wear plate, impeller and seal shall be accomplished through the removable cover plate. The entire rotating assembly, which includes the bearings, shaft, seal and impeller, shall be removable as a unit without disturbing the pump volute or piping.

Pump casings and impellers shall be of close-grained cast iron. Impellers shall be of 2-vane or 3-vane, semi-open, non-clog design, with integral pump-out vanes on the back shroud and shall thread onto a pump shaft of stainless steel. Means shall be provided for external adjustment of the impeller to the wear plate.

The shaft shall be covered and protected with a removable sleeve. The shaft shall be contained within a bearing pedestal of ample size with heavy duty ball thrust bearing and radial bearing of adequate size to withstand all imposed loads. Bearings shall be oil lubricated, with the bearing pedestal cooled by the

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pumped liquid.

The pump shaft shall be sealed against leakage by a balanced mechanical seal, the stationery seal seat of which shall be double floating and self-aligning during shock loads that will cause deflection, vibration and axial or radial movement of the pump shaft.

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The mechanical seal shall be installed within a separate oil filled reservoir of the pump pedestal, the oil being both a lubricating and cooling media.

The seal shall be removable and replaceable through the cover plate opening.

The pumps shall incorporate moulded, one piece tapered, suction check valves that can be removed or installed through the removable cover plate opening without disturbing the suction piping.

The pump volute casing shall contain no openings of a lesser diameter than the sphere size specified. Screens or any internal devices that create a maintenance nuisance or interfere with priming and performance of the pump will not be permitted.

The pedestal base of the pump shall be of cast iron with moulded flanges of adequate size to accommodate the holding down bolts. The pumps shall be close coupled on a common base plate to their respective motors.

C3.3.7.2.2.1 Ancillary pump equipment and pipework

Each pump set shall be fitted with the necessary approved pipework, calibrated glycerine filled pressure gauges suitably dampened against vibration, flexible couplings to allow servicing, pipe supports, bends, resilient seal gate valves and non-return valves (suitable for 16 bar pressure rating), and with suitable connections and stopcocks for fitting the necessary pressure gauges. Pressure gauges shall be supplied on the delivery side of each pump. Gauges shall be fitted with clog free, in-line pressure sensors with flexible rubber sleeves of the membrane type.

Each discharge pressure gauge shall have a maximum reading of not more than twice the closed valve pressure of the pump.

Fully detailed drawings showing the proposed layout of pumps and pipework shall be submitted with the tender. The suction pipework shall be supplied complete under this contract and shall include for each pump to have a suction pipe-work, DN150 or larger to suit the pump offered, starting in the sump and terminating at the pump in such a way as to allow ease of maintenance. Each suction pipe shall also include for a bell mouth, puddle pipe for building into the wall and flexible coupling as required.

All delivery manifold pipework (DN200), gate valves (to isolate each pump and associated check valve), check valves, flange adaptors (for servicing and removal of check valves) shall be to suit a velocity of less than 2,0 m/s. The pipelines shall be designed and fabricated from mild steel in accordance with the General Mechanical Specifications (PMA) and shall terminate in a flanged DN200 pipe, 600mm outside the pump station sump.

All pipework with local high points where air can be trapped shall be equipped with the necessary drains and air cocks or automatic air release equipment with pipe connections for discharging from the drains to the drainage channels or sumps as applicable. The installation shall be neat and workmanlike and shall facilitate ease of operation and dismantling of the various components.

The pipework shall be of mild steel with corrosion protection as specified and shall be flanged and drilled to SABS 1123 for a working pressure of 1 000 kPa (10 bar). Bends and branches shall provide non-turbulent flow conditions and the layout of the pipework shall be such as to facilitate dismantling and

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inspection. The pipes are to be properly supported and so arranged that all stresses created in the pipeline by static and dynamic forces including recoil shock, will be taken up by suitable anchors.

Unless a specific size is specified, pipework shall be sized so as to limit maximum flow velocities to 2,0 metres per second, but no pipes shall a diameter of less than 150 mm.

All suction and delivery pipework shall be provided with a flexible coupling in a convenient position to facilitate removal and reinstallation of pumps and no-return valves. Check valves on delivery mains shall only be used in a horizontal position.

All brackets and supports in the dry well of pump stations shall be of galvanized mild steel and shall be of grade 304 stainless steel in wet wells of pump stations.

C3.3.7.2.2.2 Lubrication

Efficient means of lubrication shall be provided for all bearings; full details of which shall be submitted at the time of tendering.

C3.3.7.2.2.3 Air release

All pipework with local high points where air can be trapped shall be equipped with the necessary drains and air cocks or automatic air release equipment with pipe connections for discharging from the drains to the drainage channels or wet sumps as applicable.

C3.3.7.2.2.4 Gland sealing

The method of gland sealing of the pumps shall be by means of mechanical seals. Seals shall be of Tungsten carbide on the outer face and ceramic on the inside face.

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C3.3.7.3 Pump Duties

ONE SELF-PRIMING PUMP DELIVER 25ℓ/s@ 1M HEAD

Bottom water level in tank	1421.97 m
Top water level in tank	1424.97 m
Top of perimeter wall	1430.00 m

Delivery main:

Diameter (304 stainless steel)	150 mm
Approximate length	90 m
Maximum static head	6.4 m
Minimum static head	5.7 m

C3.3.7.4 Site Testing of Pumping Plant

On completion of erection of the pumps and of rendering them operational, the Contractor shall make suitable arrangements to test them in the presence of the Engineer.

Each pump shall be tested over its whole range of delivery. Where pumps are to operate in parallel, tests shall also be carried out to check these operating conditions.

The rate of delivery during testing shall be determined by cutting off the inflow to the sump and timing the drop in water level therein. Where this is not possible, other appropriate measurements shall be taken.

During the tests, the average values of voltage and current drawn by the motor shall be noted and recorded. Motor efficiencies and power factors shall be used as supplied by the manufacturer.

The test results shall be compared with the tendered pump characteristics and the following tolerances will be allowed:

Delivery rate : - 0 to + 10%

Overall efficiency : - 5%

In the event of the pumps failing to achieve the tendered performance in regard to discharge or efficiency within the tolerance allowed, then the Employer shall have the right to reject the pumps, to recover all monies paid to the Contractor under the Contract for such pumps and to confiscate the surety by way of agreed and liquidated damages; whereupon the Contractor at his own expense shall remove all rejected plant where ordered to do so by the Engineer. Alternatively the Engineer shall have the right to negotiate with the Contractor a reduction in the price of the pumping plant based on the increased power consumption over an 8 year life.

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Each pump shall be operated and a check made that no undesirable effects occur when it is tripped.

C3.3.7.5 Characteristic Curves For Pumps

The Tenderer shall submit the following characteristic curves of performance of the pumps offered.

- Pump (1) head - quantity curve
- (2) efficiency curve
- (3) NPSH curve
- Motor (1) efficiency curve
- (2) power factor curve

C3.3.7.6 Electrical Installation

Provision has been made for the required electrical installation under a separate section of the contract.

C3.3.7.7 Corrosion Protection

All steel pipes and equipment manufactured in mild steel shall be thoroughly cleaned by grit blasting and coated within four (4) hours after cleaning with a polyamide-cured epoxy system similar and equal to Copon EP2300 or Amercoat 385. The coating shall be built up to dry film thickness of 350 microns minimum, or higher as prescribed by the manufacturer. The manufacturer shall be acquainted with the circumstances under which the product is to be used.

Pipes shall be coated externally and internally.

Surfaces exposed to UV shall be coated with one coat of polyurethane enamel (two part) with a minimum thickness of 40 microns.

The tendered price for equipment shall include the cost of providing instruments for testing the thickness of the coating and for testing for pin holes.

Fabrication stainless steel components shall be carried out in a clean workplace, free from contamination with mild steel and care shall be taken in handling to avoid scratching of finished surfaces. Dedicated grinding and polishing elements shall be used and shall not be contaminated with mild steel.

Cut edges, welds and heat affected surfaces shall be pickled and passivated to remove discoloration by means of proprietary pickling and passivating pastes in accordance with the manufacturer's specifications.

After passivation, surfaces shall be thoroughly washed and rinsed with clean potable water to remove any traces of acid. Surfaces shall be allowed to dry, and polished where necessary by means of suitable polishing compounds.

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C3.3.8 FINAL CLARIFIER EQUIPMENT

C3.3.8.1 Scope

This section of the Contract covers the supply, delivery, transport, handling, storage, erection, installation, commissioning, testing, adjustment, handing over in complete working order and upholding during the Defects Liability Period of mechanical equipment for ONE final clarifier.

C3.3.8.2 Tank shape

One final clarifier will be built in concrete and will have an internal diameter of 19 000 mm and a side water depth of approximately 4 000 mm. The floor of the tank will have a slope of ± 10 degrees to the horizontal to assist the sludge being scraped towards the central sludge collecting hopper from where it will be withdrawn continuously through the sludge draw-off pipe. Typical details of the tank are shown on the drawings.

The effluent launder will be built in concrete against the inner perimeter of the tank wall. The inlet feedwell will be supplied and installed under the mechanical bill.

The maximum feed rate per clarifier shall be 36 *l/s*.

The equipment to be supplied shall include a centre feedwell and its supporting structure, access bridge complete with handrails, open steel flooring, kicker plates and ladder, scraper blades and support system, scum skimmer, baffles, hopper and outlet pipe, adjustable serrated overflow weir as well as the driving mechanism consisting of a motor, gearbox, driving wheels etc.

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C3.3.8.3 Access bridge

The rotating access bridge shall be supported by a hinged bearing in the centre of the inlet structure and by driving and supporting wheels at the peripheral external wall of the final clarifier.

The bridge shall be designed for a uniformly distributed live load of 2 500 N per square metre of walkway area and shall be manufactured in mild steel with corrosion protection to specification. The bridge shall furthermore be designed with a camber sufficient to completely cancel the deflection which will be produced by the dead load of the complete bridge with scraper mechanism attached, the latter unsubmerged. The bridge shall have a walkway not less than 750 mm wide consisting of heavy duty hot dipped galvanised open steel flooring and equipped with heavy duty hot dipped galvanised hand and kneerails on both sides, all as specified with 100 x 4,5 mm heavy duty hot dipped galvanised steel kicker plates attached to both sides of the bridge.

The height of the tank wall above the surrounding ground will be of the order of 900 mm. A heavy duty hot dipped galvanised ladder shall be rigidly fixed to the outer end of the bridge to provide access thereto.

The rotating bridge shall be driven by an electric motor through a speed reducer giving a peripheral speed of not more than 1.5 – 2.0 metres per minute. The driving and supporting wheels shall have wearing surfaces consisting of tyres of an approved synthetic material with good wearing properties. The wheels must be accurately aligned so that the plane of rotation is normal to a line drawn through the pivot of the wheel and the centre point about which the bridge rotates, so as to minimise wear of the tyres. The supporting wheels shall be fitted with a protective cover and provided with a front mounted adjustable guard that will push foreign objects off the wall and to the outside thereof. The drive train shall incorporate a safety device to prevent damage to the system should obstructions or overloads occur.

The underside of the rotating bridge and the underside of the backing plates for the squeegees shall have sufficient clearance to prevent any touching between metal and concrete when the tyres are worn down. The spacing of the wheels shall be such as to give adequate lateral stability to the bridge. All lubricating points on the driving mechanism and wheels shall be such that no grease is deposited on the concrete surface on which the wheels run.

C3.3.8.4 Scraper mechanism

The scraper mechanism shall scrape the entire floor area and shall be of the spiral type with a constant “angle of attack” of 30°. The scrapers shall be fitted to an underwater support system suspended from the overhead rotating bridge. The scraper mechanism and bridge shall form one rigid unit but there shall be some adjustment in the level of the floor scrapers. The scrapers shall consist of metal back plates fitted with neoprene rubber squeegees. The back plate and squeegees shall be shaped to suit the curvature of the conical floor at all points. The back plate shall have a minimum thickness of 6 mm and minimum height of 400 mm. Care must be taken to minimise the wear on the squeegees but no supporting wheels will be considered. The rods suspending the scrapers from the bridge shall be sufficiently sturdy to keep the scrapers in their relative positions without the metal backplate coming into contact with the floor. The entire scraper assembly shall be vertically adjustable by 30 mm for ease of installation and shall be manufactured in mild steel of minimum 6 mm thickness.

A scum baffle consisting of 3,0 mm thick SS304 steel plate 400 mm wide with 300 mm immersion shall be

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provided along the full length of the overflow weir, supported by SS304 brackets adjustable in a horizontal direction.

A scum skimmer 3,0 mm thick and 300 mm wide to skim the entire water surface area within the scum baffle and a scum receiving hopper (both in SS304) shall be provided. Included in the price shall be all pipework up to the uPVC piping as shown on the drawing.

The scum hopper shall measure at least 1 000 mm in a radial direction and 300 mm in the direction parallel to the overflow weir. The hopper shall be supported on the side wall of the launder and shall have sufficient cross bracing to ensure rigidity. The part of the scum skimmer passing over the hopper shall be pivoted and shall be arranged in such a way that it will lift clear of the hopper from a point 300 mm ahead of the hopper by means of raised rails in front of and behind the hopper.

The hopper shall have three of its sides projecting above the water line while the fourth side (the beach facing the approaching scum skimmer) shall be an adjustable overflow which shall be submerged under all flow conditions, that is, the level thereof shall be slightly lower than the bottom of the V-notch in the overflow weir. The beach shall extend at an angle of 15 ° to the bottom of the scum board. It shall be possible to adjust the level of the beach-overflow up or down by approximately 25 mm each way. The discharge pipe from the hopper shall have a capacity in excess of the maximum rate of flow into the hopper (over the overflow) but shall not be less than 150 mm in diameter 6 mm wall thickness and manufactured in SS304 so as to provide a proper flush of the hopper when the control valve is fully open. The volume of the hopper shall not be excessively large.

The control valve shall be situated inside the hopper and a projecting arm shall be attached to the bridge which shall open the valve on the scum discharge pipe from the hopper when the scum skimmer is about one metre from the hopper and close the valve when the skimmer has just passed over the far end of the scum hopper. During the remainder of the bridge's rotational period the valve shall shut tight so as to prevent leakage. The valve shall preferably consist of a weighted bung capable of shutting off the discharge pipe.

The scraper mechanism must be complete with access bridge, electric motor, speed reducer, wheels, scraper arm and blades, surface scum skimmer, scum baffle, scum receiving hopper, scum discharge pipe, control valve, all necessary stays, bearings, etc.

C3.3.8.5 Inlet structure

The centre column for supporting the bridge and feedwell shall be manufactured in 3CR12 and shall be bolted to the centre column provided by the civil contractor to the extent as shown on the drawings.

The inlet structure shall consist of an energy dissipating inlet (EDI) within a larger feedwell, both supplied under the mechanical bill.

The outlet ports of the EDI shall be sized to produce a maximum velocity of 0,75 m/s at maximum flow and shall be located at least 600 mm below water level.

The depth of the feedwell shall extend at least 1000 mm below the outlet ports. The diameter of the feedwell shall be at least 20% of the clarifier diameter.

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The EDI and feedwell shall be manufactured from 3CR12 of a suitable thickness.

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C3.3.8.6 Overflow weir

An adjustable serrated overflow weir made of 3,0 mm thick SS304 steel plate to the dimensions as shown on the drawings shall be provided and installed on the inside face of the concrete wall of the launder. After installation the effluent shall discharge freely and evenly around the whole circumference of the tank without leakage through the joint between the weir and the wall or the joints between the weir sections. Tenderers shall allow in their prices for sealing against "off the shutter" concrete finish and between ends of weir sections with an approved durable material such as closed cell expanded neoprene.

C3.3.8.7 Pipework

The contractor shall install the inlet connection pipe between the centre column and the feedwell as well as the scum discharge pipe and all other special pipes and fittings required.

C3.3.8.8 Speed reducers

Speed reducers shall be selected for continuous operation 24 hours per day. Mechanical power ratings (according to AGMA) shall be greater than twice the installed power. Thermal power ratings shall be based on an ambient temperature of 40° C.

Tenderers will be required to provide a catalogue of the make of speed reducer offered and to indicate how the selection was made.

All gears and pinions shall be hardened and ground after cutting.

Worm gears will not be considered.

All bearings shall be designed for a life of at least 100 000 hours at a B10 rating.

Casings shall be made of close grained cast iron and shall be designed such as to prevent moisture from entering.

C3.3.8.9 Corrosion protection

All steel pipes and equipment manufactured in mild steel shall be thoroughly cleaned by grit blasting and coated within four (4) hours after cleaning with a polyamide-cured epoxy system similar and equal to Copon EP2300 or Amercoat 385. The coating shall be built up to dry film thickness of 350 microns minimum, or higher as prescribed by the manufacturer. The manufacturer shall be acquainted with the circumstances under which the product is to be used. Pipes shall be coated externally and internally.

Surfaces exposed to UV shall be coated with one coat of polyurethane enamel (two part) with a minimum thickness of 40 microns.

The tendered price for equipment shall include the cost of providing instruments for testing the thickness of the coating and for testing for pin holes.

Fabrication stainless steel components shall be carried out in a clean workplace, free from contamination

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with mild steel and care shall be taken in handling to avoid scratching of finished surfaces. Dedicated grinding and polishing elements shall be used and shall not be contaminated with mild steel.

Cut edges, welds and heat affected surfaces shall be pickled and passivated to remove discoloration by means of proprietary pickling and passivating pastes in accordance with the manufacturer's specifications.

After passivation, surfaces shall be thoroughly washed and rinsed with clean potable water to remove any traces of acid. Surfaces shall be allowed to dry, and polished where necessary by means of suitable polishing compounds.

C3.3.8.10 Electrical installation

Provision has been made for the required electrical installation under a separate section of the contract.

C3.3.9 CONTROL VALVES

C3.3.9.1 Gate Valves

C3.3.9.1.1 Scope

This section of the Contract covers the supply, delivery, transport, handling, storage, erection, installation, commissioning, testing, adjustment, handing over in complete working order and upholding during the Defects Liability period of knife-gate valves.

C3.3.9.1.2 General

The valves shall be installed as shown on the drawings.

C3.3.9.1.3 Type of valve

The valves shall be light duty, wafer style, knife-gate valve suitable for bi-directional flow. The valve shall be of robust construction and of slim, light-weight design. The design shall ensure leak-proof sealing against sewage.

Built-in scrapers must be provided to keep the blade clean on both sides during operation. The valve bore shall have a straight-through passage and internal body contours shall ensure that deposits are flushed out during valve operation. The valve body shall be of cast-iron and the blade of 316 stainless steel. The valve shall be installed with the operating spindle vertical.

C3.3.10 HANDSTOPS, SLUICE GATES, DOWNWARD OPENING WEIRS AND TILTING WEIRS

C3.3.10.1 General

All parts shall be designed for the duty required, but the minimum factor of safety against structural failure shall not be less than 3, based on the working stress of the material. In the design, due consideration shall be given to the thickness of materials with regard to corrosion and operating conditions. The maximum force required at a hand-wheel or crank to raise a gate or open a valve shall be in the order of 100 Newton.

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C3.3.10.2 Construction

Equipment shall be of robust construction and suitably braced to avoid distortion. Bearings shall be suitable for submerged operation. The frames and gates of all sluice gates, handstops and weirs shall be made of grade 304 stainless steel.

All gates shall be well guided with no possibility of jamming. The gates of wall mounted types shall be held uniformly against the side facings of the frames by the action of adjustable wedges and shall provide drop-tight closure under normal operating conditions. Where applicable all penstocks shall be of the level invert type fitted with renewable seals of non-biodegradable material on the invert.

C3.3.10.3 Operating Equipment for Sluice Gates and Adjustable Weirs

All sluice gates and adjustable weirs shall be hand operated and shall have rising spindles protected by suitable Perspex Sleeves. Hand wheels shall be of cast iron with diameters to suit operating either directly on the head frame or on a grade 304 stainless steel tubular pedestal to suit the installation depth. Where necessitated by the mass of the gate and/or the pressure against the gate, suitable gearing shall be provided.

C3.3.10.4 Installation

All sluice gates shall be installed by the Contractor under this Contract. In the case of sluice gates to be fixed against concrete walls, holding down bolts made of 304 stainless steel must be supplied and installed into the concrete work. The Contractor under this Contract shall handle, install and grout all the sluice gates and carry out all necessary adjustments to ensure proper and smooth operation of the penstocks.

C3.3.11 PERFORMANCE ACCEPTANCE TESTS

The Contractor shall carry out the following performance acceptance tests in the presence of the Engineer:

The Engineer shall consider performance to be satisfactory and acceptable when all of the following conditions have been confirmed by the tests:

C3.3.11.1 VERTICAL SHAFT MIXERS

C3.3.11.1.1 Works Testing

Each mixer unit shall be works tested with its own motor over a period of not less than 2 hours and in accordance with a procedure approved by the Engineer to check for oil tightness, lubrication, oil temperature, meshing of gears where applicable, and bearing clearance.

C3.3.11.1.2 Before Commissioning

- a) Test for correct direction of rotation of all motors

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- b) Test for correct operation and control gear, where provided under this Contract
- c) Test for correct alignment of bearings on all gearboxes and motors (where applicable), etc
- d) Checking mixers in respective basins for alignment
- e) Submit all certification, motor test certificates, mixer tests (workshop), material certificates (where applicable)
- f) Submit all operating and maintenance instructions

C3.3.11.1.3 At Commissioning

Test for degree of mixing

C3.3.11.1.4 After Commissioning

Check equipment for proper functioning, measurement of speed of rotation and power consumption during the trial operation period.

C3.3.11.1.5 During the Defects Liability Period

Check all equipment for correct operation and functioning at 3 months, 6 months and 12 months after plant take-over.

C3.3.11.2 PUMPING EQUIPMENT

C3.3.11.2.1 At Commissioning

Generally, the equipment will be considered acceptable at commissioning when all of the following conditions are satisfied:

- The equipment meets the duty requirements as defined in this section of the specification
- Any other specific performance tests defined in this section prove acceptable operation of the equipment
- Where a power test is required the power absorbed by each motor at duty point does not exceed the values stated in the Data Sheets by more than 5%
- Where vibration test is required, the vibration measured at each point does not exceed the values stated in the Technical Data Sheets
- Where a noise test is required, the noise generated by the equipment does not exceed the values stated in the Technical Data Sheets

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C3.3.11.2.2 After Commissioning

Check equipment for proper functioning, measurement of speed of rotation and power consumption during the Test Period and the Trial Operation Period. The performance of the equipment will be considered acceptable when the requirements as specified have been achieved consistently during the Test Period. The equipment performance shall be checked at 3, 6, 9 and 12 months' intervals during the Defects Liability Period.

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C3.3.12 ELECTRICAL INSTALLATION

This section covers the electrical installation for the upgrade of the Works consisting of switchboards, control gear, cables and all electrical equipment necessary to complete the installation in full working order

C3.3.12.1 GENERAL

- a) The electrical portion of the Works shall comply with the relevant South African National Standards, but as varied by this Detailed Electrical Specification, the Technical Data Sheets and Drawings where available.
- b) References in the Standard Specifications to "Project Specification" shall be read as referring to this Detailed Electrical Specification.

C3.3.12.2 ELECTRICAL SCOPE OF WORK

The electrical portion of this Contract shall include the following:

- a) Populating existing MCC spare bucket with new RAS pump station MCC feeder circuit breaker
- b) Modify existing MCC existing reactor mixer motor starters to suit new existing reactor mixers.
- c) 400VAC LV Motor Control Centre (MCC) for RAS pump station and new SST.
- d) Cable support systems
- e) Field Control Stations for motors
- f) Additional RAS pump
- g) Area lighting
- h) LV cables
- i) Labelling of cables and equipment
- j) Cable supports
- k) Earthing and bonding
- l) Installation of sleeves into buildings
- m) Trenching, backfilling and danger tape
- n) Panel Keys
- o) Testing (FAT, SAT) and commissioning of the electrical installation.
- p) Certificates of Compliance
- q) As-built drawings
- r) Operation and maintenance manuals

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- s) Training
- t) As built drawings

C3.3.12.3 LV SWITCHGEAR AND CONTROLGEAR ASSEMBLY

C3.3.12.3.1 Compliance

The new LV assemblies and all its constituent components and equipment shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 1973	Low-voltage switchgear and Controlgear Assemblies
SANS 60947	Low-voltage switchgear and Controlgear
SANS 60439	Low-voltage switchgear and Controlgear assemblies

C3.3.12.3.2 Existing Reactor Mixer Motor Control Center

- a) New motor starters shall be installed for the new reactor mixer motors (see mechanical specifications for details) in the existing MCC.
- b) Conventional direct-on-line starter (DOL) shall be used for motor starting.

C3.3.12.3.3 Motor Control Centre

- a) A new LV MCC for the new RAS pump station shall be installed in existing MCC building.
- b) The new MCC shall power and control equipment associated to it's designated process areas (RAS Pump Station).
- c) The MCC shall consist of the following:

- 1. Main incomer section.

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2. Metering section with Power Meter.
 3. Functional units for the required incomer, pump motor starters, and other equipment feeders.
 4. Door mounted push buttons and indicators.
 5. Feeder to UPS in RIO panel (instrument and RIO control power).
 6. Terminal strip per functional unit for termination of all control wiring. All control inputs and outputs for motor controls shall be wired to the RIO panel to be connected to the existing PLC. The power supply (main circuit breakers open/close, control voltage, etc.) shall also be wired to the RIO.
 7. Remote I/O (RIO) section (Equipment to populate the panel discussed in electronic section)
- d) The new MCC shall be earthed to the building main earth bar.
- e) Labels on the MCC shall have
1. Tag numbers,
 2. descriptions,
 3. kW ratings and
 4. full load current ratings.

C3.3.12.3.4 Testing and Commissioning

- a) Witnessed factory and site acceptance testing by Engineer shall be carried out by the Contractor. Travel costs for the person shall be included in the tender pricing for the panel, travelling from Rustenburg.
- b) The in-house factory acceptance test (FAT) documents shall be provided to the Engineer prior to the witnessed FAT at least two days prior to the FAT.

C3.3.12.4 LV ELECTRIC MOTORS

C3.3.12.4.1 Compliance

The LV motors shall comply with the latest published Edition of all relevant National Standards including but not limited to:

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National Standard	Description
SANS 1804	Induction Motors
SANS 60034	Rotating Electrical Motors

C3.3.12.4.2 General

- The insulation of all motors to be fed from the new MCC assemblies to be tested.
- New pumps shall be of high efficiency type class (IE3).

C3.3.12.5 FIELD CONTROL STATIONS

C3.3.12.5.1 Compliance

The field control stations and all its constituent components and equipment shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 1973	Low-voltage switchgear and Controlgear Assemblies
SANS 60947	Low-voltage switchgear and Controlgear
SANS 60439	Low-voltage switchgear and Controlgear assemblies

C3.3.12.5.2 General

- Pedestal mounted field control stations shall be installed within arm's length of the installed motors or pumps as far as possible.
- The Contractor shall ensure that the field control stations positions allow for easy access and do not hinder equipment maintenance.
- The field control stations shall be equipped with Start push button and emergency stop (E-Stop) push button.

C3.3.12.6 LV CABLES AND CABLE SUPPORTS

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C3.3.12.6.1 Compliance

The LV cables and supports shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 10142-1	Wiring of Premises Part 1: Low Voltage Installations

C3.3.12.6.2 General

- a) The Contractor shall design detailed cable routes and lengths during construction. Detailed cable routes shall be submitted for the Engineer's approval prior to installation.
- b) The single line diagram indicates the and LV cables based on the Engineer's estimated new equipment loads and estimated cable lengths
- c) The actual cables shall be sized by the Contractor to power equipment offered by the Tenderer, with cable lengths measured following the Contractor's cable routes.
- d) Should the ratings of new equipment offered in the Tender differ from the Engineer's estimates, then the equipment's supply cables shall be sized to suit the equipment offered in the Tender.

C3.3.12.6.3 Installation

- a) Inside the buildings, the LV cables shall be installed on surface mounted cable ladders, and the control and instrumentation cables shall be installed on wire mesh cable trays.
- b) Cables shall be tied in an orderly, planned system, where overlapping of cables are minimized as far as possible. Cables shall not be bundled together but installed flat on the cable ladder or tray adjacent to each other. Cable ladder/tray width shall be designed accordingly.
- c) The final routes of all cable support systems must be approved by the Engineer on site before installation commences.
- d) Control and instrument cables may be run on the same cable tray/ladder as power cables, except where electromagnetic interference may affect the instrumentation signals. Control and Instrumentation cables shall be installed at least 300 mm away from power cables.
- e) Cables shall enter and exit the new MCC panels from the bottom of the panel.

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- f) All surface-mounted conduits used for the installation of LV cables shall be hot dipped galvanized and threaded.
- g) The Contractor shall ensure that the quantity of sleeves into buildings and other concrete structures are adequate, and locations of the sleeves correspond to the locations of his/her equipment.
- h) All incoming sleeves and openings into or at concrete structures and into buildings shall be thoroughly sealed after the cable installation is complete to limit water ingress into sleeves and buildings.

C3.3.12.7 SMALL POWER AND LIGHTING

C3.3.12.7.1 Compliance

The area lighting shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 10142-1	Wiring of Premises Part 1: Low Voltage Installations

C3.3.12.7.2 Street and Area Lighting

- a) One high mast pole mounted LED streetlight shall be provided between the existing SST and new SST to illuminate the area around the SSTs in the evenings.
- b) The high mast shall be supplied for a new area lighting kiosk.
- c) The high mast shall be controlled by means of a contactor and photocell installed in the new area lighting kiosk.
- d) The new area lighting kiosk shall be fed from the new RAS pump station MCC panel.
- e) Light pole shall be supplied complete with foundation, baseplate, glandplate, miniature circuit breakers (one for new high mast and 5 equipped spares), access door and stainless-steel single side entry spigot.

C3.3.12.8 LV EARTHING AND BONDING

C3.3.12.8.1 Compliance

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The earthing and bonding shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 10142-1	Wiring of Premises Part 1: Low Voltage Installations
SANS 10292	Earthing of low voltage distribution systems
SANS 62305-3	Protection against lightning: Physical damage to structure and life hazard

C3.3.12.8.2 General

- All electrical equipment shall be earthed.
- Earth continuity conductors shall be provided with all the LV power cables to electrical equipment and as shown on the single line diagram.
- Earthing conductors shall be PVC-insulated copper conductors or bare earth copper conductor.
- Where no separate earth continuity conductor is shown on the single line diagram, the intention is that a spare core in the power cable shall serve this function.
- The Contractor shall make sure all electrical equipment fed from the new MCC assemblies are properly earthed.
- The Contractor shall make sure the new MCC panels is connected to the building main earth bar.
- All exposed conductive parts and accessible extraneous conductive parts shall be bonded in accordance with SANS 10142-1.

C3.3.13 ELECTRONIC SCOPE OF WORK

C3.3.13.1 GENERAL

- The electronic portion of the Works shall comply with the relevant South African National Standards, but as varied by this Detailed Electrical Specification, the Technical Data Sheets and Drawings where available.

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- b) References in the Standard Specifications to "Project Specification" shall be read as referring to this Detailed Electronic Specification.

C3.3.13.2 ELECTRONIC SCOPE OF WORK

The electronic portion of this Contract shall include the following:

- a) Remote I/O
- b) Instrumentation
- c) Testing (FAT, SAT) and commissioning of the electronic installation.
- d) Certificates of compliance
- e) As-built drawings
- f) Operation and maintenance manuals
- g) Training
- h) Spares

C3.3.13.3 GENERAL ELECTRONIC INSTALLATION

C3.3.13.3.1 Compliance

The new electronic installation and all its constituent components and equipment shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 1973	Low-voltage switchgear and Controlgear Assemblies
SANS 62103	Electronic equipment for use in power installations

C3.3.13.3.2 General Electronic Installation

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- a) The Contractor shall develop a detailed control system architecture for the RAS pump station and his offered equipment and submit a diagrammatic representation thereof to the Engineer for approval prior to detail design and purchase of equipment, manufacture and programming of the control and instrumentation system.

C3.3.13.3.3 System Voltage

- a) 230VAC for MCC contactor coils and MCC controls
b) 24VDC for RIO
c) 230VAC UPS supply
d) 230VAC/24VDC for UPS supply to instrumentation power as required
e) 24VDC for solenoid blocks (if required)
f) 24VDC for digital inputs and outputs
g) 4 – 20mA current for analogue instruments

C3.3.13.3.4 Control Cables

- a) The Contractor shall develop a cable schedule and cable block diagram to suit his equipment offered under the tender and the Contractor shall be deemed to have allowed in his tender all control cabling required to complete the installation.
b) Control cables shall be 600/1000V multicore standard copper conductors. PVC-insulated cables with galvanised steel wire armouring and PVC serving.
c) All control cables installed outdoors or in the ground shall be armoured regardless of installation in sleeving or conduits.
d) All cable glands shall be resistant to corrosion and shall be of the Enviro-gland or approved equivalent type.

C3.3.13.3.5 Instrumentation Cables

- a) The Contractor shall develop a cable schedule and cable block diagram to suit his equipment offered under the tender and the Contractor shall be deemed to have allowed in his tender all instrumentation cabling required to complete the installation.
b) Instrumentation cables shall either be twisted pair or triad standard copper conductors, individually and overall screened, PVC-insulated with galvanised steel wire armouring and PVC serving.

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- c) All instrumentation cables installed outdoors or in the ground shall be armoured regardless of installation in sleeving or conduits.
- d) All cable glands shall be resistant to corrosion and shall be of the Enviro-gland or approved equivalent type.

C3.3.13.3.6 Data Cables

- a) The Contractor shall develop a cable schedule and cable block diagram to suit his equipment offered under the tender and the Contractor shall be deemed to have allowed in his/her tender all data cabling required to complete the installation.
- b) Armoured single mode fibre optic cable shall be installed on site

C3.3.13.3.7 Cable Supports

- a) Control and instrument cables may be run on the same cable tray/ladder as power cables, except where electromagnetic interference may affect the instrumentation signals.
- b) Control and Instrumentation cables shall be installed at least 300 mm away from power cables. Where this is not possible, control, instrumentation and data cables shall be installed in dedicated cable trays.

C3.3.13.4 RIO CONTROL PANEL

C3.3.13.4.1 Compliance

The new RIO panel and all its constituent components and equipment shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
IEC 61131	Programmable Logic Controllers
IEC 61499-1	Function Blocks

C3.3.13.4.2 RIO Panel

- a) The RIO panel shall be part of the RAS pumpstation MCC panel.

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- b) The panel shall house the Remote I/Os, direct current (DC) power supplies, instrumentation distribution and UPS.
- c) The industrial ethernet Remote Input/Output shall be of the same existing PLC system and use the same or similar input / output cards to ensure seamless integration.
- d) The RIO panel shall be provided with an in rack ethernet switch communication card where required to interface with other ethernet devices.
- e) A separate protective earth bar and an insulated earth bar shall be supplied in the RIO panel.

C3.3.13.4.3 Data Cables

The offered RIO shall be capable of multiple communication protocols as follows:

- a) RIO to MCC: Industrial Ethernet
- b) RIO to Digital Power Meter: Industrial Ethernet or Modbus TCP
- c) RIO to PLC: Industrial Ethernet (EthernetIP)

C3.3.13.4.4 Uninterruptible Power Supply (UPS)

- a) Each RIO panel shall be equipped with a UPS which shall provide power to it's remote I/Os and instrumentation during mains failure for the minimum period of 30 minutes.
- b) An isolation transformer on the input side shall be included to ensure voltages remain constant when the neutral supply is cut during generator changeover.
- c) Adequate provision shall be made for ventilation of a UPS when it is installed in the RIO panel.
- d) The UPS system shall be tested on site and the Contractor shall ensure that the associated RIO shutdown and restart automatically without losing any information or requiring operator intervention should the UPS standby period expire before mains power is available again.

C3.3.13.4.5 Remote IO Installation, Inspection and Testing

- a) The installation, termination, earthing and lightning/ surge protection of the enclosure (and all associated components) shall conform to the requirements of the RIO Engineering Specifications.
- b) Comprehensive training and operations & maintenance manuals shall be provided for the assembly, provided for the plant or works under this contract, all as described in the Engineering Specification.

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- c) Prior to commissioning of the remote IO and witnessing by the Engineer, the Contractor shall complete cable loop testing for all IOs and peripheral connections to the remote IOs by means of an IO list check. The completion of the IO list checking shall be provided to the Engineer in writing and only thereafter shall the installation be witnessed by the Engineer.

C3.3.13.5 INSTRUMENTATION

C3.3.13.5.1 Compliance

The new instruments shall comply with the latest published Edition of all relevant National Standards including but not limited to:

National Standard	Description
SANS 60947-5	Low-voltage switchgear and Controlgear Part 5: Control circuit devices and switching elements

C3.3.13.5.2 Field Instrumentation

- a) Field instrumentation shall be provided, as per P&IDs (piping and instrumentation diagrams), to provide the required monitoring and control.
- b) Conventional 4-20 mA current loops shall be used for continuous measurement, and 24V DC or potential-free contacts for discrete measurement.
- c) The following instrumentation will be provided:

1. Dissolved Oxygen Meter

- Measurement ranges:
 - Dissolved oxygen: 0.01 ppm to 20 ppm
 - Saturation: 0 to 200%
- Response Time: 95% under 60 seconds
- Minimum 2 years' guarantee
- Connections for an oxygen sensor with integrated Pt1000 temperature probe, e.g. Swansensor Oxysafe1000 and for a SWAN digital sample flow meter (QV-Flow or deltaT-Flow) or similar.
- Automatic temperature and air pressure compensation.
- Easy user menus in English.
- Simple programming of all parameters by keypad.
- Electronic record of major process events and calibration data

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- Real-time clock for time stamp in data logs and for automated functions.
- Data logger for 1'500 data records stored at a selectable interval, including data download to PC functionality and required terminal interface.
- Galvanically separated sensor connection.
- Overvoltage protection for in- and outputs.
- Two current signal outputs (0/4 - 20 mA) for measured signals.
- Potential-free alarm contact as summary alarm indication for programmable alarm values and for instrument faults.
- Two potential-free contacts programmable as limit switch or PID-control.
- Input for potential-free contact to freeze the measuring value or to interrupt control in automated installations (hold function or remote-off).

2. pH Meter, integrated with Electrical Conductivity

- Measuring range:
 - 0 to 14 pH respectively -500 to +1500 mV
 - 0.05 μ S/cm to 100 mS/cm
- Response Time: 95% under 60 seconds
- Sensor connections for a pH or ORP sensor, reference electrode, Pt1000 temperature and for a digital sample flow meter (QV-Flow or deltaTFlow).
- For the connection of a four-electrode conductivity sensor with integrated Pt1000 temperature sensor like Swansensor Shurecon P or Swan sensor Shurecon or similar
- Galvanically separated sensor connections.
- Automatic temperature compensations according to Nernst with or without correction functions.
- Values for pH buffer solutions and redox calibration solution programmable.
- Big backlit LC display for the reading of measuring value, sample temperature, sample flow, temperature compensation type and operating status.
- Easy user menus in English.
- Simple programming of all parameters by keypad.
- Electronic record of major process events and calibration data.
- Real-time clock for time stamp in data logs and for automated functions.
- Data logger for 1'500 data records stored at a selectable interval.
- Overvoltage protection for in- and outputs.
- Two current outputs (0/4 - 20 mA) for measured signals.
- Potential-free alarm contact as summary alarm indication for programmable alarm values and for instrument faults.
- Two potential-free contacts programmable as limit switch or PID-control.
- Input for potential-free contact to freeze the measuring value or to interrupt control in automated installations (hold function or remote-off).
- Minimum 2 years' guarantee

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3. Free Chlorine Meter

- For the continuous online determination of disinfectants based on the DPD colorimetric method (EN ISO 7393-2; APHA 4500 Cl-G).
- Measurement values : free chlorine / chlorine dioxide / iodine or bromine using DPD+Buffer or monochloramine / ozone using DPD+Buffer&KI, flow and if installed pH and temperature.
- Response Time: 95% under 60 seconds
- Applicable for water containing additives like cyanuric acid.
- Complete system including measurement and control electronics, photometer, flow indicator, reaction chamber, reagent dosing system and reagent containers.
- Integrated pH measurement with temperature compensation.
- All usual dosing devices for disinfectants and pH control can be connected either through relays or analog output signals. Two independent controllers can operate simultaneously.
- Alarm display and activation of alarm relay when user defined, critical limits for a measurement value are reached.
- Continuous, automatic monitoring of main instrument functions (dirty photometer, sample flow, reagents).
- Large back-lit LCD display showing all measured values and status information simultaneously.
- Factory tested, ready for installation and operation.
- Communication interface
- pH option containing pH sensor, temperature sensor, cables and electronics board.
- Minimum 2 years' guarantee

4. (Mixed Liquor) Suspended Solids Meter

- For the continuous online determination of suspended solids concentration in the reactor.
- Measuring range:
 - 250 to 30 000 mg/L with
 - $\pm 5\%$ error
- Response Time: 95% under 60 seconds
- Measuring technology: infrared light
- Minimum 2 years guarantee
- Easy user menus in English.
- Simple programming of all parameters by keypad.
- Electronic record of major process events and calibration data.
- Real-time clock for time stamp in data logs and for automated functions.
- Data logger for 1'500 data records stored at a selectable interval.
- Overvoltage protection for in- and outputs.

d) Instrumentation power shall either be loop powered or 230VAC.

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- e) All process instrument measurements and signals (discrete and analog) shall be transmitted to the RIO panel via conventional 4 to 20mA current loops and/or 24VDC potential free contacts and/or transistor inputs, except flow meter totalised signals shall be via fieldbus (Modbus or profibus to the RIO).
- f) Instruments for pump station pump protection safety interlocks) shall be provided, wired directly to the motor starter or drive to ensure protection during both automatic and manual control. The Contractor is responsible for pricing any changes to the instrumentation and control design that are used by his/her selection of mechanical equipment and instrumentation.

PROCUREMENT

C3.4.1 Definitions

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

- (a) "Act" means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000);
- (b) "Comparative price" means the price after the factors of a non-firm price and all unconditional discounts that can be utilised have been taken into consideration;
- (c) "Consortium or Joint Venture" means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract;
- (d) "Contract" means the agreement that results from the acceptance of a tender by an organ of state;
- (e) "Disability" means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being;
- (f) "Firm price" is the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of a law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- (g) "Management" in relation to an enterprise or business, means an activity inclusive of control and performed on a daily basis, by any person who is a principal executive officer of the company, by whatever name that person may be designated, and whether or not that person is a director;

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- (h) “Non-firm prices” means all prices other than “firm” prices;
- (i) “Person” includes reference to a juristic person;
- (j) “Rand value” means the total estimated value of a contract in Rand denomination which is calculated at the time of tender invitations and includes all applicable taxes and excise duties;
- (k) “Sub-Contracting” means the primary contractor’s assigning or leasing or making out work to, or employing,
- (l) “Trust” means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person;
- (m) “Trustee” means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person;
- (n) “Individual” means a natural person;
- (o) “The Client” means Rustenburg Local Municipality;
- (p) “Companies and Shares” shall be read so as to include Close Corporations and members’ interests mutatis mutandis;
- (q) “Executive Management Committee” shall mean a committee comprising the Agency’s Heads of Divisions and any other Manager so invited;
- (r) “Historically Disadvantaged Individual (HDI)” means a South African citizen:
- (1) Who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993 (Act No 200 of 1993) (“the Interim Constitution”); and/ or
 - (2) who is a female; and/ or
 - (3) who has a disability

Provided that a person who obtained South African citizenship on or after the coming to effect of the Interim Constitution, is deemed not to be an HDI;

- (s) “Tender” means a written offer or bid in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services or goods;

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- (t) "Collusion" means an intentional and unlawful agreement by two or more companies/firms which is intended or calculated to misrepresent facts or defraud with the sole purpose of influencing the procurement process thereby pre-judging the interests of the service provider.

C3.4.2 Preamble

Whereas the RUSTENBURG LOCAL MUNICIPALITY, being the Client, as defined, and engaged in contracts for the acquisition of goods and services and obliged to do so in accordance with a system which is fair, equitable, transparent, competitive and cost effective, hereby provides for a procurement policy to that effect.

C3.4.3 Goals

The broad goals of this policy are to:

- (a) Ensure effective and efficient application of resources;
- (b) Promote accountability, transparency and fairness;
- (c) Create opportunities for local small, medium and micro enterprises;
- (d) Enhance quality services;
- (e) Stimulate socio-economic development;
- (f) Eliminate and counter corruption;
- (g) Contribute towards reduction of unemployment.

C3.4.4 Objectives

The specific objectives of the policy are to:

- (a) Implement best procurement practises through effective planning, strategic purchasing and contract management;
- (b) Standardise levels of skill and knowledge of employees/workers;
- (c) Promote HDI enterprises providing services and goods within the Province;
- (d) Introduce a systematic approach to the appointment of service providers and to promote consistency

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in respect of supply chain management and offer related policy initiatives.

C3.4.5 Legislative Framework

The procurement system is prescribed and regulated by legislation being:

- (a) Section 217 of the Constitution, Act 108 of 1996 which provides that in contracting for goods and services, organs of state must do so in accordance with a system that is fair, equitable, transparent, competitive and cost effective;
- (b) Public Finance Management Act, 1 of 1999 which aims to regulate financial management of certain organs of state to ensure that all revenue, expenditure, assets and liabilities are managed efficiently and effectively;
- (c) Preferential Procurement Policy Act, 5 of 2000 ("the Act") and the regulations promulgated in terms of the Act giving effect to Section 217(3) of the Constitution by providing a framework for the implementation of the preferential procurement policy contemplated in Section 217 (2) of the Constitution;
- (d) All other applicable laws, policies and regulations.

C3.4.6 Preference Point System: 80/20

The following formula shall be used to calculate the points in respect of tenders/procurement with a Rand value equal to, or below R50 000 000,00 (one million Rand).

$$Ps = 60 \left(1 - \frac{Pt - Pmin}{Pmin} \right) + 20 \times \frac{So}{Ms}$$

Where:

Ps = Points scored for price and functionality for the tender under consideration.

Pt = Rand value of tender under consideration.

Pmin = Rand value of the lowest acceptable tender.

So = Score for functionality allocated to the submission under consideration.

Ms = The maximum possible score for functionality in respect of a submission.

1.1 10 potential points for equity owned by previously disadvantaged groups using the formula;

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Points scored for equity ownership by Historical Disadvantaged Individuals = Maximum points awarded for equity X % of equity ownership
100

1.2 That Council reserves the right as and when it wishes to require proof of equity indications in the tender documents.

1.3 10 potential points for locally based firms using the formula;

Points scored for local ownership = Maximum points awarded for local ownership X % of local ownership

100

This would be firms who are based within the area of the RUSTENBURG LOCAL MUNICIPALITY only.

1.4 10 points be deducted in respect of a company or an individual who had already won a tender or a quotation during that financial year.

1.5 5 bonus points be awarded in respect of tenders or quotations submitted by women or where women are included as directors, partners or members provided that no bonus points shall be awarded where married couples or co-habitants are involved.

and/or the

1.6 Same bonus point system will apply in respect of people with disabilities.

Total : **20** Thus the maximum amount of points is 100.

C3.4.7 Preference Point System: 90/10

The following formula must be used to calculate the points in respect of tenders/procurement with a Rand value above R50 000 000,00 (fifty million Rand). This formula should be used to determine points for price.

$$P_s = 70 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right) + 20 \times \frac{S_o}{M_s}$$

Where:

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Ps = Point scored for price and functionality for the tender under consideration.

Pt = Rand value of tender under consideration.

Pmin = Rand value of the lowest acceptable tender.

So = Score for functionality allocated to the submission under consideration

Ms = The maximum possible score for functionality in respect of a submission

- 1.1 2.5 potential points for equity owned by previously disadvantaged groups using the formula;

$$\begin{array}{l} \text{Points scored for} \\ \text{equity ownership} \\ \text{by Historical} \\ \text{Disadvantaged} \\ \text{Individuals} \end{array} = \frac{\text{Maximum points awarded for equity} \times \text{\% of equity ownership}}{100}$$

- 1.2 That Council reserves the right as and when it wishes to require proof of equity indications in the tender documents.

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1.3 5 potential points for locally based firms using the formula:

Points scored for
local ownership = $\frac{\text{Maximum points awarded for local ownership} \times \% \text{ of local ownership}}{100}$

100

That is, firms based within the area of the RUSTENBURG LOCAL MUNICIPALITY only. Satellite campus do not entitle enterprises to quality for preference points.

1.4 5 points be deducted in respect of a company or an individual who had already won a tender or a quotation during that financial year.

1.5 2.5 bonus points be awarded in respect of tenders or quotations submitted by women or where women are included as directors, partners or members provided that no bonus points shall be awarded where married couples or co-habitants are involved.

and/or the

1.6 Same bonus point system will apply in respect of people with disabilities.

Total : **10** Thus the maximum amount of points is 100

C3.4.8 Award of Contract to Tenderer not scoring the Highest Number of Points

Despite the fact that only the tenderer with the highest number of points scored may be awarded, a contract may, on reasonable and justifiable ground, be awarded to a tender that did not score the highest number of points.

C3.4.9 Compulsory Requirements

The following requirements shall be applicable to all tenders and non-adherence thereto shall result in an automatic disqualification for the advertised tender:

- (a) Attendance of site clarification meeting
- (b) Submission of valid original tax clearance certificate;
- (c) Authority to act and contractually bind the tenderer.
- (d) Tenderers are required to register with the Construction Industry Development Board (CIDB), which will then allocate a grade applicable to the tenderer. The grades applicable are shown in the table

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below.

MAXIMUM CONTRACT VALUE	GRADE
R 1 000 000	2
R 3 000 000	3
R 6 000 000	4
R 10 000 000	5
R 20 000 000	6
R 60 000 000	7
R 200 000 000	8
Unlimited	9

C3.4.10 Cessions

No cessions.

C3.4.11 Performance Guarantees

The period required to provide surety shall be 21 calendar days. However, depending on circumstances, a shorter period may be prescribed. In the event of failure to submit the surety within the stipulated period, the Agency shall be entitled to cancel the contract and award the tender to a suitable contractor.

Sureties may only be accepted from a banking institution registered in terms of the Banks Act, 1996, an insurer registered in terms of the Short-term Insurance Act (Act 53 of 1998), or from governmental institutions established for such purposes.

C3.4.12 Notification of Acceptance

Successful service providers or tenderers shall be notified before the tender validity period expires.

C3.4.13 Contractual Agreement

The relationship between the Agency and the contractor shall be managed under the following contractual documents:

- (a) The tender document submitted by the tenderer;
- (b) The project drawings relevant for the tendered project;

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- (c) The General Conditions of Contract for Construction Works, First Edition (2015);
- (d) The Client's Procurement Policy;
- (e) Any other relevant legislation aimed at meeting other government policy initiatives.

C3.4.14 Tax Clearance Certificate

No contract shall be awarded to an entity which fails to submit a valid original Tax Clearance Certificate from the South African Revenue Service (SARS), certifying that the taxes of the said entity are in order or that suitable arrangements have been made with SARS, and submitted proof as part of the tender documentation.

The original Tax Clearance Certificate must be provided at tender closure to avoid disqualification.

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C3.5 CONSTRUCTION MANAGEMENT

C3.5.1 Management of the Works

C3.5.1.1 Applicable SANS and SABS standards

The provisions of these SABS 1200 take precedent over the provisions of any part of SANS 2001 that is applicable to this contract. The SABS 1200 Standardised Specifications for civil engineering construction applicable to this contract are stated in section C3. The variations and additions to these specifications are described in the Section C3.4: Construction.

C3.5.1.2 Particular / Generic specifications

Not applicable.

C3.5.1.3 Methods and procedures

C3.5.1.3.1 Maintenance of accesses and streets

The operation of construction vehicles on existing roads or streets, or on streets which have been completed to the level of sub base or base or bituminous surface treatment, shall be limited to traffic with an axle load not exceeding that allowed by the Road Traffic Ordinance of the authority concerned, or any amendment thereof. Hauling is strictly forbidden on sections of streets that have been completed as described above. The Contractor shall make use of temporary haul roads, or where not practically possible, program his work in such a manner that the haulage of materials shall be restricted to that required for the particular section of street. No additional payment shall be made for the use of temporary haul roads and all relevant costs shall be deemed to be covered by the appropriate rates.

The Contractor must note that no additional payment will be made for the construction of temporary access roads to the construction site, borrow areas or to the spoil sites, except for payment made under payment item A 8.3.2.2 of SABS 1200 A.

If the Contractor does make use of existing streets for the hauling of materials to or from the site, he shall be held responsible to clear any spillage caused by his activities on or near the roads by whatever means necessary, within one (1) day after such spillage has occurred. No additional payment will be made for the clearance of spillage and all relevant costs will be deemed to be covered under the relevant items.

C3.5.1.3.2 Blasting operation

A competent, registered blaster shall carry out any blasting required. All permits required purchasing, transport, use and dispose of unused, blasting material shall be obtained and copies

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given to the Employer's Agent before any blasting may take place. The commander of the local South African Police Services (SAPS) shall be informed of the time and date that blasting operations will take place at least 6 hours before blasting.

No blasting operations may take place on weekends or holidays or after 17:00 on weekdays.

The Contractor shall ensure that sufficient suitable cover material, to the satisfaction of the blaster, is available and in place before a blast is initiated.

C3.5.1.3.3 Normal working hours

Normal working hours shall be between 07:00 and 17:00 on weekdays from Mondays to Fridays and between 07:00 and 13:00 on Saturdays, should the Contractor choose to work on Saturdays, excluding Public holidays.

C3.5.1.3.4 Interference with Municipal staff and operations

The Contractor shall ensure that none of his staff interfere in any way with any municipal staff member or their functions or with the operation of the wastewater treatment works.

Any member of the Contractors staff found to be interfering with municipal staff or operations in any way shall be removed from the site and shall not be allowed to return.

C3.5.1.3.5 Access for other Contractors

The Contractor shall provide reasonable access to other Contractors carrying out work on the site from time to time, as and when such access is required. The Contractor is entitled to request reasonable notification of at least 24 hrs before access by others is required.

C3.5.1.3.6 Giving notice of work to be covered up

The Contractor shall give the Employer's Agent reasonable time to accommodate examinations in his programme, in which case times for inspections can be agreed on. Requests for examination of work shall be made in the site request book 48 hrs before the examination is required.

If the Employer's Agent attends with the purpose of examining any part or materials of the works at the time and date as agreed upon with the Contractor, and it is found that the works or materials are not yet ready for inspection, the Contractor shall be responsible for the costs of such a visit by the Employer's Agent.

C3.5.1.3.7 Cost of test specimens and tests

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It is deemed that the Contractor has made provision in his tender for all such services and tests that are required from him. It is the duty of the Contractor to, at his own cost and by means of the necessary tests, prove to the Employer's Agent that the works and compaction where prescribed, comply with the specification.

C3.5.1.3.8 Sequence of the works

Sequencing of the works shall be agreed to between the Contractor, the Employer's Agent and the Contractor.

C3.5.1.4 Quality plans and control (Testing)

Refer SABS 1200 A: General

C3.5.1.5 Environmental management of construction activities

C3.5.1.5.1 Site plan

The extent of the clearing of the affected area must be reflected in a method statement to be presented to the ECO.

The Contractor shall establish his construction camps, offices, workshops and testing facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the Contractor shall submit to the Employer's Agent and the ECO for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to put in place.

The camp site shall be selected with due regard to the environment and sensitive areas. The site offices should not be sited in steep areas, as this will increase soil erosion. Preferred locations would be on flat areas. The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, refuse, sewage and workshop-derived effluents. No dumped material should be deeper / higher than 2 m and the stability thereof must be such that the material would not fall on or shift over any person on the site. Access to these areas by any member of the public must be restricted by demarcation. Dumps must be dampened or covered with netting to prevent the occurrence of dust, until such time as vegetation re-growth on it has occurred. All rubbish or any other material must be removed on a daily basis from the site.

It is also recommended that the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located far away as possible from any water course, stream or river as possible. Regardless of the chosen site, the Contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted prior to the start of the need to give construction.

C3.5.1.5.2 Vegetation

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The contractor has the responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation. Even though the site has been severely degraded, any usable plant species must be rescued prior to construction and be made available for use in landscaping and rehabilitation of the site.

C3.5.1.5.3 Areas of Specific Importance

Any area, as determined and identified as sensitive or of special interest within or outside the site shall be treated according to the express instructions contained in the approved CEMP. The Contractor may offer alternative solutions to the Employer's Agent and ECO in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection shall not be changed. Every effort to identify such areas within and outside the site will have been made prior to the project going out to tender.

C3.5.1.5.4 Demarcation of sensitive and hazardous areas

All sensitive areas must be clearly and effectively demarcated or fenced prior to the commencement of any land clearing or construction activities.

In the event that sensitive areas and features are threatened by construction activities, the temporary fencing off of these areas is recommended. Demarcation can take the form of colour coded pegs at least 1,5 m high. Danger tape may also be used for this purpose. All pegs and tape must be maintained for the duration of the construction phase.

Where the construction area is fenced, all activities including stockpiling must occur within this fenced area. Work areas and access routes must be clearly demarcated to minimise environmental impact and the potential for accidents and injuries to members of the public. Where required by the authority, the contractor shall erect and maintain a temporary fence along the boundaries of the construction site, and around any no-go areas. The ECO in consultation with the contractor are responsible for the clear demarcation of the areas. Upon completion of the construction phase, all fences, signage and tape must be removed.

Any transgression or damage to the sensitive areas must be reprimanded.

C3.5.1.5.5 Fauna / Wildlife

The contractor has the responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on wildlife. The contractor and his staff must not disturb, injure or kill any wildlife on site. These animals must be moved and securely relocated. Fauna (like tortoises, lizards, snakes, etc.) also found on site during construction activities must be relocated to places of safety and not harmed in any way. Should snakes be encountered, no attempt should be made to move, harm or kill them.

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C3.5.1.5.6 Restoration

The area where the site offices will be erected will require rehabilitation at the end of the contract. All construction material, including concrete slabs shall be removed from the site on completion of the contract. The focus must be on waterwise plants with an emphasis on locally indigenous species especially those species already on site that can be rescued from the development footprints.

C3.5.1.5.7 Water

Safe drinking water for human consumption shall be available at the site offices and at other convenient locations on site. All water used on site must be taken from a legal source and comply with recognised standards for potable and other uses. The contractor shall comply with the provisions of the National Water Act and its Regulations for taking water from rivers or streams and the use thereof. All water is stored on site distinction shall be made between drinking water and multi-purpose water storage facilities.

All effluent water from the camp/ office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water source (streams, rivers, dams etc). Wash water which is contaminated with soaps, detergents, grease, oils and other undesirable materials shall be collected in conservancy tanks and disposed of safely into a wastewater treatment facility.

C3.5.1.5.8 Fires and cooking facilities

The Contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. No fires on site will be allowed. Activities which may pose a risk of fire must be identified and suitable measures must be put in place to prevent any possible damage by fire. Contractors must inform the staff of the risk of fire and fire prevention and emergency procedures in the event of a fire. Fire fighting equipment shall be supplied by the Contractor at suitable locations.

The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

C3.5.1.5.9 Sewage disposal

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices and at all locations on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the Employer's Agent, the local authorities and comply with legal requirements.

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Safe and effective sewage treatment will require one of the following sewage handling methods: the use of chemical toilets which are supplied and maintained by a subcontractor. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be serviced on a regular basis. The positioning of the chemical toilets shall be located in consultation with the Employer's Agent and the ECO.

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Ablution facilities must be established for all staff and construction workers and workers must be advised to only use the site ablutions for "relief". The contractor must provide suitable sanitary arrangements at or near the site offices and on the construction site for all staff. A minimum of one toilet shall be provided per 20 persons at each working area. Only security personnel may be accommodated in the contractor's yard, with a maximum occupation of two people. Toilets shall be of a neat construction and shall be provided with doors and locks and shall be secured to prevent them blowing over.

Sanitation provision and servicing of the ablutions must be to the satisfaction of the Local Authority, so as to specifically prevent the use of the surrounding bush as an informal toilet area. The contractor must ensure that toilets are emptied regularly and before any builders' holidays and that the service provider uses approved sewerage disposal points for emptying the containers.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Employer's Agent.

C3.5.1.5.10 Waste management

The Contractor's intended methods for waste management and waste minimisation shall be implemented at the start of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

C3.5.1.5.10.1 Solid waste

Waste should be categorised by the contractor and disposed of in a suitable manner into different waste streams (including general and hazardous waste). Wherever possible, recycling should be carried out. No dumping within the surrounding area is permitted.

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to a satisfaction of the Employer's Agent.

Disposal of solid waste shall be at a Department of Water Affairs and Forestry (DWAF) licensed landfill site or at a site approved by DWAF in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be buried at or near neither the site offices, nor anywhere else on the site or at the approved solid waste disposal site.

C3.5.1.5.10.2 Litter

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No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all the places of work the Contractor shall provide litter bins, containers and refuse collection facilities for later safe disposal to approved sites. A concentrated effort shall be made to collect and dispose of materials suitable for recycling separately from other solid waste.

C3.5.1.5.10.3 Hazardous waste

Hazardous waste such as cement, fuel, oils, paraffin, etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Where such products are being disposed of, a chain custody document should be kept with the environmental register as proof of final disposal. Special care shall be taken to avoid spillage of these products from entering the ground or contaminating water.

Under no circumstances shall the spoiling of hazardous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected hazardous products shall be returned to the supplier's production plant. No spillage of hazardous products shall be allowed on site. Affected areas shall be promptly reinstated to the satisfaction of the Employer's Agent and the client.

C3.5.1.5.11 Wastewater

The contractor shall ensure that wastewater generated during construction activities feeds to a suitable containment area such as a sedimentation pond prior to disposal. This pond or pond should be allowed to dry out on a regular basis to allow for solid material removal. The latter shall be disposed of in a suitable manner.

No construction fluids should be allowed to enter the wastewater system. These should be disposed of via the solid waste stream. No wastewater shall be disposed of to soil. This does not include clean groundwater from excavations or rainwater.

C3.5.1.5.12 Plant and equipment

The Contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e. at the place of construction activity or at a formalised workshop).

C3.5.1.5.12.1 Safety

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the contractor to, and used or worn by, the staff whose duty it is to

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manage and maintain the Contractor's and his/her subcontractors and suppliers plant, machinery and equipment.

C3.5.1.5.12.2 Hazardous material storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of these products shall only take place using suitable containers to the approval of the Employer's Agent.

The Contractor shall provide proof to the Employer's Agent that relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facilities containment structure. Before containment or storage facilities can be erected the Contractor shall furnish the Employer's Agent with details of the preventative measures that he proposes to install in order to mitigate against pollution of the surrounding environment from leaks or spillages. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

C3.5.1.5.12.3 Fuel and Gas Storage

The following conditions relating to the temporary storage of diesel on site must be implemented:

- All fuel stored on site must be confined to specific and secured areas and stored in an area with an impervious base, which is adequately bunded (at least 110% of total capacity) and positioned in an area that slopes away from surface water bodies / supplies (including stormwater)
- Only one refuelling area must be provided on site.
- The temporary fuel tank must be designed and installed in accordance with the relevant Oil industry and SANS standards.
- The tanker driver and adequately qualified staff must be present at all times during product offloading.
- An emergency cut-off switch must be installed to immediately stop fuel delivery should an incident occur.
- The servicing and refuelling of vehicles may not take place outside of areas demarcated for these purposes.
- All spills must immediately be reported to the site manager and appropriate clean-up

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measures must be implemented.

- The client must ensure that effective stock inventory monitoring, recording and regular auditing will take place for the early identification of possible leaks and to keep a leak history for the site.
- An on-site emergency response plan must be developed with the area surrounding the tank kept clean of flammable material and the required warning signs erected.
- Crash barriers must be installed around the fuel tank.
- The temporary fuel tank and associated infrastructure must be removed at the expense of the client after the construction activities are completed.

C3.5.1.5.13 Clearing of Site/ Removal of organic material

In all areas where the Contractor intends to or is required to clear the natural vegetation and soil plan of action shall first be submitted to the Employer's Agent and the ECO for approval. The plan shall contain a photographic record and chainage/ land reference of the areas to be disturbed. This shall be submitted to the Employer's Agent for his records before any disturbances/ stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections.

The removal of organic material from the site, with specific reference to the removal of alien vegetation, will be done by the contractor to a permitted waste disposal site. Alternatively, the material may be cut for use as firewood by local residents of the area. The organic material could also be used on cleared sand areas to help stabilise these areas and to provide cover for the revegetation thereof. This aspect is the responsibility of the Municipality / Contractor.

No pile containing organic material should be higher than 2 m and the stability thereof must be such that no piled material could fall on any member of the public. Upon completion of the construction all stockpiles that are not used for soil stabilisation, should be removed by the contractor.

All material removed must be dumped on site, for later use in backfilling and rehabilitation. Where external or link services are to be installed off-site, the route for such services must be demarcated by the contractor, at least two weeks before any construction work, to enable the client to fully survey the route and determine what rehabilitation work will be required upon completion of construction activities. The design and contract documentation to specify this aspect is the responsibility of the engineering consultants, under the auspices of the developer and in keeping with the principles and guidelines of the CEMP.

C3.5.1.5.14 Drainage

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The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users/ receivers shall not be adversely affected by the expansion or development. Surface water runoff must be managed to minimise erosion. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams and their catchments shall be protected from erosion, direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products.

The Contractor shall submit to the Employer's Agent his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sediment ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions and must be lined with a plastic liner in order to avoid potential contamination of the soil and groundwater system.

C3.5.1.5.15 Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products. In the event of spillage, the Contractor shall be liable to arrange for professional service providers to clear the affected area.

Impervious materials are to be used in the fuel storage areas to prevent contamination of the ground in the event of spillages or leaks. Quantities of fuels and hazardous materials stored at the contractor's yard should be appropriate to the requirement for these substances on site. All vehicles, equipment, fuel and petroleum services and tanks must be maintained in a good condition that prevents leakage and possible contamination of soil or water supplies. The following measures should be implemented.

Refuelling areas should be clearly demarcated, banded and lined to prevent spilled fuels and oils from contaminating the area. It is suggested that as a minimum, sandbags surround the bulk fuel supply tank. The ground surface of the area is to be lined with plastic and a layer of sand of approximately 50mm thick is to be placed on top of the plastic.

The park and service area should be treated with a suitable hydrocarbon absorption or remediation product. Absorbent spill mop-up products need to be on hand (Drizzit and products from Enretech should be investigated for these purposes).

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All servicing of vehicles must be done with a drip tray present to prevent accidental spillage of oils and fuels. A suitable leak proof container for the storage of oiled equipment (filters, drip tray contents and oil changes, etc) must be placed in the yard.

Responsibility for spill treatment lies with the Contractor. The individual responsible for, or who discovers, a hazardous waste spill must report the incident to the ECO and to the Employer's Agent. The ECO will assess the situation in consultation with the Employer's Agent and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil/ water shall be determined by the Contractor in consultation with the ECO and the Employer's Agent. Areas cleared of hazardous waste shall be revegetated according to the Employer's Agent's or ECO's instructions.

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Employer's Agent. The costs of containment and rehabilitation shall be for the Contractor's account, including the costs of specialist input.

C3.5.1.5.16 Dust control

Appropriate measures must be taken to minimise the generation of dust as a result of construction work, to the satisfaction of the Municipality. Alternatively, immediate straw stabilisation of sections where no road construction is planned or watering on construction sections must be used to limit the effect of wind-blown sand and the occurrence of dust. The implementation of dust minimisation measures and dust control is the responsibility of the contractor.

C3.4.1.5.17 Post construction site clearing and rehabilitation

Final site clearing - the contractor shall clear and clean the site and ensure that everything not forming part of the permanent works is removed from site before issuing the completion certificate or as otherwise agreed.

Rehabilitation - the contractor shall be responsible for rehabilitating and revegetating all areas disturbed during construction to the satisfaction of the Employer's Agent and the ECO.

Upon completion of the construction the contractor must replace topsoil or soil containing organic material over the dumps for "natural landscaping" of the rehabilitation area, i.e. landscaping that follows the natural contours of the site and only with plant material that would normally be found on-site under natural conditions and re-established if agreed to by the ECO. The rehabilitation and landscaping of the individual residential building sites, as well as the areas subject to infrastructure installations, must be done with suitable locally indigenous plant species only. The focus must be on waterwise plants with an emphasis on locally indigenous

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species especially those species already on site that can be rescued from the development footprints.

The site environment register should be retained by the local municipality once the development is commissioned and made available at reasonable times to any of the stakeholders associated with this project to ensure transparency and freedom of access to the records. All incidents with potential environmental impacts should be entered into this document, which is the responsibility of the site operator.

Provision should be made for the management of incidents such as potential leaks during the operation phase. In this regard, maintenance and management roles should be clearly defined with suitable response protocols implemented.

C3.5.1.6 Planning and programming

The Employer will take no responsibilities for any work done outside the site of works without approval by the Employer's Agent.

Arrangements will be necessary to enable the Mechanical equipment supplier to commence with the installation of mechanical equipment in parts of the works in advance of completion of the whole.

Immediately after the handing over of the site the Employer's Agent and the Contractor shall discuss the order of procedure and methods in which the Contractor shall carry out the works, and to give priority to the following parts of the works to avoid delays with the mechanical contract, after which the Contractor shall compile and submit to the Employer's Agent, within 14 days of the commencement date, a bar chart showing the construction program:

- a) Site clearance and excavations
- b) Division chamber
- c) Biological reactor (Anaerobic Zone)
- d) Secondary Settling Tank
- e) Return activated pump station
- f) Interconnecting pipework, manholes and boxes
- g) General site works

The programme shall be in the form of a bar chart only, and shall clearly show the anticipated quantities, the production rates and value of work to be performed each month.

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A network-based programme according to the precedence method shall also be provided showing the various activities and critical path in such detail as may be required by the Employer's Agent. The programme shall be updated monthly in accordance with the progress made by the Contractor.

It is a prerequisite of this contract that minimal disruption of the public is ensured during construction. Construction methods must be of such a nature that no property or life is endangered. The Employer accepts no responsibility for any work done outside the site boundaries without the Employer's Agent's approval.

Sufficient digital photographs of all structures and obstructions in the pipeline routes must be taken by the Contractor, compiled electronically, indexed and handed over to the Employer's Agent before construction commences.

Failure to comply with these requirements will entitle the Employer's Agent to use a programme based on his own assumptions for the purpose of evaluating claims for extension of time or additional payments.

The compilation of the construction program and any amendments thereto during the course of construction shall be at the cost of the Contractor and shall not be measured elsewhere in the contract.

C3.5.1.7 Other Contractors on site

A mechanical / electrical contractor will be on site during the contract period. Close co-operation is required between the civil and mechanical / electrical contractors to ensure neither delay the other. The contractor responsible for delaying other contractors shall be liable for all costs associated with the delay.

Programming and liaison in this regard must be taken into account.

C3.5.1.8 Recording of weather

The Contractor shall record all rainy and windy periods, which may adversely affect to the contractual time for completion in terms of clause 42 of the General Conditions of Contract.

The Contractor shall erect a rain gauge on site for the purpose of recording precipitation.

C3.5.1.9 Format of communications

All communication regarding the contract shall be channelled through the Employer's Agent and/or his duly authorised representative.

C3.5.1.10 Management meeting

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Management meetings shall be held once a month for the duration of the project on dates and times to be agreed.

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C3.5.1.11 Daily records

Daily records of site activities must be kept accurately. This would include record of plant, personnel, site and weather conditions.

C3.5.2 Health and Safety

C3.5.2.1 Health And Safety Requirements

Before starting work on site the Contractor shall present to the Employer his Health and Safety Plan for approval. He shall also appoint a Health and Safety Officer in writing and give a copy of the letter of appointment to the Employer.

The Health and Safety Specifications are attached as Appendix C and must be referred to when compiling the Health and Safety Plan.

C3.5.2.2 Access to Site By Public

The Contractor shall erect fences and employ sufficient security personnel to prevent unauthorised access to the site by members of the public. Notices prohibiting access to the site shall be clearly displayed at all access points.

The notices shall be in English, Afrikaans and the most commonly used local language.

C3.5.2.3 Barricades and Lighting

All excavations and openings in walls and slabs into or through which a person may fall shall be securely barricaded at all times in accordance with the requirements of the applicable OH&S regulations.

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CONTRACT PART C4: SITE INFORMATION

C4.1: Location of the Works

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C4.3: Site Administration Forms

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C4.1 Location of the Works

Lethabong is located in the centre of the region Rustenburg Ward 27 and Ward 28 and is situated approximately 35km northeast of Rustenburg CBD. It can be located on coordinates 25o 26' 47.14" S and 27o 30' 02.04" E.

Figure Error! No text of specified style in document.-1 Location of Project Site



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ATTACHED AS A SEPARATE ANNEXURE

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Occupational health and safety specifications

1 Scope

This health and safety specification in respect of an engineering and construction works contract:

- a) provides the overarching framework within which the Principal Contractor is required to demonstrate compliance with certain requirements for occupation health and safety established by the Occupational Health

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and Safety Act of 1993 (Act No. 85 of 1993) and its regulations, Construction Regulations 2014,.

- b) establishes the manner in which the Principal Contractor is to manage the risk of health and safety incidents in the execution of the contract; and
- c) establishes the manner in which the Principal contractor will interact with the Clients Agent.

Note: 1) This specification establishes specific requirements to enable the Client and the Principal contractor to satisfy the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), the Construction Regulations 2014 as well as applicable Municipal By laws.

- 2) The Construction Regulations, 2014, require the Client or its appointed Agent to stop any Contractor from executing construction work which is not in accordance with the Contractor's health and safety plan for the site or which poses to be a threat to the health and safety of persons.
- 3) This specification establishes health and safety requirements Site specific requirements for health and safety as stated in the scope of work associated with a contract.

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2 Definitions

Act: The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

Competent person: any person having the knowledge, training and experience specific to the work or task being performed

Employer's Health and Safety Agent: the person appointed as agent by the Employer in terms of Regulation 4(5) of the Construction regulations and named in the contract data as the being the employer's agent responsible for health and safety matters

ergonomics: the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimize human well-being and overall system performance

hazard: a source of or exposure to danger

hazard identification: the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed

health and safety plan: a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

healthy: free from illness or injury attributable to occupational causes

incident: an event or occurrence occurring at work or arising out of or in connection with the activities of persons at work, or in connection with the use of plant or machinery, in which, or in consequence of which:

- a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or to continue with the activity for which he was employed or is usually employed;
- b) a major incident occurred; or
- c) the health or safety of any person was endangered and where:
 - i) a dangerous substance was spilled;
 - ii) the uncontrolled release of any substance under pressure took place;
 - iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or machinery ran out of control

inspector: a person designated as such under section 28 the Act

major incident: an occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace

reasonably practicable: practicable having regard to:

- a) the severity and scope of the hazard or risk concerned;
- b) the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk;

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- c) the availability and suitability of means to remove or mitigate that hazard or risk; and
- d) the cost of removing or mitigating that hazard or risk in relation to the benefits deriving there from;

registered person: a person registered in terms of the Electrical Installation Regulations

risk: the probability that injury or damage will occur

safe: free from any hazard

3 Structure

- a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- b) any formwork, false work, scaffold or other structure designed or used to provide support
- c) or means of access during construction work; or
- d) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more

substance: any solid, liquid, vapour, gas or aerosol, or combination thereof

suitable: capable of fulfilling or having fulfilled the intended function or fit for its intended purpose

workplace: any premises or place where a person performs work in the course of his employment

4 Interpretation

The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.

Compliance with the requirements of this specification does not necessarily result in compliance with the provisions of the Act.

5 Requirements

General requirement

The Principal Contractor shall:

- a) create and maintain a safe and healthy work environment,
- b) execute the works in a manner that complies with all the requirements of the Act and all its associated

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regulations, Applicable Municipal By Laws and in so doing, minimize the risk of incidents occurring; and

- c) respond to the notices issued by the Client's Health and Safety Agent as follows:
 - 1) Improvement Notice: improve health and safety performance over time so that repeat notices are not issued;
 - 2) Contravention Notice: rectify contravention as soon as possible;
 - 3) Prohibition Notice: terminate affected activities with immediate effect and only recommence activities when it is safe to do so.

Administration

Notification of intention to commence construction work

The Principal Contractor shall notify the Provincial Director of Labour in writing using a form Annexure 2 of the Construction Regulations issued in terms of the Act before construction work commences and retain a copy of such notification in the health and safety file where such work:

- a) involves the demolition of a structure exceeding a height of 3m;
- b) involves the use of explosives to perform construction work;
- c) involves the dismantling of fixed plant at a height greater than 3m;
- d) exceeds 30 days or will involve more than 300 person days of construction work; and includes:
 - i) excavation work deeper than 1m
 - ii) working at a height greater than 3 m above ground or a landing.

The Principal Contractor shall ensure that no work commences on an electrical installation which requires a new supply or an increase in electricity supply before the person who supplies or contracts or agrees to supply electricity to that electrical installation has been notified of such work.

The Principal Contractor shall ensure that no asbestos work is carried out before the Provincial Director of the Department of Labour has been notified in writing.

Copy of the Act

The Principal Contractor shall ensure that a copy of the Act and relevant regulations is available on site for inspection by any person engaged in any activity on the site.

Good standing with the compensation fund or a licensed compensation insurer

The Principal Contractor shall before commencing with any works on the site provide the Client's Health and Safety Agent with proof of good standing with the compensation fund or with a licensed compensation insurer.

Emergency procedures

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The Principal Contractor shall submit for acceptance to the Client's Health and Safety Agent an emergency procedure which include but not limited to fire, spills, accidents to employees, exposure to hazardous substances, which:

- a) identifies the key personnel who are to be notified of any emergency.
- b) sets out details including contact particulars of available emergency services; and
- c) the actions or steps which are to be taken during an emergency.

The Principal Contractor shall within 24 hours of an emergency taking place notify the Client's Health and Safety Agent in writing of the emergency and briefly outline what happened and how it was dealt with.

Health and safety file

The Principal Contractor shall maintain on site a health and safety file which contains copies of the following, as relevant:

- a) documents required prior to commencing with physical construction activities**
 - 1) the Principal Contractor's health and safety policy, signed by the chief executive officer, which outlines the Contractor's objectives and how they will be achieved and implemented by the Contractor;
 - 2) the notification made to the Provincial Director of Labour, and if relevant, the notification of the person who supplies or contracts or agrees to supply electricity to that electrical installation;
 - 3) the preliminary hazard identification undertaken by a competent person;
 - 4) the organogram which outlines the roles and responsibilities of the construction supervisor's assistants and safety officers; and
 - 5) the Principal contractor's health and safety plan;
 - 6) the emergency procedures;
 - 7) the procedure for the replacement of lost, stolen, worn or damage personal protective clothing and
 - 8) proof that the Principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer;
- b) documents required after construction activities have commenced**
 - 1) the letters of appointments, if relevant, of:
 - i) persons who are required to assist the construction Manager;
 - ii) safety officers;
 - iii) health and safety representatives;
 - iv) replacement construction supervisor, and

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- v) assistants of construction supervisor.
- 2) any revisions to the organogram which outlines the roles and responsibilities of the construction Manager's assistants and safety officers;
 - 3) each and every subcontract agreement;
 - 4) proof that every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer;
 - 5) proof of all subcontractor's induction training whenever it is conducted;
 - 6) copies of the minutes of the Principal Contractor's subcontractors health and safety meetings;
 - 7) copies of each of the Principal Contractor's subcontractors' health and safety policy, signed by the chief executive officer, which outlines the subcontractor's objectives and how they will be achieved and implemented by the subcontractor;
 - 8) the health and safety plans of all the Principal Contractor's subcontractors who are required to provide such plans;
 - 9) a comprehensive and updated list of all the subcontractors employed on site by the Principal contractor, indicating the type of work being performed by such sub-contractors;
 - 10) the outcomes of the monthly audits for compliance with the approved health and safety plan of each and every sub-contractor working on the site;
 - 11) any report made to an inspector by the health and safety committee;
 - 12) the minutes of all health and safety meetings and any recommendations made to the Principal Contractor by the health and safety committee;
 - 13) the findings of all audit reports made regarding the implementation of the Principal Contractor's or a subcontractor's health and safety plan;
 - 14) the inputs of the safety officer, if any, into the health and safety plan;
 - 15) details of induction training conducted whenever it is conducted including the list of attendees;
 - 16) proof of the following where suspended platforms are used:
 - i) a certificate of system design issued by a professional engineer, professional certificated engineer or a professional engineering technologist;
 - ii) proof of competency of erectors;
 - iii) proof of compliance of operational design calculations with requirements of the system design certificate;

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- iv) proof of performance test results;
 - v) sketches indicating the completed system with the operational loading capacity of the platform;
 - vi) procedures for and records of inspections having been carried out;
 - vii) procedures for and records of maintenance work having been carried out;
 - viii) proof that the prescribed documentation has been forwarded to the provincial director;
- 17) letters of appointments for competent persons to supervise the activities which law requires to be so supervised;
 - 18) a copy of risk assessments made by competent persons
 - 19) records of the register of inspections made by a competent person immediately before and during the placement of concrete or any other load on formwork;
 - 20) the names of the first aiders on site and copies of the first aid certificates of competency;
 - 21) the names of the persons who are in possession of valid certificate of competency in first aid and copies of such certificates;
 - 22) details of all incidents together with the Contractor's report on such incident; and
 - 23) the record of inspections carried out by the designers of structures to ensure compliance with designs.

The health and safety file shall be made available for inspection by any inspector, subcontractor, the Project Manager, the Client's Health and Safety Agent or employee of the Contractor upon the request of such persons.

The Principal Contractor shall hand over the health and safety file to the Client's Health and Safety Agent upon completion of the contract.

Health and safety committee

The Principal Contractor shall convene health and safety meetings whenever more than two health and safety representatives have been appointed for the site. These meetings shall be attended by all health and safety representatives and persons nominated by the Principal Contractor. Such meetings shall be convened at least once every month to:

- a) make recommendations to the Principal Contractor regarding any matter affecting the health or safety of persons on the site; and
- b) discuss any incident on the site in which or in consequence of which any person was injured, became ill or died.

The Principal Contractor shall consult with the health and safety committee on the development, monitoring and review of the risk assessment.

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

The Principal Contractor shall ensure that minutes of the health and safety committee meetings are kept.

Inspections, formal enquires and incidents

The Principal Contractor shall inform the relevant safety representative:

- a) beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector; and
- b) as soon as reasonably practicable of the occurrence of an incident on the site.

The Principal Contractor shall record all incidents and notify the Client’s Health and Safety Agent of any incident, except in the case of a traffic accident on a public road, as soon as possible after it has occurred and report such incidence to an inspector.

The Principal Contractor shall investigate all incidents and issue the Client’s Health and Safety Agent with copies of such investigations.

Personal protective equipment and clothing

The Principal Contractor shall ensure that:

- a) all workers are issued with the necessary personal protective clothing;
- b) all workers are identifiable at all times by having the company for which they work for printed on the back or front of their overalls; and
- c) clear procedures are in place for the replacement of lost, stolen, worn or damage personal protective clothing.

Appointments

Health and safety representatives

The Principal Contractor shall appoint in writing one health and safety representative for every 50 employees working on the site, whenever there are more than 20 employees on the site, to:

- a) review the effectiveness of health and safety measures;
- b) identify potential hazards and potential major incidents;
- c) in collaboration with his employer, examine the causes of incidents;
- d) investigate complaints by any employee of the Principal Contractor relating to that employee's health or safety on the site;
- e) make representations to the Principal Contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;
- g) inspect the site with a view to, the health and safety of employees, at regular intervals;

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

- h) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and
- i) participate in any internal health or safety audit.

The Principal Contractor shall provide the health and safety representatives with the necessary assistance, facilities and training to carry out the functions established in 4.3.1

- c) as soon as reasonably practicable of the occurrence of an incident on the site.

The Principal Contractor shall record all incidents and notify the Client's Health and Safety Agent of any incident, except in the case of a traffic accident on a public road, as soon as possible after it has occurred and report such incidence to an inspector.

The Principal Contractor shall investigate all incidents and issue the Client's Health and Safety Agent with copies.

Personal protective equipment and clothing

The Principal Contractor shall ensure that:

- d) all workers are issued with the necessary personal protective clothing;
- e) all workers are identifiable at all times by having the company for which they work for printed on the back or front of their overalls; and
- f) clear procedures are in place for the replacement of lost, stolen, worn or damage personal protective clothing.

Appointments

Health and safety representatives

The Principal Contractor shall appoint in writing one health and safety representative for every 50 employees working on the site, whenever there are more than 20 employees on the site, to:

- f) review the effectiveness of health and safety measures;
- g) identify potential hazards and potential major incidents;
- h) in collaboration with his employer, examine the causes of incidents;
- i) investigate complaints by any employee of the Principal Contractor relating to that employee's health or safety on the site;
- j) make representations to the Principal Contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;
- j) inspect the site with a view to, the health and safety of employees, at regular intervals;

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- k) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and
- l) participate in any internal health or safety audit.

The Principal Contractor shall provide the health and safety representatives with the necessary assistance, facilities and training to carry out the functions established in 4.3

Appointment of construction Manager and supervisor as well as safety officer

The Principal Contractor shall, prior to commencing the work, appoint a full-time competent employee in writing as the construction Manager for the site, with the duty of supervising the performance of the work falling within the scope of the contract and may appoint one or more competent employees to assist the appointed construction Manager.

The Principal Contractor may, having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer registered with a professional body in accordance with construction Regulations 2014 in writing, who has in the Principal Contractor’s opinion the necessary competencies and resources, to assist the Principal Contractor in the control of all safety related aspects on the site.

The Principal Contractor shall compile and maintain an organ gram which outlines the roles and responsibilities of the construction Manager’s assistants and safety officers.

Competent persons

The Principal Contractor shall appoint in writing competent persons to supervise or inspect, as relevant, any of the following:

- a) . formwork and support work operations;
- b) excavation work;
- c) demolition work;
- d) scaffolding work operations;
- e) suspended platform work operations;
- f) material hoists;
- g) operation of batch plants;
- h) explosive power tools;
- i) vehicles and mobile equipment;
- j) fire equipment; and
- g) the stacking and storage of articles on the site.

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The Contractor shall appoint in writing competent persons to:

- a) induct employees in health and safety; and
- b) prepare a fall protection plan.

Client’s health and safety agent

The Client’s Health and Safety Agent shall:

- a) audit the Principal Contractor’s compliance with the requirements of this specification prior to the commencement of any physical construction activities on the site;
- b) accept or reject all safety plans, giving reasons for rejecting such plans;
- c) monitor the effective implementation of all safety plans;
- d) conduct periodic and random audits on the health and safety file to establish compliance with the requirements of this specification;
- e) visit the site at regular intervals to conduct site inspections, and based upon such visits issue, wherever necessary, Improvement Notices, Contravention Notices and Prohibition Notices, to the Contractor or any of the Contractor’s subcontractors with a copy to the Project Manager and, where relevant, to the Contractor.

The Principal Contractor shall invite the Client’s Health and Safety Agent to audit compliance with the requirements of this specification before commencing with any physical construction activity on the site.

Creating and maintaining a safe and healthy work environment

General

The Principal Contractor shall with respect to the site and the construction works that are contemplated:

- a) cause a preliminary hazard identification to be performed by a competent person before commencing any physical construction activity;
- b) evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the Act; and
- c) as far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.

The Principal Contractor shall ensure that:

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

- a) all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;
- b) no structure or part of a structure is loaded in a manner which would render it unsafe; and
- c) account of information, if any, provided by the designer of the structure is taken into account in the risk assessment;

Note: The information provided by the designer should outline known or anticipated dangers or hazards relating to the works and make available all information required for the safe execution of the work. It should provide as relevant, geotechnical information (or make reference to reports provided in the site information), the loading the structure is designed to withstand, the methods and sequence of construction.

The Principal Contractor shall carry out regular inspections and audits to ensure that the works are being performed in accordance with the requirements of this specification.

Risk assessment

The Principal Contractor shall before the commencement of any work on site and during construction work, cause a risk assessment to be performed by a competent person appointed in writing. Such an assessment shall as a minimum:

- a) identify the risks and hazards to which persons may be exposed to;
- b) analyse and evaluate the identified risks and hazards;
- c) document a plan of safe work procedures, including the use of any personal protective equipment or clothing and the undertaking of periodic “toolbox talks” or inductions before undertaking hazardous work, to mitigate, reduce or control the risks and hazards that have been identified;
- d) provide a monitoring plan; and
- e) provide a review plan.

Note: A risk assessment is an important step in protecting workers as well as complying with the law. It helps to focus on the risks that really matter in a particular workplace – the ones with the potential to cause real harm. Workers and others have a right to be protected from harm caused by a failure to take reasonable control measures. The following four steps are recommended:

- 1) **Identify the hazards** by looking at what could reasonably be expected to cause harm, ask employees or their representatives what they think, obtain advice from trade associations or publications on health and safety, check manufacturer’s instructions or data sheets for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective, review accident and ill-health records, think about long-term hazards to health (e.g. high levels of noise or exposure to harmful substances) as well as safety hazards etc.
- 2) **Identify who may be harmed and how** by identifying how groups of people might be harmed
i.e. what type of injury or ill health might occur.
- 3) **Evaluate the risks and decide on precautions** by doing everything ‘reasonably practicable’ to protect

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people from harm i.e. by looking at how things are done, what controls are in place and how the work is organised and comparing this against good practice to see if more can be done to bring practices up to standard. Consider if the hazard can be got rid of all together, and if not how can the risks be controlled so that harm is unlikely, e.g. try a less risky option (e.g. switch to using a less hazardous chemical); prevent access to the hazard (e.g.by guarding); organise work to reduce exposure to the hazard (e.g. put barriers between pedestrians and traffic); issue personal protective equipment (e.g. clothing, footwear, goggles etc); and provide welfare facilities (eg first aid and washing facilities for removal of contamination).

- 4) **Record the findings** by writing down the findings of the risk assessment.

The Principal Contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.

Notwithstanding the provisions of the fall protection plan, the Principal Contractor shall ensure that:

- a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;
- b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;
- c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;
- d) fall prevention and fall arrest equipments:
 - i) suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and
 - ii) securely attached to a structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;
- e) fall arrest equipment is only used where it is not reasonably practicable to use fall prevention equipment; and
- f) suitable and sufficient steps are taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

Where roof work is being performed on a construction site, the Contractor shall ensure that it is indicated in the fall protection plan that:

- a) the roof work has been properly planned;
- b) the roof erectors are competent to carry out the work;
- c) no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees; prominent warning notices are to be placed where all covers

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to openings are not of

- d) sufficient strength to withstand any imposed loads and where fragile material exists;
- e) the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering;
- f) suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and
- g) there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

Health and safety plans

The Principal Contractor shall prior to commencing the works to which this specification applies, submit to the Client's Health and Safety Agent for approval a suitable and sufficiently documented health and safety plan, based on this specification and the risk assessment that is conducted.

The health and safety plan shall as a minimum provide:

- a) the information contained in Table 1 in respect of each of the hazards associated with work falling within the scope of the contract (see Figure 1);and

Table 1: Example of the format of a health and safety plan

What are the hazards relating to work tasks?	Who might be harmed and how?	What are the safe work procedures for the site?	What further action is necessary (monitoring and review)?	Action by whom	Action by when

- b) an outline of the manner in which the Principal contractor intends complying with the requirements of this specification.

The Principal contractor shall discuss the submitted health and safety plan with the Clients' Health and Safety Agent, modify such plan in the light of the discussions and resubmit the modified plan for approval.

The Principal contractor shall apply the approved health and safety plan from the date of its commencement and for the duration of the works to which this specification applies.

The Principal contractor shall conduct periodic audits for compliance with the approved health and safety plan at intervals agreed upon with the Employer's Health and Safety Agent, but at least once every month.

The Principal contractor shall update the health and safety plan whenever changes to the works are brought about

Fall protection plan

The Principal contractor shall require a competent person to prepare a fall protection plan in compliance with the requirements of the Construction Regulations.

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The Principal contractor shall ensure that the construction supervisor is in possession of the most recently updated version of the fall protection plan.

Responsibilities towards employees and visitors

The Principal Contractor shall as far as is reasonably practicable, cause every employee to be made conversant with the hazards to his health and safety attached to any work which he has to perform, any article or substance which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with respect to those hazards or safe work procedures.

The Principal contractor shall ensure that all employees under his or her control are:

- a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and
- b) issued with proof of health and safety induction training issued by a competent person and carry proof of such induction when working onsite.

The Principal contractor shall cause a record of training to be kept which indicates the names, identity numbers and job description of all those who attended such training.

The Principal contractor shall not allow or permit any employee to enter the site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

The Principal contractor shall ensure that each visitor to a construction site, save where such visitor only visits the site office and is not in direct contact with the construction work activities:

- a) undergoes health and safety instruction pertaining to the hazards prevalent on the site; and
- b) is provided with the necessary personal protective equipment.

The Principal contractor shall provide suitable on-site signage to alert workers and visitors to health and safety requirements. Such signage shall include but not be limited to:

- a) unauthorized entrance prohibited;
- b) signage to indicate what personal protective equipment is to be worn; and
- c) activity related signs.

The Principal contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at workplace.

Subcontractors

The Principal contractor may only subcontract work in terms of a written subcontract and shall only appoint a subcontractor should he be reasonably satisfied that such a subcontractor has the necessary competencies and resources to safely perform the work falling within the scope of the contract. Such a subcontract shall require that the subcontractor to:

- a) co-operate with the Principal contractor as far as is necessary to enable both the Principal contractor and subcontractor to comply with the provisions of the Act; and
- b) as far as is reasonably practicable, promptly provide the Principal contractor with any information which might

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[Signature box for Employer]

Employer

[Signature box for Witness 1]

Witness 1

[Signature box for Witness 2]

Witness 2

[Signature box for Contractor]

Contractor

[Signature box for Witness 1]

Witness 1

[Signature box for Witness 2]

Witness 2

affect the health and safety of any person at work carrying out work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

The Principal contractor shall provide any sub-contractor who is submitting a tender or appointed to perform a sub-contract falling within the scope of the contract, with the relevant sections of this specification and any work specific information which might be pertinent to the sub-contract.

The Principal contractor shall take reasonable steps as are necessary to ensure:

- a) co-operation between all sub-contractors to enable each of those sub-contractors to comply with the requirements of the Act and associated regulations; and that each sub-contractor's health and safety plan is implemented

The Principal contractor shall conduct periodic audits for compliance with the approved health and safety plan of each and every sub-contractor working on the site at intervals agreed upon with such subcontractors, but at least once per month.

The Principal contractor shall stop any subcontractor from executing construction work which is not in accordance with the Contractor's or subcontractor's health and safety plan for the site or which poses a threat to the health and safety of persons.

The Principal contractor shall ensure that where changes to the works occur, sufficient health and safety information and appropriate resources are made available to subcontractor to execute the work safely.

The Principal contractor shall ensure that:

- a) every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing onsite;
- b) potential subcontractors submitting tenders have made provision for the cost of health and safety measures during the construction process; and
- c) every subcontractor has in place a documented health and safety plan prior to commencing any work on site which falls within the scope of the contract.

The Principal contractor shall receive, discuss and approve health and safety plans submitted by subcontractors.

The Principal contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

The Principal contractor shall reasonably satisfy himself that all employees of subcontractors are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

The Principal contractor shall satisfy himself that ensure that all subcontractor employees deployed in the site are:

- a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and
- b) issued with proof of health and safety induction training issued by a competent person and carry proof such

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Witness 2

induction when working onsite.

First aid, emergency equipment and procedures

The Principal contractor shall where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment.

The Principal contractor shall ensure that where there are more than 10 employees employed on the site that for every group of up to 50 employees at that workplace, at least one person readily available during normal working hours, who is in possession of a valid certificate of competency in first aid.

Facilities for workers

The Principal Contractor shall provide and keep clean and fit for use at or within reasonable access of the site:

- a) at least one shower facility for every 15workers;
- b) at least one sanitary facility for every 30workers;
- c) changing facilities for each sex;and
- d) Sheltered eating areas.

The Principal contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

Signed this day of 20 at

..... (Place)

(Full name)..... (Signature)

On behalf of(Principal contractor/Agent)

Contractor Responsible Manager (responsible for signing Client's 'contract on behalf of the Principal contractor)

Witnesses

1.

2.

Signed this day of20.....

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Witness 2

Contractor

Witness 1

Witness 2

at (Place)

(Full name).....(Signature).....

On Behalf of **Client/Agent.**

(Contracts and/or Project Manager)

Witnesses

1.

2.

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ANNEXURE A

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
Regulation 3 of the Construction Regulations, 2003

NOTIFICATION OF CONSTRUCTION WORK

1.(a) Name and postal address of principal contractor:

(b) Name and tel. no of principal contractor's contact person:

2. Principal contractor's compensation registration number: _____

3.(a) Name and postal address of client:

(b) Name and tel no of client's contact person or agent:

4.(a) Name and postal address of designer(s) for the project:

(b) Name and tel. no of designer(s) contact person:

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 6.(1). _____

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 6.(2).

7. Exact physical address of the construction site or site office:

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8. Nature of the construction work:

9. Expected commencement date: _____

10. Expected completion date: _____

11. Estimated maximum number of persons on the construction site.

12. Planned number of contractors on the construction site accountable to principal contractor:

13. Name(s) of contractors already chosen.

Principal Contractor

Date

Client

Date

- THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR PRIOR TO COMMENCEMENT OF WORK ON SITE.
- ALL PRINCIPAL CONTRACTORS THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.

GOVERNMENT NOTICE

DEPARTMENT OF LABOUR

No. R.

.....2003

Occupational Health and Safety Act, 1993

Incorporation of Safety Standards in the Construction Regulations, 2003

Under section 44 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), I, Thembelani Waltermade Nxesi, Minister of Labour, after consultation with the Advisory Council for Occupational Health and

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Safety, hereby incorporate in the Construction Regulations, 2003 the health and safety standards specified in the Schedule.

M M S Mdladlana Minister of Labour.

SCHEDULE

1. Regulation 14(1)

The South African Bureau of Standards' Code of Practice SABS 085, as amended, entitled "The Design, Erection, Use and Inspection of Access Scaffolding".

2. Regulation 15(2)(a)

The South African Bureau of Standards' Standard Specification SABS EN 1808, as amended, entitled "Safety Requirements on Suspended Access Equipment – Design calculations, stability criteria, construction-tests".

The South African Bureau of Standards' Standard Front-end Specification SABS 1903, as amended, entitled "Safety Requirements on Suspended Access Equipment – Design calculations, stability criteria, construction-tests".



Department of Labour

GUIDE TO THE GENERAL ADMINISTRATIVE REGULATIONS, 2003

Chief Directorate

of

Occupational Health and Safety

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1. INTRODUCTION

- 2. As the name of the regulation indicates, the General Administrative Regulations determines the administrative procedure of the Occupational Health and Safety Act. This procedure was not placed in the Act itself owing to the fact that changes can be made to a Regulation with greater ease than that of a Section in the Act. A change to a Section of the Act needs to be passed by parliament whereas the Minister of the relevant Department can approve a change in a Regulation.
- 3. The General Administrative Regulations, as is the case with all other regulations, is an extension of the Act and should therefore be seen as a complete unit.

3.1 Terms, which were previously defined in the Act, are not redefined in the Regulations. If a specific definition does not appear in the Regulations, then it should be available in Section 1 of the Act.

4. DEFINITIONS

- 5. All new phrases as well as words (expressions and words which differ from the standard dictionary definitions) that are used in this regulation, which have not been defined in the Act, will be defined in this regulation. Where the Act or regulation refers to “mean” the definition in the Act or regulation must be considered and where there’s reference made to “It Includes” definition from the Act and regulation including the oxford dictionary must be considered

6. ACCESS TO PREMISES

- 7. It is prohibited for an employer to refuse an inspector entry to perform his or her function because an inspector is entitled by the law to enter employer’s workplace.
- 8. Employers should always ensure that inspectors are accompanied by a person who has knowledge and experience of the activities and safety requirements of the workplace.

9. EXEMPTIONS

- 10. Any exemption, which has been granted to any person, shall be signed by the Chief Inspector of the Department of Labour. An person who wishes to apply for an exemption should forward his/her application to the office of the Chief Inspector in Pretoria. The application for exemption should indicate proof that the health and safety of persons who are likely to be affected by the exemption will not be prejudiced in consequences of it. Health and safety representatives and committees must be consulted during the whole process and given time to comment.

11. COPY OF THE ACT

Employer

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Contractor

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11.1 Employees together with employers have certain duties and rights, which have been assigned to them in terms of the Act. In order to comply with the provisions of the Act and regulations, each employee must have access to a copy of the Act. This regulation requires that—

11.1.1 Each employer with 5 or more employees shall have a copy of at least one Act, which will be made readily available for perusal by the employee. Owing in the fact that a workplace can be made up of a very large area, and that the legislator did not intend to be unreasonable, various concessions are made. For example, a meter-reader in the town of Brits' workplace is the Municipal area of Brits. In such a case it is expected that a copy of the Act be made available at the point where the employee reports for duty in the morning, or any other suitable position as agreed upon with the employer.

11.1.2 Each employer with less than 5 employees, shall, if requested provide a copy of the Act for perusal by the employees. This includes farm workers and domestic servants.

11.1.3 The copy of the Act may be an electronic reproduction or from a library. The Act and Regulations are amended from time to time, and it is therefore important to remember that one must obtain a copy of the latest amendments to keep up to date with the current legislation.

12. HEALTH AND SAFETY COMMITTEES

12.1 Health and Safety committees are made up of all the Health and Safety Representatives together with an equal amount of employer appointee representatives to represent the employer (there can be more than one committee to avoid a large congregation of representatives). If more than two committees are established, each health and safety representative must be member of at least one of the committees. These committees are the point around which self-regulation revolves.

12.2 Employer should provide necessary equipment, facilities and stationery required by the committee in order them to perform their functions.

12.3 It is important to keep the records of the meeting as they can be used as evidence for action taken to eliminate hazards and vice versa

13. NEGOTIATIONS AND CONSULTATIONS BEFORE DESIGNATION OF HEALTH AND SAFETY REPRESENTATIVES

13.1 The regulation prescribes the items which must be agreed upon during negotiations between the employer and employees representatives. If a dispute arises between the employees and employers or his authorised representative, the matter should be referred for arbitration. Both parties shall submit a statement within a prescribed period to both the arbitrator and the other party concerned.

13.2 The statement is to contain the following information:

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

- 13.2.1 The proposal for the arrangements and procedures for the nomination of the Health and Safety Representatives.
- 13.2.2 The decision which is sought.
- 13.3 The arbitrator should then:
 - 13.3.1 Determine when and where the arbitration procedure shall be held. The arbitration may be held in the absence of the party who failed to submit a statement to the arbitrator and other party;
 - 13.3.1.1 Determine whether a pre-hearing conference shall be held;
 - 13.3.1.2 Determine which arbitration procedures shall be followed;
 - 13.3.1.3 Determine the procedures for the admission of evidence;
 - 13.3.1.4 Determine the admissibility of hearsay evidence; and
 - 13.3.1.5 Determine other relevant procedural matters.
 - 13.3.2 In terms of Section 17(2) of the Act both parties are to come to a decision within 14 days as to who the arbitrator shall be. If no decision can be made, the president of the Labour Court is to be notified in writing. The president of the Labour Court in consultation with the Chief Inspector shall appoint an arbitrator, whose decision shall be final. This arbitrator will be entitled to receive remuneration as is payable to an additional member of the Labour Court.

14. DESIGNATION OF HEALTH AND SAFETY REPRESENTATIVES

- 14.1 The employer must designate Health and Safety Representatives as follows:
 - 14.1.1 Shops and offices— one for up to 100 employees; and
 - 14.1.2 Workplaces other than shops and offices— one for up to 50 employees.
- 14.2 The employer shall ensure that employees designated as health and safety representatives meet the following requirements:
 - 14.2.1 Employed in a full-time capacity in the specific workplace or section thereof;
 - 14.2.2 Acquainted with conditions and activities at that workplace or section thereof, and

Employer

Witness 1

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14.2.3 Taking into account the nature of hazards associated with the activities of the workplace or section thereof, the employer shall provide as far as is reasonable practicable health and safety training to the health and safety representatives on how to identify health and safety risks and how to conduct inspections of the workplace or section thereof.

15. REPORTING OF INCIDENTS AND OCCUPATIONAL DISEASES

15.1 Section 24 of the Act refers to certain incidents occurring at the workplace, or in connection with the use of machinery whereby a person dies or is injured to be extent where he is likely to die or could have resulted in a major incident. Such incidents should be reported to the Provincial Director on a WCL 1 or WCL 2 form within seven days.

15.2 Certain other types of incidents must be reported to the Provincial Director telephonically, facsimile or similar means of communication and these types of incidents are as follows—

15.2.1 Where a person, as a result of the incident;

15.2.2 Dies;

15.2.3 Becomes unconscious;

15.2.4 Suffers the loss of a limb or part thereof;

15.2.5 Is injured to the extent that he is likely to die;

15.2.6 Is injured to the extent that he is likely to be permanently disabled;

15.2.7 Is injured to the extent that he is likely to be off for a period of 14 days or more;

15.2.8 Cannot perform his normal duties (those duties for which he was employed).

15.3 An incident of major consequence arising out of the use of industrial equipment or machinery or industrial practices at a workplace.

15.4 The health and safety of any person is endangered and where –

15.4.1 A dangerous substance was spilled.

15.4.2 The uncontrolled release of any substance under pressure (pressure greater than 1 atmosphere) took place.

15.4.3 Machinery or any part thereof fractured or failed, resulting in flying, falling or uncontrolled moving objects; or

15.4.4 Machines, which ran out of control

15.5 These incidents should also be recorded and investigated in accordance to Regulation 8 of the General Administrative Regulations.

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Witness 2

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Witness 1

Witness 2

- 15.6 If an injured person is to die as a result of an incident, which has already been reported in terms of the above, the employer or user should report such death to the Provincial Director.
- 15.7 Any registered medical practitioner should, in terms of Section 25 of the Act, report all (to the employer and Chief Inspector) cases of occupational diseases or any other disease, which he believes arose out of a person's employment, which he/she has treated. This must be done within 14 days in the form of a WCL 22 form.
- 15.8 Any other person may in writing, give notice of any disease suspected to be an occupational disease, to the employer and chief inspector.

16. RECORDING AND INVESTIGATION OF INCIDENTS

- 16.1 The employer or user of machinery should keep record and investigate all incidents referred to in terms of Section 24 of the Act together with any other incident, which resulted in the person concerned having had to receive medical treatment other than first aid.
- 16.2 These incidents must be recorded in the form of Annexure 1 of these regulations and be kept for a period of at least 3 years. This record shall be kept on the premises and available for perusal by an inspector.
- 16.3 The employer, a designated person, a health and safety representative or a member of the health and safety committee must investigate the above-mentioned incidents. This investigation should take place within 7 days from the date of incident and completed as soon as is reasonably practicable or within the contracted period of contract workers.
- 16.4 The employer should record the result of the investigation in the Annexure 1. The purpose of the investigation is to establish the cause of the incident together with the safety measures that can be implemented to prevent the re-occurrence of such incidents in the future.
- 16.5 The health and safety committee shall examine this record at their next meeting.

17. WITNESS AT AN INQUIRY

- 17.1 The chief inspector can, in terms of Section 32, direct an inspector to hold a formal inquiry as a result of an incident reported in terms of Section 24 (refer to Regulation 6). In such an instance, the inspector shall inform the employer or user of machinery of his intentions, and request the following from him/her:
 - 17.1.1 That all persons witness to the incident; and

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

17.1.2 That any other person as required by the inspector be notified in connection with the time, date and venue of the formal inquiry.

17.2 The employer or user of machinery is to establish which persons are likely not to attend the inquiry and shall advise the inspector of the names and addresses of such persons to allow the inspector to subpoena such persons.

18. RETURNS

18.1 An employer or user shall furnish the inspector with such information as requested for the purpose of the Administration of the Act.

C4.3 Site Administration Forms

All site administration documents will be handed over at the site handover meeting.

C4.4 Geological Investigation

Report available at request.

C4.5 Climatic Information

For the purpose of this Specification, the Tlhabane shall be regarded as normal environment.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

TENDER DRAWINGS

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Employer

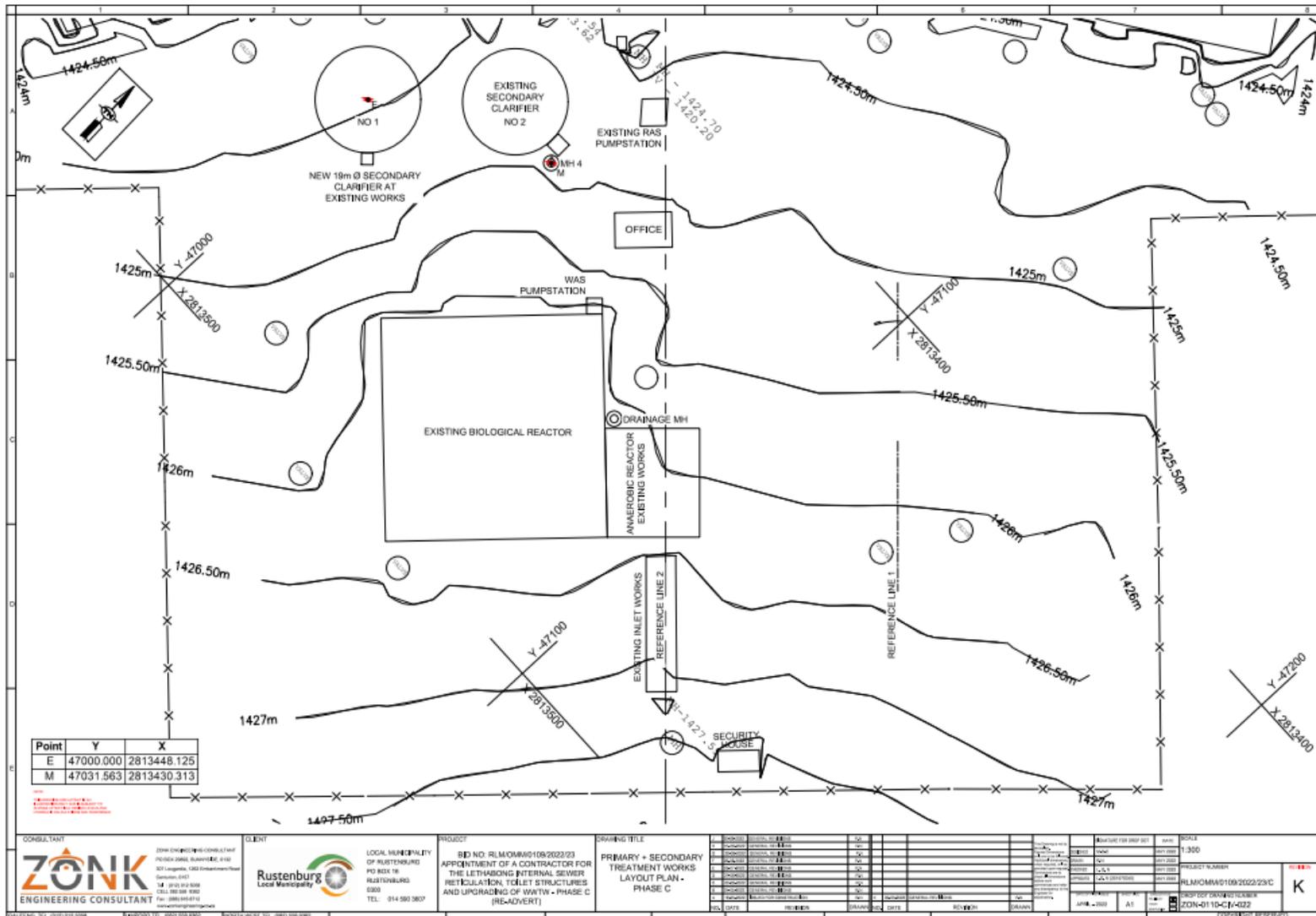
Witness 1

Witness 2

Contractor

Witness 1

Witness 2



CONSULTANT 		CLIENT 		PROJECT BID NO: RL/MOM/0108/2022/03 APPOINTMENT OF A CONTRACTOR FOR THE LETHABONG INTERNAL SEWER RETICULATION, TOILET STRUCTURES AND UPGRADING OF WWTV - PHASE C (RE-ADVERT)		DRAWING TITLE PRIMARY - SECONDARY TREATMENT WORKS LAYOUT PLAN - PHASE C		SCALE 1:300	
PROJECT CLASSIFICATION RL/MOM/0108/2022/03/C		DATE 2022-08-01		PROJECT CLASSIFICATION RL/MOM/0108/2022/03/C		DATE 2022-08-01		PROJECT CLASSIFICATION RL/MOM/0108/2022/03/C	

Contract

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Employer

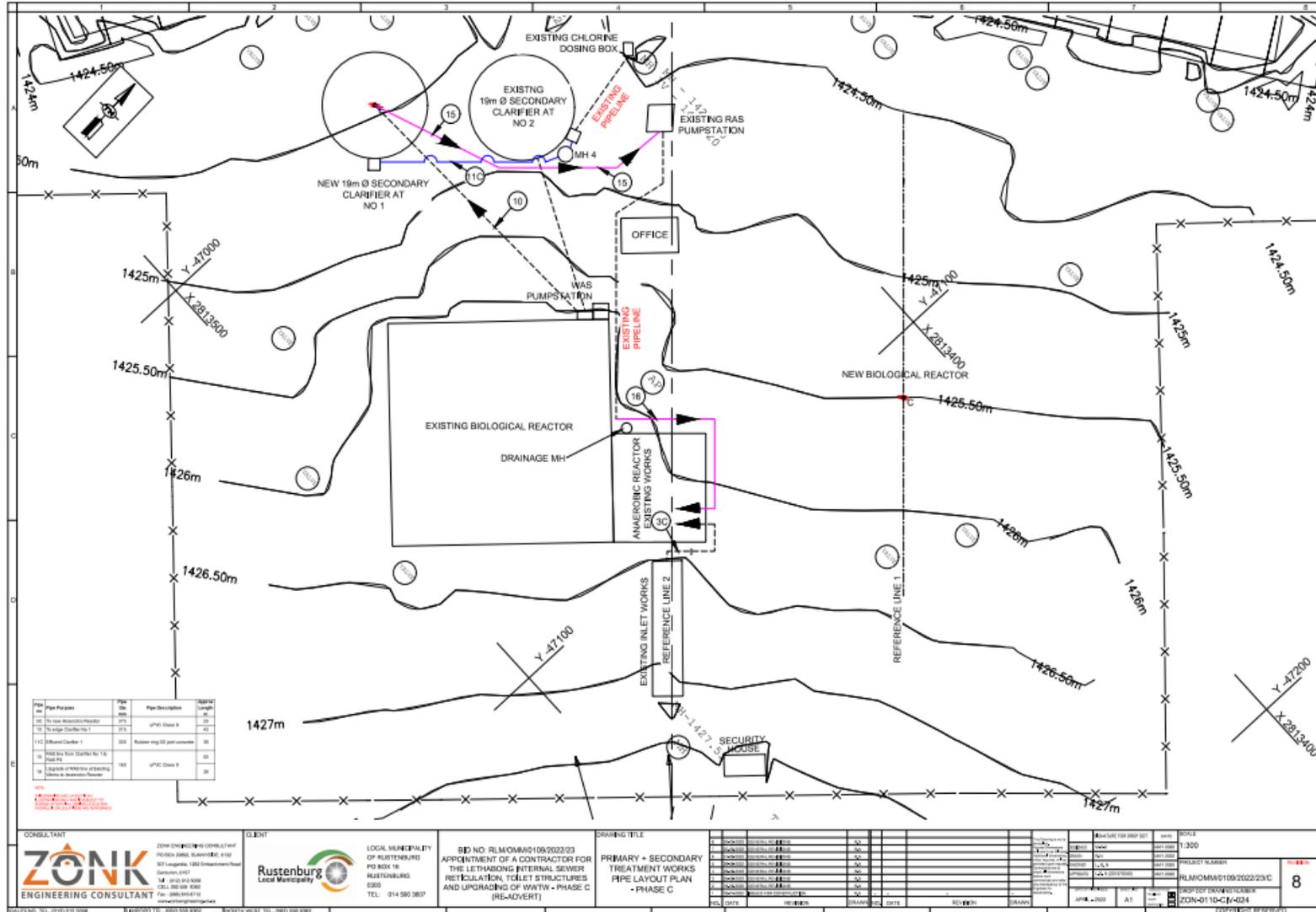
Witness 1

Witness 2

Contractor

Witness 1

Witness 2



Contract

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Employer

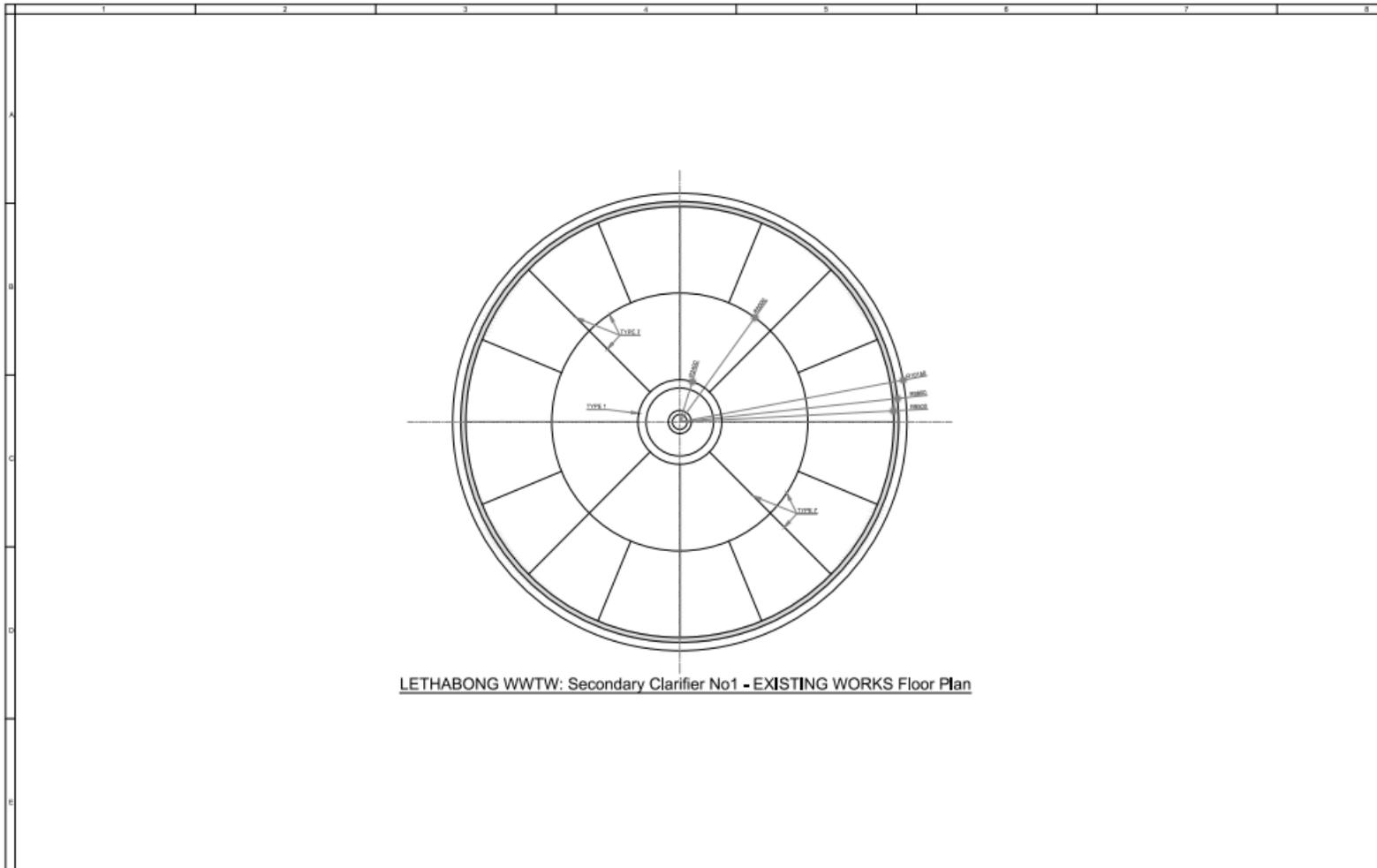
Witness 1

Witness 2

Contractor

Witness 1

Witness 2



LETHABONG WWTW: Secondary Clarifier No1 - EXISTING WORKS Floor Plan

CONSULTANT 	CLIENT 	PROJECT BID NO. RLM/OMW/109/2022/23 APPOINTMENT OF A CONTRACTOR FOR THE LETHABONG INTERNAL SEWERS RETICULATION, TOILET STRUCTURES AND UPGRADING OF WWTW - PHASE C (RE-ADVERT)	DRAWING TITLE Secondary Clarifier 19m dia Floor Plan	Author: [] Date: []	Scale: 1:300
				Checked: [] Date: []	Project Number: RLM/OMW/109/2022/23/C Drawing Number: 2
Date: [] Revision: [] Drawn: [] Checked: [] Approved: []				Appr: [] At: []	Drop off structure number: ZON-0110C-J-029

Contract

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Employer



Witness 1



Witness 2



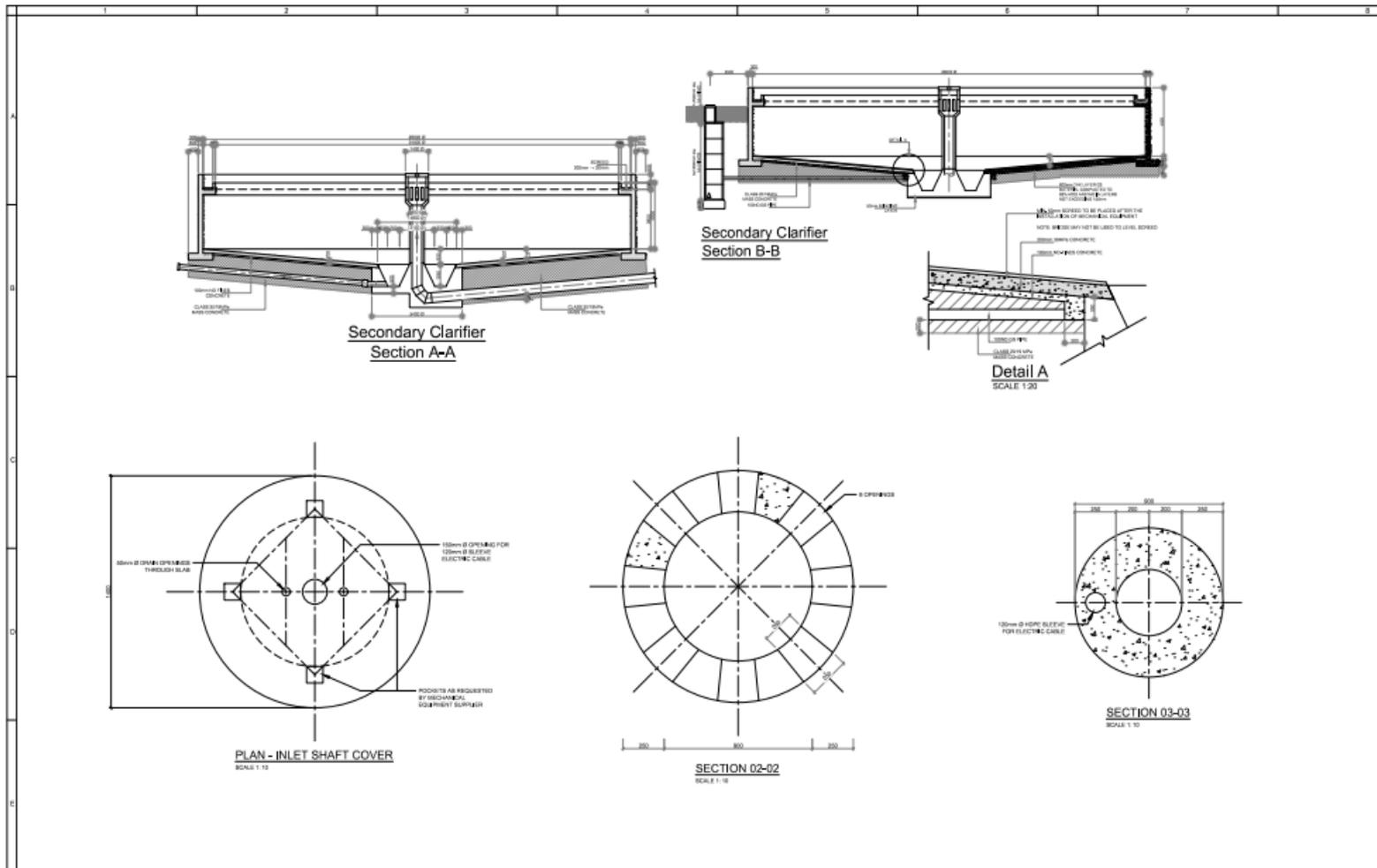
Contractor



Witness 1



Witness 2



CONSULTANT ZONK ENGINEERING CONSULTANT 2000 DUNDAS STREET WEST TORONTO, ONTARIO, CANADA M5G 1L5 TEL: (416) 593-8300 FAX: (416) 593-8301 www.zonkengineering.com	CLIENT Rustenburg Local Municipality	LOCAL MUNICIPALITY OF RUSTENBURG PO BOX 19 RUSTENBURG 5600 TEL: 014 560 3607	PROJECT BID NO: RLM/MW/0109/2022/23 APPOINTMENT OF A CONTRACTOR FOR THE LETHBRIDGE INTERNAL SEWER RETICULATION, TOILET STRUCTURES AND UPGRADING OF WWTP - PHASE C (RE-ADVERT)	DRAWING TITLE Secondary Clarifier Sections A and B, Detail A, Plan of Inlet Shaft and Sections 2 and 3	DESIGNED BY: [] CHECKED BY: [] DATE: []	DRAWN BY: [] DATE: []	SCALE: 1:300 PROJECT NUMBER: RLM/MW/0109/2022/23/C DRAWING NUMBER: ZON-0110-C-F-030 SHEET NUMBER: 2
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Contract

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Employer

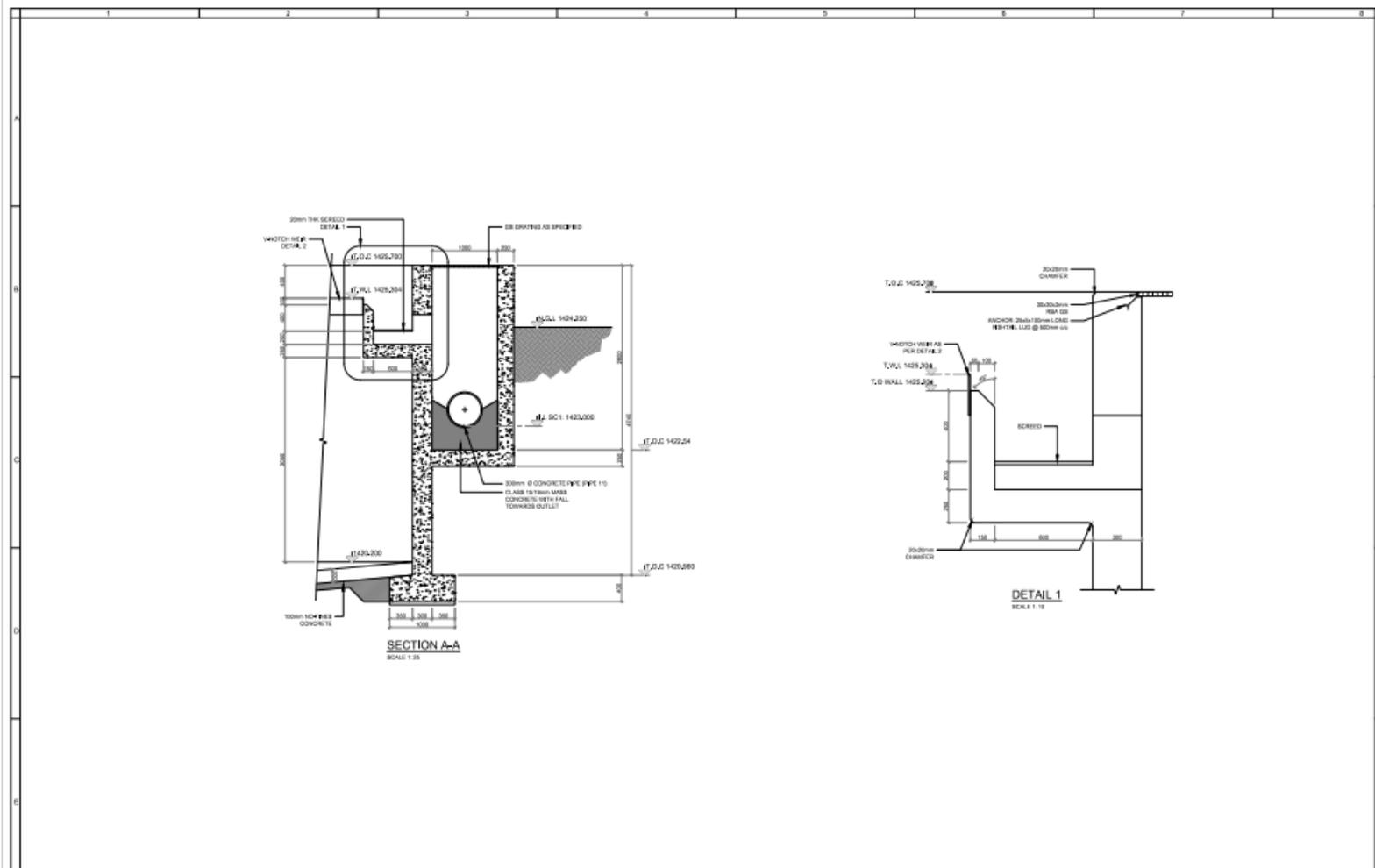
Witness 1

Witness 2

Contractor

Witness 1

Witness 2



CONSULTANT ZONK ENGINEERING CONSULTANT 141 LEGGIE STREET, SUITE 101 RUSTENBURG 5600 TEL: 014 560 3600 www.zonk.co.za	CLIENT LOCAL MUNICIPALITY OF RUSTENBURG PO BOX 16 RUSTENBURG 5600 TEL: 014 560 3607	PROJECT BID NO: RLM/OMM/109/2022/23 APPOINTMENT OF A CONTRACTOR FOR THE LETHABONG INTERNAL SEWER RETICULATION, TOILET STRUCTURES AND UPGRADING OF WWTP - PHASE C (RE-ADVERT)	DRAWING TITLE Secondary Clarifier Outlet Box Details Sections A and Detail 1	REVISIONS <table border="1"> <tr><th>NO.</th><th>DATE</th><th>REVISION</th><th>BY</th><th>CHKD</th></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>		NO.	DATE	REVISION	BY	CHKD						SCALE 1:300
				NO.	DATE	REVISION	BY	CHKD								
PROJECT INFORMATION <table border="1"> <tr><td>PROJECT NO.</td><td>RLM/OMM/109/2022/23/C</td></tr> <tr><td>PROJECT NAME</td><td>ZON-0110-C1-433</td></tr> <tr><td>PROJECT NUMBER</td><td>2</td></tr> </table>					PROJECT NO.	RLM/OMM/109/2022/23/C	PROJECT NAME	ZON-0110-C1-433	PROJECT NUMBER	2	DATE 2022/10/20					
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PROJECT NAME	ZON-0110-C1-433															
PROJECT NUMBER	2															

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

ANAEROBIC REACTOR AT EXISTING WORKS

PIPE SPECIAL	DIAMETER	DESCRIPTION	Qty
I1		CANCELLED	
I2	ND300	PIPE 500mm LONG, ONE END FLANGED, WITH PUDDLE FLANGE 175mm FROM UNFLANGED END	1
I3	ND300	BEND 90°, BOTH ENDS FLANGED	1
I4	ND300	FLANGE ADAPTOR: 315mm dia uPVC to ND300 STEEL	1
I5	ND150	BELLMOUTH ENDPiece, END FLANGED	1
I6	ND150	PIPE 1000mm LONG, BOTH ENDS FLANGED	1
I7	ND150	BEND 90°, BOTH ENDS FLANGED	2
I8	ND150	PIPE 550mm LONG, BOTH ENDS FLANGED	1
I9	ND150	PIPE 1410mm LONG, BOTH ENDS FLANGED	1
I10	ND150	DUCKFOOT 90° BEND, BOTH END FLANGED	1
I11	ND150 - 160mm dia	FLANGE ADAPTOR: 160mm dia uPVC to ND150 STEEL	1

SECONDARY CLARIFIER NO. 1

PIPE SPECIAL	DIAMETER	DESCRIPTION	Qty
SF1		CANCELLED	
SF2	ND300	PIPE 1200mm LONG, BOTH ENDS FLANGED	1
SF3	ND300	SEGMENTED 90° BEND, RADIUS TO CENTRE LINE 637mm, BOTH ENDS FLANGED	1
SF4	ND300	PIPE 2260mm LONG, ONE END FLANGED, OTHER END PLAIN	1
SF5	ND300	PIPE 1350mm LONG, BOTH ENDS PLAIN	1
SF6	ND300	PIPE 3030mm LONG, BOTH ENDS PLAIN	2
SF7	ND300	VIKING JOHNSON COUPLING	4
SF8	ND300 - 315mm dia	FLANGE ADAPTOR: 315mm dia uPVC to ND300 STEEL	1
SR1	ND150	PIPE 1350mm LONG, BOTH ENDS PLAIN WITH PUDDLE FLANGE 200mm FROM ONE END	1
SR2	ND150	PIPE 5300mm LONG, BOTH ENDS PLAIN	1
SR3	ND150	VIKING JOHNSON COUPLING	2
SR4	ND150	5400mm LONG, ONE END FLANGED, OTHER END PLAIN	1
SR5	ND150 - 160mm dia	FLANGE ADAPTOR: 160mm dia uPVC to ND150 STEEL	1

CONSULTANT  ZONK ENGINEERING CONSULTANT 307 Leinster Road, Sandown, Durban 4013 Tel: 031 261 8124 Fax: 031 261 8125 www.zonkeng.co.za	CLIENT  Rustenburg Local Municipality PO Box 19 Rustenburg 0850 Tel: 014 563 3637	PROJECT BID NO: RLM/OMW/109/2022/23 APPOINTMENT OF A CONTRACTOR FOR THE LEASING INTERNAL SEWER RETICULATION, TOILET STRUCTURES AND UPGRADING OF WWTW - PHASE C (RE-ADVERT)	DRAWING TITLE Pipe Specials Schedules	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	DESCRIPTION										<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	DESCRIPTION										SCALE AS SHOWN PROJECT NUMBER RLM/OMW/109/2022/23/C DRAWING NUMBER ZON-01-10-C4-037
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NO.	DATE	DESCRIPTION																												

Contract

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Employer



Witness 1



Witness 2



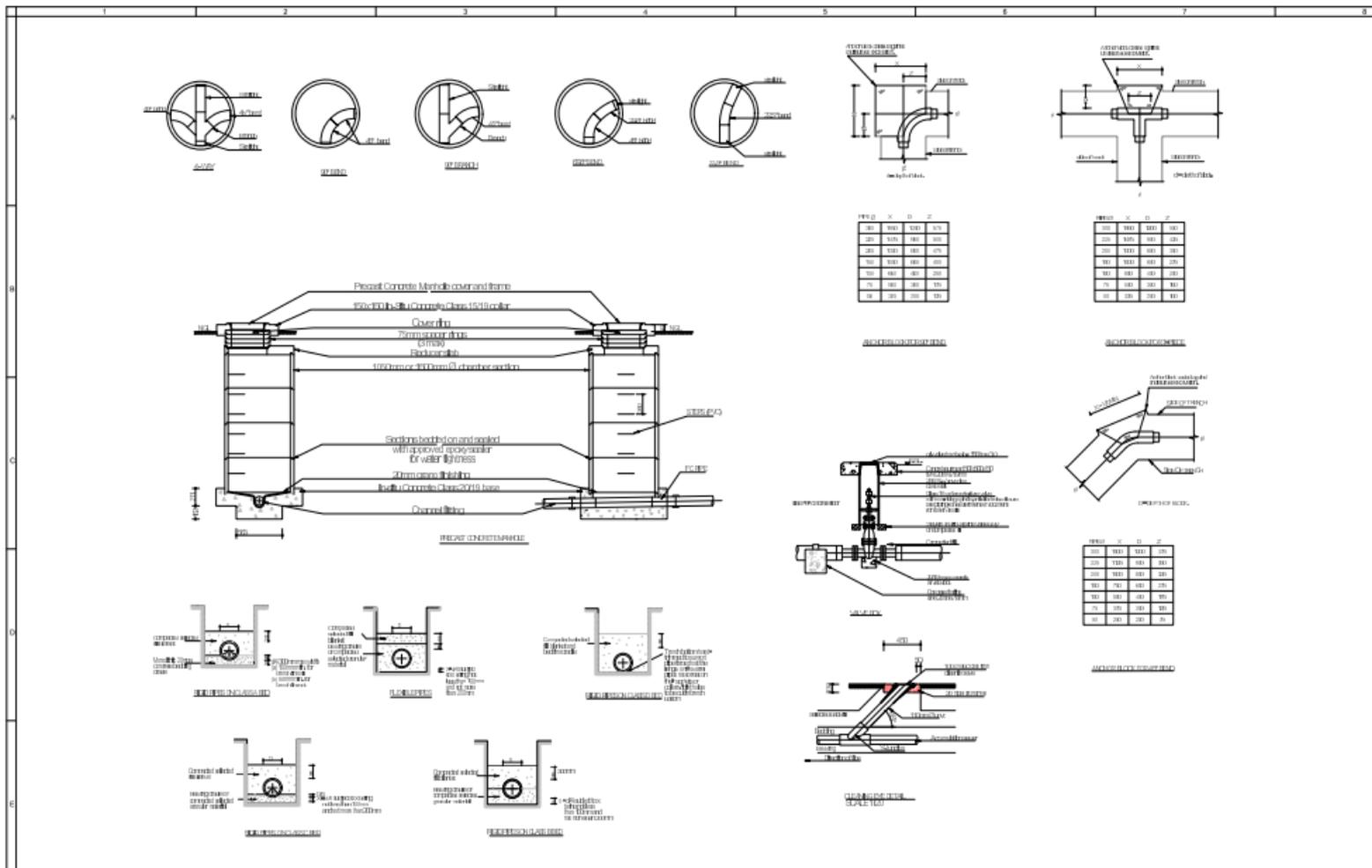
Contractor



Witness 1



Witness 2



CONSULTANT ZONK ENGINEERING CONSULTANT P.O. BOX 2068, SUDBURY 410 301 Langdon, 1280 Greenwood Road Sudbury, ONT TEL: (519) 512-5008 CELL: (519) 518-5000 FAX: (519) 514-2174 www.zonkengineering.com	CLIENT Rustenburg Local Municipality	PROJECT BID NO: RLMKOMM109/2022/23 APPOINTMENT OF A CONTRACTOR FOR THE LETHABONG INTERNAL SEWER RETICULATION, TOILET STRUCTURES AND UPGRADING OF WWTN - PHASE C (RE-ADVERT)	DRAWING TITLE Manholes, Pipe Bedding and Anchor Blocks	DATE: _____ REVISION: _____ DRAWN: _____ CHECKED: _____		SCALE: AS SHOWN PROJECT NUMBER: RLMKOMM109/2022/23/C DRAWING NUMBER: ZON-01-10-C1-408		2
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Contract

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Employer

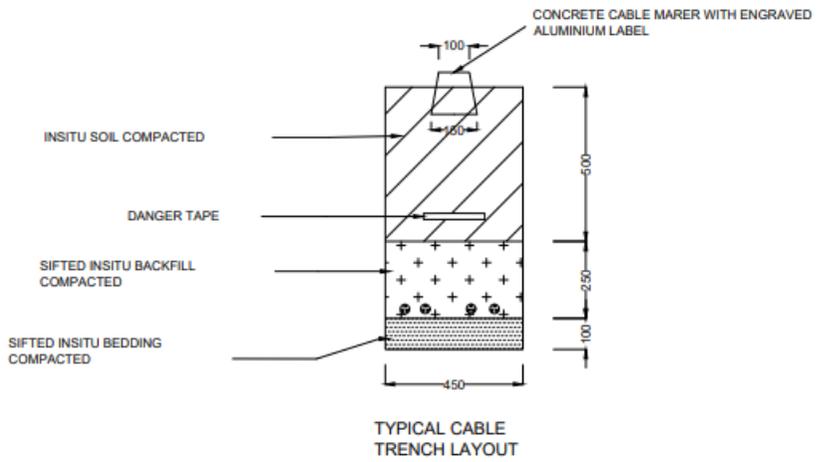
Witness 1

Witness 2

Contractor

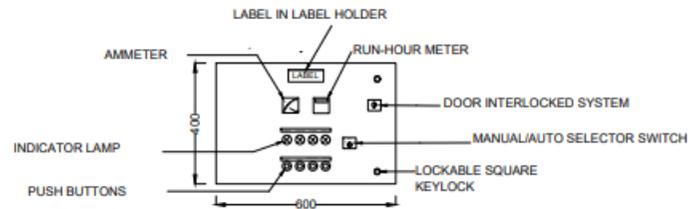
Witness 1

Witness 2



ELECTRICAL
SCALE 1:50 000

CONSULTANT ZONK ENGINEERING CONSULTANT PO BOX 3886, BLOEMFONTEIN 9102 087 266 4444 Tel: 051 512 030 Fax: 051 512 030 www.zonkengineering.co.za	CLIENT Rustenburg Local Municipality	LOCAL MUNICIPALITY OF RUSTENBURG P.O. BOX 1047, BIKANIPANSTAD, 1430 TEL: 012 716 1066 FAX: 012 716 1068	PROJECT LETHABONG SEWER RETICULATION, TOILET STRUCTURES AND UPGRADING OF THE WWTW	DRAWING TITLE ELECTRICAL DETAILS	<table border="1"> <tr><th>NO.</th><th>DATE</th><th>REVISION</th><th>BY</th><th>CHKD.</th></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	NO.	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TYPICAL MCC DOOR LAYOUT

ELECTRICAL
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CONSULTANT ZONK ENGINEERING CONSULTANT 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Contract

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Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2