MUNICIPAL TENDER REFERENCE

BID/NC062/10/2024/2025

CONTRACT DOCUMENT

FOR THE

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

PROJECT NO: 35023.01/2024/01

VOLUME 3

(RETURNABLE DOCUMENT)

NOTE:

- **The Form of Offer and Acceptance (C1.1) is on page 73-74 of this document (see also Clause F.4.4 on page 11)**

CLIENT:

NAMA-KHOI MUNICIPALITY
PO Box 17
SPRINGBOK
8240

Tel.: 027 718 8100
Fax: 027 718 2661

ENGINEER:

BVi Consulting Engineers
P.O.Box 683
SPRINGBOK
8420

Tel.: 027 – 712 9990
Fax: 027 – 712 9991

NOVEMBER 2024

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

GENERAL TENDER INFORMATION

TENDER ADVERTISED	:	**Friday, 08 November 2024**
ESTIMATED CIDB CONTRACTOR GRADING	:	5CE or Higher
SITE VISIT/CLARIFICATION MEETING	:	10h00 on Wednesday, 20 November 2024 (Compulsory)
VENUE FOR SITE VISIT/CLARIFICATION MEETING	:	THE JUNIOR CLUB VENUE IN NABABEEP
CLOSING DATE	:	**Friday, 29 November 2024**
CLOSING TIME	:	12h00
CLOSING VENUE	:	NAMA-KHOI MUNICIPALITY 4 Namakwa Street SPRINGBOK 8240

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

TENDER SUMMARY

Tender (Supply of material, Plant and Labour)

1. **Gross Tender Sum (Incl. VAT):** R……..…….....

2. **Construction Period:** ……**(weeks)**

Name of Tenderer:

_____

Address:

_____

_____

_____

_____

_____ _____

SIGNATURE OF TENDERER **DATE**

_____ _____

NAMA-KHOI MUNICIPALITY **DATE**

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

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Part T1: Tendering procedures

NAMA-KHOI MUNICIPALITY
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REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

Tender Notice and Invitation to Tender

NAMA-KHOI MUNICIPALITY invites tenders for Tender No. **NC062/10/2024/2025: REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS**

The contract entails the following:

- Construction of a New Archimedes Screw Pump Station
- Construction of a New Inlet Works c/w Grit Channels and Flume
- Refurbishment of Existing Concrete Structures.
- Replacing of existing Piping

It is estimated that tenderers should have a CIDB contractor grading designation of **5CE or higher**.

Documents can be obtained from e-tender or may be collected from the Supply Chain Department at Nama-Khoi Municipality after paying a non-refundable deposit of **639.28** per document at the cashiers. Queries relating to the issue of these documents may be addressed to the Supply Chain Department from Nama-Khoi Municipality.

A Compulsory site visit/clarification meeting with representatives of the Employer/Engineer will take place at The Junior Club Venue in Nababeep on **Wednesday 20th November 2024 starting at 10h00**.

Sealed tenders and drawings appropriately marked with the contract number and name of the project, must be deposited in the tender box of NAMA-KHOI MUNICIPALITY, 4 Namakwa Street, SPRINGBOK, before **Friday, 29th November 2024 at 12h00**, whereafter the tenders will be opened in public.

Facsimile, e-mail and late tenders will not be accepted.

The Municipality reserves the right not to award the tender to the only or the lowest Tenderer. Tenders may only be submitted on the tender documentation that has been issued.

No tender offer will be considered from the following tenderers:

a) The tenderers must comply to the CIDB-Grading Conditions.
b) Persons who were convicted for fraud or corruption during the past five years.
c) Who wilfully neglected, reneged on, or failed to comply with, a governrment contract during the past five years.
d) Tenderer who cannot submit a pin issued by SARS.
e) Tenderer who is not registered or accredited as a supplier or a contractor according to the Central Supplier Database (CSD).
f) Proof cannot be provided that a performance quarantee can be submitted on the award of the contract.

Mr. W Cloete
BVi Consulting Engineers
P.O Box 683
SPRINGBOK
8420
Tel.: 027 712 9990

Mr JH Adams
NAMA-KHOI MUNICIPALITY
PO Box 17
SPRINGBOK
8240
Tel.: 027 718 8100

NAMA-KHOI MUNICIPALITY

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

LOCALITY PLAN

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of Board Notice 12 of 2009 in Government Gazette No. 31823 of 30 January 2009, Construction Industry Development Board (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 Annex 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.

The following variations, amendments and additions to the Standard Conditions of Tender as set out in the Tender Data below shall apply to this tender:

Clause Number	**Tender Data**

F.1 General

F.1.1 **Actions**

Add the following:

The Employer is **NAMA-KHOI MUNICIPALITY** represented by the MUNICIPAL MANAGER: Mr. J Swartz

F.1.2 **Tender Documents**
Add the following:

"The following documents form part of this tender:

VOLUME 1 : The General Conditions of Contract for Construction Works (3rd Edition 2015) prepared by the South African Institution of Civil Engineering (SAICE) shall apply to, and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, and Tel:(011)8055947, Fax:(011)8055971, e-mail: civilinfo@saice.org.za.

VOLUME 2 : The SANS Standardised Specifications for Civil Engineering Construction prepared by Standards South Africa. These publications are obtainable and tenderers must obtain copies at their own cost from Standards South Africa, Private Bag X191, PRETORIA, 0001.

Volumes 1 and 2 may also be inspected, by appointment, at the offices of the Employer's Agent during normal office hours.

The contract documents issued by the Employer comprise:

VOLUME 3: The Contract Document (this document), in which is bound:

The Tender

Part T1: Tendering procedures
T1.1 Tender notice and invitation to tender
T1.2 Tender data

Part T2 : Returnable Documents
T2.1 List of returnable documents
T2.2 Returnable schedules

The Contract

Part C1: Agreements and Contract Data
C1.1 Form of offer and acceptance
C1.2 Contract data
C1.3 Form of Guarantee
C1.4 Occupational Health and Safety Agreement
C1.5 Contract of Temporary Employment as Community Liaison Officer

Part C2: Pricing Data
C2.1 Pricing Assumptions
C2.2 Bills of Quantities
C2.3 Declaration

Part C3: Scope of Work
C3.1 Description of the Works
C3.2 Engineering
C3.3 Procurement
C3.4 Construction
C3.5 Management
C3.6 Annexes

Part C4 : Site information
C4 Site information

Volume 3 is deemed the "Returnable Documents" which must be returned to the Employer in terms of submitting a tender offer.

F.1.4 **Communication and employer's agent**

Add the following:

Attention is drawn to the fact that verbal information, given by the Employer's Agent during site visits/clarification meetings or at any other time prior to the award of the Contract, will not be regarded as binding on the Employer. Only information issued formally by the Employer in writing to tenderers will be regarded as amending the Tender Documents.

The Employer's Agent is:	BVi Consulting Engineers NC (Pty) Ltd
Name:	**Mr W Cloete**
Address:	17 A Keeromstreet SPRINGBOK 8420
Tel:	027 712 9990
Fax:	027 712 9991
E-Mail :	winstonc@bvinam.co.za

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

Add the following:

F.1.5.3 The Employer may reject a tender if, in the opinion of the Employer, the tenderer will be unable to achieve the contract participation goal tendered, in the performance of the contract.

F.1.6.2 **Competitive negotiation procedure**

Add the following to F.1.6.2

A competitive negotiation procedure will not be followed.

F.1.6.3 **Proposal procedure using the two-stage system**

Add the following to F.1.6.3

A two-stage system will not be followed.

F.2 Tenderer's obligations

F.2.1 **Eligibility**

Add the following to F.2.1.1:

F.2.1.1 Only those tenderers who satisfy the following criteria are eligible to submit tenders:

F.2.1.1.2 **Construction Industry Development Board (CIDB) Registration**

Only those tenderers who are registered with the CIDB, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations, for a CE class of construction work, are eligible to have their tenders evaluated

Tenderers who are capable of being so registered prior to the evaluation of submissions may be evaluated at the sole discretion of the Employer.

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 CE class of construction work;
3. 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 CE class of construction work or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.

For alpha-numerics associated with the contractor Grading Designations see Annex G attached.

F.2.7 **Site Visit and Clarification meeting**

Add the following:

Tenderers should be represented at the site visit/clarification meeting by a person who is suitably qualified and experienced to comprehend the implications of the work involved.
The arrangements for the clarification meeting and site inspection are as follows:

Location / venue: **THE JUNIOR CLUB VENUE, NABABEEP**
Date: **Wednesday, 20th November 2024; Time: 10h00**

Tenderers must sign the attendance register in the name of the tendering entity. Addenda will be issued to, and tenders will be received only from tendering entities appearing on the attendance register.

F.2.12 **Alternative tender offers**

Add the following to F.2.12.1:

F.2.12.1 If a tenderer wishes to submit an alternative tender offer, he shall do so as separate complete offer on a separate complete set of tender documents clearly marked as an "Alternative Tender" in order to distinguish it from the unqualified tender. The only criterion permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standard and requirements, the details of which may be obtained from the Employer's Agent.

Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative 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 full amount tendered for the alternative portion of the offer to cover the Employer's costs in confirming the acceptability of the detailed design before it is constructed.

F.2.13 **Submitting a tender offer**

Add the following to F.2.13.1

F.2.13.1 Where the tendering entity is a joint venture it is recommended that the standard CIDB Joint Venture Agreement be used.

Add the following to F.2.13.3

F.2.13.3 Parts of each tender offer communicated on paper shall be submitted as an original, plus 0 (nought) copies.

Add the following after the first sentence of F.2.13.4:

F.2.13.4 The tender shall be signed by a person duly authorised to do so. Tenders submitted by joint ventures of two or more firms shall be accompanied by the document of formation of the joint venture, authenticated by a notary public or other official deputed to witness sworn statements, in which is defined precisely the conditions under which the joint venture will function, its period of duration, the persons authorised to represent and obligate it, the participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning.

Add the following to F.2.13.5:

F.2.13.5 The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:

Location of tender box:	**NAMA-KHOI MUNICIPALITY, SPRINGBOK**
Physical address:	4 Namakwa Street, SPRINGBOK, 8240
Identification details:	Tender number **NC062/10/2024/2025**
Title of tender:	**REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS**

Sealed tenders with the Tenderer's name and address and the endorsement "**TENDER NO. NC062/10/2024/2025**: "**REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS"** on the envelope, must be placed in the appropriate official tender box at the abovementioned address.

Add the following to F.2.13.6:

F.2.13.6 A two-envelope procedure will **not** be followed (Read with F.3.5).

Add the following sub-clause after F.2.13.9:

F.2.13.10 By signing the offer part of C1.1 Form of Offer and Acceptance the tenderer declares that all information provided in the tender submission is true and correct.

F.2.15 **Closing time**

Add the following to F.2.15.1:

F.2.15.1 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

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

F.2.16 **Tender offer validity**

Add the following to F.2.16.1:

F.2.16.1 The tender offer validity period is **(90 days)**.

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

Add the following to F.2.17:

A tender will be rejected as non-responsive if the tenderer fails to provide any clarification requested by the employer within the time for submission stated in the employer's written request for such clarification. A tender will also be rejected as non-responsive if the tenderer fails, within the time stated in writing by the Employer, to comply with the requirements of F.4.4.

F.2.18 **Provide other material**

Add the following to F.2.18.1:

F.2.18.1 Provide, on written request by the Employer, where the tendered amount inclusive of VAT **exceeds R 50 million**:

i) ***audited annual financial statement for 3 years***, or for the period since establishment if established during the last 3 years, if required by law to prepare annual financial statements for auditing;
ii) a certificate signed by the tenderer certifying that the tenderer has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days;
iii) particulars of any contracts awarded to the tenderer 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;
iv) ***a statement indicating whether any portion of the goods or services are expected to be sourced from outside the Republic***, and, if so, what portion and whether any portion of payment from the municipality or municipal entity is expected to be transferred out of the Republic.

Each party to a Consortium/Joint Venture shall submit separate certificates/statements in the above regard.

F.2.23 **Certificates**

Add the following:

The tenderer is required to submit the following:

The tenderer shall submit with his tender:

(1) either a **Certificate of Contractor Registration** issued by the Construction Industry Development Board or a copy of the application Form for registration in terms of the Construction Industry Development Board Act (Form F006);

(2) an original valid **Tax Clearance Certificate** issued by the South African Revenue Services or a pin issued by South African Revenue Services.

(3) Company / CC / Trust / Partnership registration certificates

(4) Joint Venture Agreement and Power of attorney in case of Joint Ventures

(5) ID certificates in case of one-man concerns

(6) Workmen's Compensation Registration Certificate (or proof of payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993)

(7) Unemployment Insurance Fund (UIF) Registration Certificate

Each party to a Consortium/Joint Venture shall submit separate certificates in the above regard.

F.3 The Employer's undertakings

F.3.2 **Issue Addenda**

Add the following to F.3.2:

Notwithstanding any requests for confirmation of receipt of Addenda issued, the tenderer shall be deemed to have received such addenda if the employer can show proof of transmission thereof (or a notice in respect thereof) via electronic mail, facsimile or registered post.

F3.4 **Opening of tender submissions**

Add the following to F.3.4.1:

F.3.4.1 The time and location for opening of the tender offers is:

Time: Tenders will be opened immediately after the closing time for receipt of tenders as stated in the Tender Notice and Invitation to Tender, or as stated in any Addendum extending the closing date.
Location: 4 Namakwa Street, SPRINGBOK, 8240

F.3.8 **Test for responsiveness**

Add the following:

Tenders will be considered non-responsive if, inter alia:
- the tender is not in compliance with the Scope of Work;
- the tenderer does not comply with the CIDB contractor grading designation specified in F.2.1.1.2 above;
- the tenderer has failed to clarify or submit any supporting documentation within the time for submission stated in the employers written request;

F.3.11 **Evaluation of tender offers**

The method for evaluation for this contract will be the following:

F.3.11.1 **Method 4: *Financial offer, quality and preferences***

The procedure for the evaluation of responsive tenders is Method 4 and is described in detail in the Preferential Procurement Specifications

Add the following new subclause:

F.3.11.10 **Risk Analysis**

Notwithstanding compliance with regard to CIDB registration or any other requirements of the tender, the employer will perform a risk analysis in respect of the following:
a) reasonableness of the financial offer
b) reasonableness of unit rates and prices
c) the tenderer's ability to fulfil its obligations in terms of the tender document, that is, that the tenderer can demonstrate that he/she possesses the necessary professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience, reputation, personnel to perform the contract, etc.

No tenderer will be recommended for an award unless the tenderer has demonstrated that he/she has the resources and skills required.

F3.13 **Acceptance of tender offer**

Add the following to F.3.13.1:

F.3.13.1 Tender offers will only be accepted if:
a) the tenderer is registered and in good standing with the South African Revenue Service (SARS) and has submitted evidence in the form of an **original** valid Tax Clearance Certificate issued by SARS or proof that he or she has made arrangements with SARS to meet his or her outstanding tax obligations;

b) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
c) the tenderer has not:
   i) abused the Employer's Supply Chain Management System; or
   ii) failed to perform on any previous contract and has been given a written notice to this effect;
d) the tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.

F.3.18 **Provide copies of the contract**

Add the following:

The number of paper copies of the signed contract to be provided by the Employer is: **1 (one)**.

F.4 Additional Conditions of Tender

The additional conditions of tender are:

F.4.1 **Compliance with Occupational Health and Safety Act 1993**

Tenderers are to note the requirements of the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations 2003 issued in terms of Section 43 of the Act. The tenderer shall be deemed to have read and fully understood the requirements of the above Act and Regulations and to have allowed for all costs in compliance therewith.

In this regard the Tenderer shall submit with his tender, appended to Schedule 11: Health and Safety Plan in T2.2: Returnable Schedules, a detailed Health and Safety Plan in respect of the Works in order to demonstrate the necessary competencies and resources to perform the construction work all in accordance with the Act and Regulations. Such Health and Safety Plan shall cover inter-alia the following details:

(1) Management Structure, Site Supervision and Responsible Persons including a succession plan.
(2) Contractor's induction training programme for employees, sub-contractors and visitors to the Site.
(3) Health and safety precautions and procedures to be adhered to in order to ensure compliance with the Act, Regulations and Safety Specifications.
(4) Regular monitoring procedures to be performed.
(5) Regular liaison, consultation and review meetings with all parties.
(6) Site security, welfare facilities and first aid.
(7) Site rules and fire and emergency procedures.

Tenderers are to note that the Contractor is required to ensure that all sub-contractors or others engaged in the performance of the contract also comply with the above requirements.

The Contractor shall prepare and maintain a Health and Safety File in respect of the project, which shall be available for inspection on Site at all times and handed over to the Employer on Final Completion of the project.

The Contractor is required to submit to the Employer the Occupational Health and Safety Agreement (included in C1.4 of the Contract Document) and a letter of good standing from the Compensation Commissioner, or a licensed compensation insurer, within 14 days after the Commencement Date of the contract.

F.4.2 **Claims arising after submission of tender**

No claim for any extras arising out of any doubt or obscurity as to the true intent and meaning of anything shown on the Contract Drawings or contained in the Conditions of Contract, Scope of Work and Pricing Data, will be admitted by the Employer/Employer's Agent after the submission of any tender and the Tenderer shall be deemed to have:

1) inspected the Contract Drawings and read and fully understood the Conditions of Contract.

2) read and fully understood the whole text of the Scope of Work and Pricing Data and thoroughly acquainted himself with the nature of the works proposed and generally of all matters which may influence the Contract.

3) visited the site of the proposed works, carefully examined existing conditions, the means of access to the site, the conditions under which the work is to be done, and acquainted himself with any limitations or restrictions that may be imposed by the Municipal or other Authorities in regard to access and transport of materials, plant and equipment to and from the site and made the necessary provisions for any additional costs involved thereby.

4) requested the Employer or his duly authorised agent to make clear the actual requirements of anything shown on the Contract Drawings or anything contained in the Scope of Work and Pricing Data, the exact meaning or interpretation of which is not clearly intelligible to the Tenderer.

   Before submission of any tender, the Tenderer should check the number of pages, and if any are found to be missing or duplicated, or the figures or writing indistinct, or if the Pricing Data contain any obvious errors, the tenderer must apply to the Employer/Employer's Agent at once to have the same rectified, as no liability will be admitted by the Employer/Employer's Agent in respect of errors in any tender due to the foregoing.

5) received any Addenda to the tender documents which have been issued in accordance with the Employer's Supply Chain Management Policy.

F.4.3 **Imbalance in tendered rates**

In the event of tendered rates or lump sums being declared by the Employer to be unacceptable to it because they are either excessively low or high or not in proper balance with other rates or lump sums, the Tenderer may be required to produce evidence and advance arguments in support of the tendered rates or lump sums objected to. If, after submission of such evidence and any further evidence requested, the Employer is still not satisfied with the tendered rates or lump sums objected to, it may request the tenderer to amend these rates and lump sums along the lines indicated by it.

The Tenderer will then have the option to alter and/or amend the rates and lump sums objected to and such other related amounts as are agreed on by the Employer, but this shall be done without altering the tender offer as tendered or, if applicable, the corrected total of prices in accordance with F.3.9.3.

Should the Tenderer fail to amend his Tender in a manner acceptable to the Employer, the Employer may reject the Tender.

F.4.4 **Invalid tenders**

Tenders shall be considered invalid and shall be endorsed and recorded as such in the tender opening record, by the responsible official who opened the tender, in the following circumstances:

a) if the tender offer (the tender price/amount) is not submitted on the Form of Offer and Acceptance bound into this tender document (form C1.1, Part C1: Agreements and Contract Data);
b) if the tender is not completed in non-erasable ink;
c) if the Form of Offer and Acceptance has not been signed;
d) if the Form of Offer and Acceptance is signed, but the name of the tenderer is not stated or is indecipherable.

F.4.5 **Negotiations with preferred tenderers**

The Employer may negotiate the final terms of a contract with tenderers identified through a competitive tendering process as preferred tenderer provided that such negotiation:

a) does not allow any preferred tenderer a second or unfair opportunity;
b) is not to the detriment of any other tenderer; and
c) does not lead to a higher price than the tender as submitted.

Minutes of any such negotiations shall be kept for record purposes.

F.4.6 **UIF payments**

The Tenderer shall submit to Council a letter from the Industrial Council indicating his good standing with regard to UIF payments upon being requested to do so.

F.4.7 Price variations

The Contract Price shall not be subject to any contract price adjustment, the rates and prices tendered in the bills of quantities shall be final and binding throughout the period of the contract. However, **price adjustments for variations in the costs of special materials may be applicable** where the Employer/Employer's Agent specifies such materials and the relevant information in the Contract Data.

Notwithstanding the above, if, as a result of any extension of time granted, the duration of the contract period exceeds one year, the contract will automatically be subject to contract price adjustment for that period by which the extended contract period exceeds such one year.

F.4.8 **Requests for contract documents, or parts thereof, in electronic format**

The Employer shall not formally issue tender documents in electronic format as contemplated in F.2.13.2 and F.2.13.3 and shall only issue tender documents in hardcopy. An electronic version of the issued tender documents may be made available to the tenderer, upon written request in terms of this clause, subject to the following:

(a) Electronic copies of the contract document, or parts thereof, will only be provided to tenderers who have been issued with the tender documents as contemplated in F.1.2 in hardcopy.
(b) The electronic version shall not be regarded as a substitute for the issued tender documents.
(c) The Employer shall not accept tenders submitted in electronic format. Tenderers may not complete and submit a printed copy of the electronic version of the tender document or part thereof. Only those tenders that have been completed on the issued hard copy tender document shall be considered.
(d) The Employer accepts no responsibility or liability arising from any reliance on or use of the electronic version provided in terms of this clause. The Employer further does not guarantee that the electronic version corresponds with the issued tender documents in all respects. Tenderers are alerted to the fact that electronic versions of the tender documents may not reflect any notices or addenda that amend the tender document.
(e) Any non-compliance with these provisions, including effecting any unauthorised alterations to the tender document as contemplated in F.2.11, shall render the tender invalid. The Employer reserves the right to take any action against such tenderer allowed in law including, in circumstances where the tender had already been awarded, the right to cancel the contract.
(f) In requesting the electronic version of the tender document or parts thereof, the tenderer is deemed to have read, understood and accepted all of the above conditions.

F.4.9 **Tenders forwarded by post**

No tenders will be accepted that was posted or faxed.

F.4.10 **Withdrawal of Tenders**

A Tenderer may withdraw his Tender (in writing) any time before the closing date and time for the submission of tenders if a notice to this effect reaches the Engineer before the closing date and time.

F.4.11 Acceptance or rejection of Tenders

A Tender can be rejected if it is conditional or incomplete or if the Form of Tender or Bill of Quantities contain any absurdities or if the prices in the Bill of Quantities are unbalanced and the Tenderer fail to amend it within twenty-four(24) hours after being notified about it.

The Employer does not bind itself to accept the tender with the highest preference points, the lowest or any tender and reserves the right to accept any tender or portion of a tender, as it deems expedient.

F.4.12 **Signing of the Contract**

The successful Tenderer has to sign the Form of Agreement within the period of seven (7) days after being notified that his Tender had been accepted.

In the event where the Tenderer fail to take up the Contract when called upon by the Employer to do so, or withdrawing his Tender after the closing date and time, or failing to provide an acceptable

guarantee, the Employer reserves the right to insist that the Tenderer shall pay to the Employer the cost incurred by the Employer in having to award the Tender to another Contractor.

F.4. 13 **Amendments of Arithmetical errors**

The Employer reserves the right to adjust arithmetical errors in the extension of rates and totals in the tender and the Tenderer will be informed of the effect of any corrections on his tender sum prior to the award of the Contract. In no case will tendered rates be adjusted when correcting such errors.

F.4. 14 **Refunding of Deposito's**

Deposito's are non-refundable

F.4. 15 **Disqualifications of tenders**

No tender offer will be considered from the following tenderers:

a) Persons who were convicted for fraud or corruption during the past five years.
b) Who wilfully neglected, reneged on or failed to comply with a goverment contract during the past five years.
c) Tenderer who cant submit a Tax Clearance Certificate.
d) Tenderer who is not registered or accredited as a supplier or a contractor.
e) Proof cant be provided that a performance quarantee can be submitted on the award of the contract.

F.4. 16 **Cessions of Rights and Demands**

Cession of Rights will not be considered and will therefore not be applicable to the execution of this contract.

F.4. 17 **Time for Completion of Works**

The period for the completion of works must be stated in the Contract Data of the Tender (in weeks) within which time the work must be completed.

F.4. 18 **Currency**

All prices, deposito's and payments shall be in the currency of the Republic of South Africa (Rand) and cheques for the deposito's have to be made out to **NAMA-KHOI MUNICIPALITY**.

Annex F
(normative)

Standard Conditions of Tender

F.1 General

F.1.1 Actions

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

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

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

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

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

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

a) **conflict of interest** means any situation in which:
   i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
   ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
   iii) 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. Communication 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 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.

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 comply with requirements.

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

Treat as confidential 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 meeting(s) are stated in the tender data.

F.2.8 Seek clarification

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

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.

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. The alternative tender offer is to be submitted with the main tender offer together with a schedule that compares the requirements of the tender documents with the alternative requirements the tenderer proposes.

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 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 shall 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".

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

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 the tender documents are available until three working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew 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.

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
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 either confirm the tender offer as tendered or accept the corrected total of prices.

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

a) If bills of quantities or pricing schedules apply and there is an error in the line-item total resulting from the product of the unit rate and the quantity, the line-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 a tender offer

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

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

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

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

F.3.11.3 Method 2: Financial offer and preference

In the case of a financial offer and preferences:

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

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

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

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

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

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

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

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

$T_{E\ V} = N_{FO} + N_P$

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

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

$N_{FO} = W_1 \times A$

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

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

Formula	Comparison aimed at achieving	Option 1[a]	Option 2[a]
1	Highest price or discount	$A = (1 + \frac{(P - Pm)}{Pm})$	$A = P/Pm$
2	Lowest price or percentage commission/ fee	$A = (1 - \frac{(P - Pm)}{Pm})$	$A = Pm/P$
[a] *Pm* 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.

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

F.3.11.9 Scoring quality

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

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

$N_Q = W_2 \times S_O / M_S$

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

The procedure for the evaluation of responsive tenders is Method 4 (Financial offer, quality and preference) The total number of tender evaluation points (T_{EV}) shall be determined in accordance with the following formula.

$T_{EV} = f_1 \ (N_{FO} + N_P) + f_2 N_Q$

T_{EV} = *Total number of tender evaluation points.*

where f_1 and f_2 are fractions, f_1 equals 1 minus f_2 and f_2 equals 0.25

N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with 5.11.7 in SANS 10845-3, 2015 where the score for financial offer is calculated using the following formula,

$N_{FO} = W_1 A$,

Where maximum point for $W_1 = 90$

A = [1 – {(P - Pm)/Pm}]

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with the Nama Khoi Preferential Procurement Policy, 2023 Schedule.

N_Q is the number of tender evaluation points awarded for quality offered in accordance with 5.11.9 in SANS 10845-3,2015, where maximum points for qualifications is 100.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

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

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

F.3.14 Prepare contract documents

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

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

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

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer’s acceptance of his tender offer by completing and returning one copy of the form of 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 other tenderers that their tender offers have not been accepted.

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

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

Annex G
(normative)

Alpha-numeric associated with the Contractor Grading Designations

Table G1: Contractor grading designations and associated parameters

Contractor Grading Designation	Tender Value Range designation	Maximum value of contract that a contractor is considered capable of performing (R)
2 (class of construction works)	2	1 000 000
3 (class of construction works)	3	3 000 000
4 (class of construction works)	4	6 000 000
5 (class of construction works)	5	10 000 000
6 (class of construction works)	6	20 000 000
7 (class of construction works)	7	60 000 000
8 (class of construction works)	8	200 000 000
9 (class of construction works)	9	No Limit

Table G2: Classes of construction work (see next page)

Table G2 **CLASSES OF CONSTRUCTION WORK**

Description	Designation	Definition	Works types	Examples
Civil engineering works	CE	Construction works that are primarily concerned with materials such as steel, concrete, earth and rock and their application in the development, extension, installation, maintenance, removal, renovation, alteration, or dismantling of building and engineering infrastructure	Water, sewerage, roads, railways, harbours and transport, urban development and municipal services	Structures such as a cooling tower, bridge, culvert, dam, grand stand, road, railway, reservoir, runway, swimming pool, silo or tunnel. The results of operations such as dredging, earthworks and geotechnical processes. Township services, water treatment and supply, sewerage works, sanitation, soil conservation works, irrigation works, storm-water and drainage works, coastal works, ports, harbours, airports and pipelines.
Electrical engineering works (Infrastructure)	EP	Construction works that are primarily concerned with development, extension, installation, removal, renovation, alteration or dismantling of engineering infrastructure: a) relating to the generation, transmission and distribution of electricity; or b) which cannot be classified as EB.	Electrical power generation, transmission, control and distribution equipment and systems.	Power generation Street and area lighting Substations and protection systems Township reticulations Transmission Lines Supervisory control and data acquisition systems
Electrical engineering works (buildings)	EB	Construction works that are primarily concerned with the installation, extension, modification or repair of electrical installations in or on any premises used for the transmission of electricity from a point of control to a point of consumption, including any article forming part of such an installation	All electrical equipment forming an integral and permanent part of buildings and/or structures, including any wiring, cable jointing and laying and electrical overhead line construction	Electrical installations in buildings Electrical reticulations within a plot of land (erf) or building site Standby plant and uninterrupted power supply Verification and certification of electrical installations on premises

Description	Designation	Definition	Works types	Examples
General building works	GB	Construction works that: a) are primarily concerned with the development, extension, installation, renewal, renovation, alteration, or dismantling of a permanent shelter for its occupants or contents; or b) cannot be categorised in terms of the definitions provided for civil engineering works, electrical engineering works, mechanical engineering works, or specialist works.	Buildings and ancillary works other than those categorised as being: a) civil engineering works; b) electrical engineering works; c) mechanical engineering works; or d) specialist works.	Buildings for domestic, industrial, institutional or commercial occupancies Car ports Fences other than classified as SS Stores Walls
Mechanical engineering works	ME	Construction works that are primarily concerned with the development, extension, installation, removal, alteration, renewal of engineering infrastructure for gas transmission and distribution, solid waste disposal, heating, ventilation and cooling, chemical works, metallurgical works, manufacturing, food processing and, materials handling	Machine systems including those relating to the environment of building interiors: a) gas transmission and distribution systems b) pipelines c) solid waste disposal d) materials handling, lifting machinery, heating, ventilation and cooling, pumps, e) continuous process systems f) chemical works, metallurgical works, manufacturing, food processing such as that in concentrator machinery and apparatus, oil and gas wells, smelters, cyanide plants, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substances or other chemical processes.	Air-conditioning and mechanical ventilation Boiler installations and steam distribution Central heating Centralised hot water generation Cranes and hoists Dust and sawdust extraction Compressed air, gas and vacuum installations Conveyor and materials handling installations Continuous process systems involving chemical works, metallurgical works, oil and gas wells, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substances and other chemical processes Kitchen equipment Laundry equipment Lift installations and escalators Refrigeration and cold rooms Waste handling systems (including compactors)

Description	Designation	Definition	Works types	Examples
Specialist works	SB	A subset of construction works identified and defined by the Board that involves specialist capabilities for its execution	The extension, installation, repair, maintenance or renewal, or removal, of asphalt	
	SC		The development, extension, installation, removal, and dismantling, as relevant, associated with building excavations, shaft sinking and lateral earth support	
	SD		The development, extension, installation, repair, renewal, removal, or alteration of corrosion protection systems (cathodic, anodic and electrolytic)	
	SE		Demolition of buildings and engineering infrastructure and blasting	
	SF		The development, extension, installation, renewal, removal, renovation, alteration or dismantling of fire prevention and protection infrastructure (drencher and sprinkler systems and fire installation)	
	SG		The development, extension, installation, renewal, removal, renovation, alteration or dismantling of glazing, curtain walls and shop fronts	
	SH		The development, extension, installation, maintenance, renewal, removal, alteration or dismantling, as relevant, of landscaping, irrigation and horticultural works	
	SI		The development, extension, installation, repair, maintenance, renewal, removal, renovation, alteration or, dismantling of lifts, escalators, travellators and hoisting machinery	
	SJ		The development, installation, removal, or dismantling, as relevant, of piles and other specialized foundations for buildings and structures	
	SK		The installation, renewal, removal, alteration or dismantling, as relevant, road markings and signage	
	SL		The development, extension, installation, renewal, removal, renovation, alteration or dismantling of structural steelwork and scaffolding	
	SM		Timber buildings and structures	
	SN		The extension, installation, repair, maintenance, renewal, removal, renovation or alteration, as relevant, of the waterproofing of basements, roofs and walls using specialist systems.	
	SO		The development, extension, installation, renewal, removal, alteration or dismantling or demolition of water installations and soil and waste water drainage associated with buildings (wet services, plumbing)	
	SQ		The development, extension, installation, repair, removal, alteration, dismantling or demolition of precast concrete or steel fencing	

Part T2: Returnable Documents

NAMA-KHOI MUNICIPALITY

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T2.1 List of Returnable Documents

The tenderer must complete the following Returnable Documents in **black ink**:

1. Returnable Schedules required for tender evaluation purposes

2. Other documents required for tender evaluation purposes

- Joint Venture Agreement (if applicable) - append to Schedule 3.
- An original valid **Tax Clearance Certificate** issued by the South African Revenue Services -append to Schedule 8.
- All addenda released by the Engineer - append to Schedule 13
- **CIDB Certificate** - append to Schedule 23
- **Letter from Financial Institution or Bank** - append to Schedule 24

3. Returnable Schedules that will be incorporated into the Contract

4. C1.1 The offer portion of the C1.1 Form of Offer and Acceptance

5. C1.2 Contract Data (Part 2)

6. C2.2 Bills/Schedules of Quantities

T2.2 Returnable Schedules

SCHEDULE 1 : 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: . . . . . .

Address 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, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- □ a member of any municipal council
- □ a member of any provincial legislature
- □ a member of the National Assembly or the National Council of Provinces
- □ a member of the board of Directors of any municipal entity
- □ an official of any municipality or municipal entity
- □ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- □ a member of an accounting authority of any national or provincial public entity
- □ an employee of Parliament or a provincial legislature

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

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

*insert separate page if necessary

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

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

- □ a member of any municipal council
- □ 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
- □ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- □ a member of 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 of state and position held	Status of service (tick appropriate column)	
		current	Within last 12 months

*insert separate page if necessary

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

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 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;
v) 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 ON BEHALF OF TENDERER: . . . . . .

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REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 2 : SITE VISIT/CLARIFICATION MEETING CERTIFICATE

This is to certify that I/we, _____

of (tenderer) _____

of (address) _____

_____

_____

telephone number _____

fax number _____

on (date) _____

have examined the Site of the Works and its surroundings for which I/we am/are submitting this Tender and have, so far as is practicable, familiarized myself/ourselves with all the information, risks, contingencies and other circumstances which may influence or affect my/our Tender.

SIGNED ON BEHALF OF TENDERER: . . . . . .

SIGNED ON BEHALF OF EMPLOYERS AGENT: . . . . . .

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SCHEDULE 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 authorize Mr/Ms ……. ……., authorised signatory of the company, close corporation or partnership ……. ……., 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 AUTORISED SIGNATORY
Lead partner		Signature…….. Name…… Designation……..
		Signature…….. Name…… Designation……..
		Signature…….. Name…… Designation……..
		Signature…….. Name…… Designation……..

Note :

A copy of the Joint Venture Agreement (Refer to F2.13.1 in Part T1.2) showing clearly the **percentage contribution of each partner** to the Joint Venture shall be appended to this schedule.

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SCHEDULE 4: SCHEDULE OF WORK EXPERIENCE

The tenderer shall insert in the spaces provided below a list of similar completed contracts awarded to him and those currently being undertaken. Provide contactable references of clients and contracts. **Failure to complete this Schedule may result in the Tender not being considered.**

COMPLETED CONTRACTS OF SIMILAR NATURE AND COMPLEXITY				
EMPLOYER (NAME, TEL No. AND FAX No.)	CONSULTING ENGINEER (NAME, TEL No. AND FAX No.)	NATURE OF WORK	VALUE OF WORK R(m)	DATE COMPLETED

CURRENT CONTRACTS OF SIMILAR VALUE				
EMPLOYER (NAME, TEL No. AND FAX No.)	CONSULTING ENGINEER (NAME, TEL No. AND FAX No.)	NATURE OF WORK	VALUE OF WORK R(m)	ANTICIPATED COMPLETION DATE

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . . . .

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SCHEDULE 5: SCHEDULE OF CONSTRUCTION EQUIPMENT

The tenderer shall state below what construction equipment will be available for this Contract. The tenderer shall differentiate, if applicable, between construction equipment immediately available and construction equipment which will become available by virtue of outstanding orders, and indicate what further construction equipment will be acquired or hired for the work should he be awarded the Contract. **In the case of hiring equipment, proof must be provided that the hiring company will make plant and equipment available to the tenderer should the contract be awarded to the tenderer. Failure to complete this Schedule may result in the Tender not being considered.**

CONSTRUCTION EQUIPMENT IMMEDIATELY AVAILABLE

DESCRIPTION, SIZE, CAPACITY	QTY	YEAR OF MANUFACTURE

CONSTRUCTION EQUIPMENT ON ORDER

(State details of arrangements made, with delivery dates)

DESCRIPTION, SIZE, CAPACITY	QTY	YEAR OF MANUFACTURE

CONSTRUCTION EQUIPMENT THAT WILL BE ACQUIRED OR HIRED

(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	QTY	YEAR OF MANUFACTURE

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . . . .

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SCHEDULE 6: PRELIMINARY PROGRAMME (FOR INFORMATION PURPOSES ONLY)

The tenderer shall detail below or attach a preliminary programme, to this schedule.

This programme shall be in the form of a bar chart (Gantt chart) or similar acceptable time/activity form reflecting the proposed sequence and tempo of the various activities and the quantities that will be carried out every week under each of the elements, comprising the work for this contract. The programme shall also indicate the point where the tenderer intends to commence work operations and the direction in which the work will proceed. The working hours shall be indicated.

The tenderer shall also take into account the additional requirements stated in the Project Specifications when drawing up the programme.

Details of the preliminary programme shall be appended to this Schedule.

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

PROGRAMME

ACTIVITY	WEEKS / MONTHS													

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

SIGNED ON BEHALF OF TENDERER: . . . . . .

SCHEDULE 7: SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

The tenderer shall state his estimated expenditure indicating the values of each monthly claim in terms of Clause 49 of the General Conditions of Contract, which he estimates will arise based on his preliminary programme and tendered rates, in the table below. The total of the monthly amounts shall be equal to the tender sum.

MONTH	VALUE
1.	R
2.	R
3.	R
4.	R
5.	R
6.	R
7.	R
8.	R
9.	R
SUBTOTAL	R
CONTINGENCIES (10%)	R
SUBTOTAL	R
VAT (15%)	R
TOTAL	R (INCLUDING VAT @ 15%)

SIGNED ON BEHALF OF TENDERER: . . . . . .

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SCHEDULE 8: TAX CLEARANCE CERTIFICATE OR PIN ISSUED BY SARS

A. TAX CLEARANCE CERTIFICATE OR ISSUED PIN FROM SARS

An **original** valid Tax Clearance Certificate from the South African Revenue Service (SARS) shall be attached to this Schedule or proof that the tenderer has made arrangements with SARS to meet his or her outstanding tax obligations. Alternatively, the pin issued by SARS must be provided.

Each party to a Consortium/Joint Venture shall submit a separate Tax Clearance Certificate, or proof that he or she has made the necessary arrangements with SARS.

SIGNED ON BEHALF OF TENDERER: . . . . . .

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SCHEDULE 9: SCHEDULE OF SUBCONTRACTORS

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

Acceptance of this tender shall not be construed as approval of all or any of the listed subcontractors. Should any of the subcontractors not be approved subsequent to acceptance of the tender, this shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding, even in the event of a subcontractor not listed below being approved by the Engineer.

Tenderers are to note that the subcontractors listed in this schedule **MUST** be utilized during the execution of the contract. Tenderers cannot use one subcontractor's price and execute the work with another subcontractor.

SUBCONTRACTORS				
Category /type (**CIDB GRADING)**	Subcontractor Name/Address/Contact Person/Phone/Fax/Details Of Organisation/Firm Experience	Items of work (pay items) to be undertaken by the Subcontractor	Estimated Cost of Work (Rand)	
			Material	Labour
		TOTAL (Excluding VAT)		

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . .

SCHEDULE 10: DETAILS OF CONTRACT MANAGER AND SITE AGENT'S EXPERIENCE

Tenderers shall set out in the Schedule hereunder details of the Site Agent and General Foreman's experience in work of a similar nature to that for which their Tender is submitted. **Provide Contactable references of clients**. **Failure to complete this Schedule may result in the Tender not being considered.**

CONTRACT MANAGER	**NAME**: ……**NQF LEVEL**……			
CONTRACT & CLIENT	**NATURE OF WORK**	**POSITION HELD**	**VALUE OF WORK**	**YEAR COMPLETED**

SITE AGENT	**NAME**: ……**NQF LEVEL**……			
CONTRACT & CLIENT	**NATURE OF WORK**	**POSITION HELD**	**VALUE OF WORK**	**YEAR COMPLETED**

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF THE TENDERER: …….

SCHEDULE 11: HEALTH AND SAFETY PLAN

Tenderers are to note the requirements of the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations 2003 issued in terms of Section 43 of the Act. The tenderer shall be deemed to have read and fully understood the requirements of the above Act and Regulations and to have allowed for all costs in compliance therewith.

In this regard the tenderer shall prepare and attach a Health and Safety Plan in respect of the Works in order to demonstrate the necessary competencies and resources to perform the construction work all in accordance with the Act and Regulations. Such Health and Safety Plan shall cover inter-alia the following details:

(1) Management Structure, Site Supervision and Responsible Persons including a succession plan.
(2) Contractor's induction training programme for employees, sub-contractors and visitors to the Site.
(3) Health and safety precautions and procedures to be adhered to in order to ensure compliance with the Act, Regulations and Safety Specifications.
(4) Regular monitoring procedures to be performed.
(5) Regular liaison, consultation and review meetings with all parties.
(6) Site security, welfare facilities and first aid.
(7) Site rules and fire and emergency procedures.

Tenderers are to note that the Contractor is required to ensure that all sub-contractors or others engaged in the performance of the contract also comply with the above requirements.

The tenderer shall also take into account the additional requirements stated in the Scope of Work when drawing up the Health and Safety Plan for the contract.

Details of the Health and Safety Plan shall be appended to this Schedule.

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . . . .

SCHEDULE 12: PROPOSED AMENDMENTS AND QUALIFICATIONS BY TENDERER

The Tenderer should record any **proposed** deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such proposed deviations and qualifications in a covering letter attached 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.

If no deviations or modifications are desired, the schedule hereunder is to be marked NIL and signed by the Tenderer.

PAGE	CLAUSE OR ITEM	PROPOSAL

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER: . . . . . .

SCHEDULE 13 : 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.		
9.		
10.		

Attach additional pages if more space is required.

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

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

Tenderer .....

SCHEDULE 14: DAYWORKS SCHEDULE

This daywork statement shall be used according to the opinion of the Engineer for the assessment of value of additional work which cannot be assessed easily according to the rates in the Bill of Quantities.

The rates for labour and material should not include overhead costs and profit, Site Supervision of personnel, insurance, payed vacation, the use and maintenance of small hand equipment and non-mechanical equipment, travel allowance, other payments and allowance. Provision is being made for this by including the percentages covering all this items with the item “Up costs”. The rate which should be used for the assessment of value of additional work is the basic rate plus the percentage “Up costs”.

The item “Up Cost” is left out in the case of equipment. The rate then has to include all of the above “Up Costs” mentioned as well as operator’s costs, user’s goods, maintenance, etc.

The Tender has to fill in all of the items listed underneath otherwise his Tender can be considered as incomplete.

A. LABOUR

1.	Workers .	..... per hour plus	..... % "Up-Cost"
2.	Supervisors	..... per hour plus	..... % "Up-Cost "
3.	Artisan.	..... per hour plus	..... % " Up-Cost "

B. EQUIPMENT

DESCRIPTION	RATE PER HOUR	
	In Work	Standing
Front End-Loader.....	.....	.....
Tipper Truck ...6 cubic meters	.....	.....
Compressor.....(capacity)	.....	.....
.....(Specify)	.....	.....
.....(Specify)	.....	.....
.....(Specify)	.....	.....

NOTE: The rate for an air pressure machine has to include rubber pipes and pneumatic equipment.

C. MATERIAL

Here, The Tenderer has to provide the Up Cost which ought to be added to the basic price: .....%

SIGNED ON BEHALF OF TENDERER: . . . . . .

SCHEDULE 15: MBD1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE NAMA KHOI MUNICIPALITY					
BID NUMBER:	**NC062/10/2024/2025**	CLOSING DATE:	29 November 2024	CLOSING TIME:	12:00
DESCRIPTION	**REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS**				
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 *(STREET ADDRESS*

4 Namakwa Street
Springbok
8240

SUPPLIER INFORMATION						
NAME OF BIDDER						
POSTAL ADDRESS						
STREET ADDRESS						
TELEPHONE NUMBER	CODE		NUMBER			
CELLPHONE NUMBER						
FACSIMILE NUMBER	CODE		NUMBER			
E-MAIL ADDRESS						
VAT REGISTRATION NUMBER						
TAX COMPLIANCE STATUS	TCS PIN:		**OR**	CSD No:		
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		☐ Yes ☐ No	
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]						
ARE YOU THE ACCREDITED REPRESENTATIVE **IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**		☐Yes ☐No [IF YES, ANSWER PART B:3]	
TOTAL NUMBER OF ITEMS OFFERED			**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		CONTACT PERSON	
CONTACT PERSON		TELEPHONE NUMBER	
TELEPHONE NUMBER		FACSIMILE NUMBER	
FACSIMILE NUMBER		E-MAIL ADDRESS	
E-MAIL ADDRESS			

PART B
TERMS AND CONDITIONS FOR BIDDING

1.	**BID SUBMISSION:**
1.1.	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2.	**ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE**
1.3.	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
2.	**TAX COMPLIANCE REQUIREMENTS**
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3	APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.
2.4	FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
2.5	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.6	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.7	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
3.	**QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS**
3.1	IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? **Yes** ☐ **No** ☐
3.2	DOES THE ENTITY HAVE A BRANCH IN THE RSA? **Yes** ☐ **No** ☐
3.3	DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? **Yes** ☐ **No** ☐
3.4	DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? **Yes** ☐ **No** ☐
3.5	IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? **Yes** ☐ **No** ☐
	IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

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

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……

DATE: ……...

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 16: DECLARATION OF INTEREST (FORM MBD 4)

1. No bid will be accepted from persons in the service of the state[1].

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

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

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

3.2. Identity Number:.....

3.3. Position occupied in the Company (director, trustee, shareholder[2]):.....

3.4. Company Registration Number:.....

3.5. Tax Reference Number:.....

3.6. VAT Registration Number:.....

3.7. The names of all directors/trustees/shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

3.8. Are you presently in the service of the state? **YES/NO**

3.8.1. If yes, furnish particulars

.....

.....

[1] MSCM Regulations: "in the service of the state" means to be-

(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the national assembly or the national council of provinces
(b) a member of the board of directors of any municipal entity
(c) an official of any municipality of 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 exercise control over the company.

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

3.9.1. If yes, furnish particulars

.....

.....

3.10. Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? **YES/NO**

3.10.1. If yes, furnish particulars

.....

.....

3.11. Are you aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES/NO**

3.11.1. If yes, furnish particulars

.....

.....

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

3.12.1. If yes, furnish particulars

.....

.....

3.13. Is any spouse, child or parent of the company's directors, trustees, managers, principle shareholders in service of the state? **YES/NO**

3.13.1. If yes, furnish particulars

.....

.....

3.14. Do you or any of the directors, trustees, managers, principal shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract? **YES/NO**

3.14.1. If yes, furnish particulars

.....

.....

4. Full details of directors / trustees / members / shareholders.

Full Name	Identity Number	State Employee Number

CERTIFICATION

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

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

…….. ……..
Signature Date

…….. ……..
Position Name of Bidder

SCHEDULE 17: MBD 5

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

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

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

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

    ……..

    ……..

2. Do you have 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 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, please provide particulars.

    ……..

    ……..

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

    3.1 If yes, furnish particulars

    ……..

    ……..

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

    4.1 If yes, furnish particulars

    ……..

    ……..

CERTIFICATION

I, THE UNDERSIGNED (NAME) …… **CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.**

…….	…….
Signature	Date
…….	…….
Position	Name of Bidder

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 18: MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT POLICY OF NAMA KHOI MUNICIPALITY

---

1. GENERAL CONDITIONS

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

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

1.2

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

1.3 Points for this bid shall be awarded for:

(a) Price;

(b) B-BBEE Status Level of Contributor and

(c) Specific Goals to Promote Economic Development (Locality)

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

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and Specific goals must not exceed	**100**

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor and proof of address (municipal account) together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution and specific goals to promote economic development (locality) are not claimed.

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

2. DEFINITIONS

(a) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;

(b) "**B-BBEE status level of contributor"** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

(c) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;

(d) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

(e) **"EME"** means an Exempted Micro Enterprise in terms of a code of good practice on black

economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;

(f) **"functionality"** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.

(g) **"prices"** includes all applicable taxes less all unconditional discounts;

(h) **"proof of B-BBEE status level of contributor"** means:

1) B-BBEE Status level certificate issued by an authorized body or person;

2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;

3) Any other requirement prescribed in terms of the B-BBEE Act;

(i) **"QSE"** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;

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

3. POINTS AWARDED FOR PRICE

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

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

80/20 **or** **90/10**

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

Where

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

Pmin = Price of lowest acceptable bid

4. POINTS AWARDED FOR SPECIFIC GOALS TO PROMOTE ECONOMIC DEVELOPMENT

4.1 In terms of the Preferential Procurement Policy of Nama Khoi Municipality, preference points must be awarded to a bidder for specific goals to promote economic development in accordance with the tables below:

Points for B-BBEE scorecard will be allocated as follows:

B-BBEE Status Level of Contributor	Number of points for Preference [80 / 20]	Number of points for Preference [90/10]
1	10	5
2	8	4
3	6	3
4	4	2
5	2	1
6	2	1
7	2	1
8	2	1
Non-compliant Contributor	0	0

Points for Locality will be allocated as follows:

Local area of supplier	Number of Points for Preference	
	80/20	90/10
Within the boundaries of the Nama Khoi Municipality	10	5
Within the boundaries of Namakwa District Municipality	6	3
Within the boundaries of the Northern Cape	4	2
Outside of the boundaries of the Northern Cape	0	0

5. BID DECLARATION

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

6. SPECIFIC GOALS POINTS CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

6.1 B-BBEE Status Level of Contributor: . = ……(maximum of 10 or 5 points)

6.2 LOCALITY = ……(maximum of 10 or 5 points)

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

7. SUB-CONTRACTING

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

(***Tick applicable box***)

YES		NO	

7.1.1 If yes, indicate:

i) What percentage of the contract will be subcontracted.....…….……%
ii) The name of the sub-contractor……..

iii) The B-BBEE status level of the sub-contractor.....……..
iv) Whether the sub-contractor is an EME or QSE
(Tick applicable box)

YES		NO	

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

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

8. **DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm:…….

8.2 VAT registration number:……..……

8.3 Company registration number:……..……..…….

8.4 TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

……
……
……
……..

8.6 COMPANY CLASSIFICATION

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

[*TICK APPLICABLE BOX*]

8.7 MUNICIPAL INFORMATION

Municipality where business is situated: ……

Registered Account Number: …….

Stand Number:…….

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

8.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

i) The information furnished is true and correct;

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

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;

iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

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

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

(e) forward the matter for criminal prosecution.

WITNESSES 1. …….. 2. …….	…… SIGNATURE(S) OF BIDDERS(S) DATE: …….. ADDRESS …….. …….. ……..

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 19: MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1. This Municipal Bidding Document must form part of all bids invited.

2. It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3. The bid of any bidder may be rejected if that bidder or any of its directors have:

   a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;

   b. been convicted for fraud or corruption during the past five years;

   c. wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or

   d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the *audi alteram partem* rule was applied).	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? (To access this Register enter the National Treasury's website, **www.treasury.gov.za**, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐

Item	Question	Yes	No
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality/ municipal entity or any other organ of state terminated during the past five years because of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.5.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (NAME) ……..……..……..……
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

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

…… ……

Signature Date

…….. ……

Position Name of Bidder

SCHEDULE 20: MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1. This municipal Bidding Document (MBD) must form part of all bids[1] invited.

2. Section 4 (1)(b)(iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerned 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 is 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 and proposals.
[2]Bid rigging (or collusive bidding) occurs when business, that would otherwise be expected to be complete, secretly conspire to raise prices or lower the quality of goods and/or services for purchase who wish to acquire goods and/or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid: _____

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of the Municipality/Municipal Entity)

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

I certify, on behalf of: _____ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

   a. has been requested to submit a bid in response to this bid invitation;
   b. could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
   c. provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently form, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[3] 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 the product or service will be rendered (market allocation)
   c. methods, factors or formulas used to calculate prices;
   d. the intention or decision to submit or not to submit, a bid;
   e. the submission of a bid which does not meet the specifications and conditions of the bid; or
   f. bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

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

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bid and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties 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 term of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

…… …….

Signature Date

…….…….. ……

Position Name of Bidder

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

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 21: SCM1

AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO NAMA-KHOI MUNICIPALITY

TO: THE MUNICIPAL MANAGER, NAMA-KHOI MUNICIPALITY

FROM: ……..
(Name of bidder or consortium)

MUNICIPAL ACCOUNT NUMBER: ……

AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL

Supply Chain Management Policy, Clause 21.d(ii)

The Municipal manager may reject the tender or quote of any juristic or natural person if that person or any of its directors/members has:

failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than 30 days or without acceptable arrangements in terms of Debt Control and Collection Policy.

Debt Control and Credit Collection by-law, **Provincial Gazette No. 756, Clause 5. (1)(2)**

Enterprises which municipal accounts are in arrears are disqualified from bidding for municipal quotes, bids and contracts.

Enterprises which bid for municipal quotes and bids should provide a certificate, signed by the CFO, which certifies that the prospective bidders have no outstanding municipal accounts or should alternatively sign a authorisation for the deduction of outstanding amounts owed to the council.

I, THE UNDERSIGNED, _____,
(FULL NAME IN BLOCK LETTERS)

hereby authorise RICHTERSVELD MUNICIPALITY to deduct the full amount outstanding by the business organization / Director / Partner, etc from any payment due to us / me.

For office use:

……..
Signature

THUS DONE AND SIGNED for and on behalf of the Bidder

at …… on the ……...day of …….. 20 ……

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 22: SCM2

DECLARATION ON STATE OF MUNICIPAL ACCOUNTS

The completion of this form is **COMPULSORY. Failure to complete this form might result that this tender will not be considered.**

A Any bid will be rejected if:
any municipal rates and taxes or municipal service charges owned by the bidder or any of the directors to the municipality, are in arrears without any current arrangements.

B Tenderer Information

i. Name of tenderer ……

ii. Registration number ……

iii. Municipality where business is situated ……

iv. Municipal account number for rates ……

v. Municipal account number for water and electricity ..……

vi. Names of all directors, their ID numbers and municipal account numbers.

1. ……..……..

2. ……..……..

3. ……..……..

4. ……..……..

5. ……..……..

6. ……..……..

C **Documents to be attached.**
i. A copy of the latest municipal account mentioned in B(iv) & (v)
ii. A copy of the latest municipal accounts of all directors or members mentioned in B(iv)
iii. Proof of directors/ or members & ID Documents.

I/We declare that the abovementioned information is true and correct and that the following documents are attached to this form:

…… ……

…… ……

_____ _____
SIGNATURE **DATE**

SCHEDULE 23: CONTRACTOR'S CERTIFICATE OF REGISTRATION WITH CIDB

Attached hereto is my / our Contractor's Certificate of Registration with CIDB. My failure to submit the certificate with my / our tender document will lead to the conclusion that I am / we are not registered with the CIDB and therefore not eligible to tender.

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTEWATER TREATMENT WORKS – CIVIL WORKS

SCHEDULE 24: FORM OF INTENT TO PROVIDE A PERFORMANCE GUARENTEE

[The Tenderer must attach hereto a letter from the bank or institution. with whom he has made the necessary arrangements, to the effect that the said bank or institution will be prepared to provide the required performance guarantee when asked to do so].

SCHEDULE 25: RESOURCE COMMITMENT SCHEDULE

Contracts and Construction Manager	**Name:……**		**Contact details:…….**
Available (Yes/No)	**Signature**	**Responsibility**	**Project Designation**

Site Foreman	**Name:…….**		**Contact details:…….**
Available (yes/No)	**Signature**	**Responsibility**	**Project Designation**

Site Agent	**Name:……**		**Contact details:……**
Available (yes/No)	**Signature**	**Responsibility**	**Project Designation**

Health and Safety	**Name:……**		**Contact details:……**
Available (yes/No)	**Signature**	**Responsibility**	**Project Designation**

SCHEDULE 26: FUNCTIONALITY SCORING SCHEDULE

1. Bidders that are valid and responsive in terms of bid conditions will be evaluated for functionality on the following criteria:

Evaluation Criteria & Sub Criteria		Available Points		Maximum Points to Score
1	**Experience of Service Provider / Company in relation to the scope of work as per Schedule 4: Schedule of Work Experience on page 35-36 of this document in the last five (5) years**			
	Experience in the construction of concrete structures			
1.1	Project that includes the construction of structural concrete structures with total concrete quantities of 100 cubic meters or more. Provide Three Project Reference letters OR Completion Certificates provided.	40		40
1.2	Project that includes the construction of structural concrete structures with total concrete quantities of 100 cubic meters or more. Two Project Reference letters OR Completion Certificates provided.	30		
1.3	Project that includes the construction of structural concrete structures with total concrete quantities of 100 cubic meters or more. One Project Reference letters OR Completion Certificates provided.	20		
1.4	None provided	0		
2	**Experience of Key Personnel as per Schedule 9: Details of Site Agents and General Foreman's experience on page 42 of this document (Submit CV, Certificates and references)**			25
2.1	**Site Agent**			
2.1.1	Site Agent: National Diploma/ or higher qualification in Civil Engineering	15	15	
2.2	**General Foreman/Supervisor**			
2.2.1	Between 5- and 10-years' Experience in Construction Supervision/ Management with Artisan Certificate (Concrete or Formwork)	10	10	
2.2.2	Between 2- and 5-years' Experience in Construction Supervision/ Management with Artisan Certificate (Concrete or Formwork)	5		
3	**Construction Method Statement and Project Program**			10
3.1	Construction Method Statement	5		
3.2	Project Program	5		
4	**Plant & Equipment as per Schedule 5: Schedule of Construction Equipment on page 37-38 of this document**			25
4.1	Excavator	15		
4.2	TLB	10		
4.3	Concrete poker/vibrator	5		
4.4	Concrete Mixer minimum 500 l capacity	5		

2. No bid will be regarded as a responsive and acceptable bid if it fails to achieve the minimum qualifying score for functionality of **70 out of a maximum of 100 points**.
3. Bidders must ensure that all the schedules and information is submitted with the bid to ensure optimal scoring for functionality. Additional information can be appended to the Schedules.
4. Bidders that have achieved the minimum score will be evaluated further in terms of the preference point system.

5. Schedule 4 on page 35-36 must be completed for previous works of similar nature completed by the tendered in the last five (5) years in order to qualify for points under the evaluation criteria 1.1 and 1.2. Bidders must provide proof of completed projects by submitting a reference letter OR Completion Certificate from the client or representative of the client that the work was completed successfully. The reference letter must contain the project detail required to qualify for points scoring such as the concrete quantities and sizes of structures. Contact information of the client or representative should be provided.
6. Schedule 9 on page 42 must be completed for key personnel to be employed on the project in order to qualify for points under the evaluation criteria 2.1 and 2.2. Bidders must provide the CV's including qualifications and certificates of the personnel. Aside from submitting a general CV for each key personnel, tenderers must submit a statement for each of the key personnel which highlights particular fields of specialization and experience that is relevant to this particular project.

7. The bidder must submit a Technical Proposal in the form of a Construction Method Statement in order to qualify for points under the evaluation criteria 3.1 in the above table. The method statement must contain a construction methodology and fully outline all main activities as per the scope of works and demonstrate how the works are going to be executed and what deliverables will be achieved.
8. A construction Program as per Schedule 6 on page 39 must be submit in order to qualify for points under the evaluation criteria 3.2 in the above table. The program must be in bar chart format and can be done on any software program. A realistic construction period of 6 months (24 working weeks) was calculated for the successful completion of the contract.
9. The bidder must demonstrate that construction equipment will be available for the execution of the contract by completing Schedule 5 on page 37-38. In the case of hiring equipment, proof must be provided that the hiring company will make plant and equipment available to the tenderer should the contract be awarded to the tenderer.

SIGNED ON BEHALF OF TENDERER: . . . . . .

Part C1: Agreements and Contract Data

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

PROJECT NO.35023.01/2024/01

REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

C1.1 Form of Offer and Acceptance (Agreement)

Offer

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

PROJECT NO.35023.01/2024/01: REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

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(s) ....

Name(s) ....

Capacity ....

for the tenderer

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

.....

.....

Name and signature of witness .....

Date .....

Acceptance *(TO BE COMPLETED AT ACCEPTANCE STAGE)*

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

The terms of the contract are contained in:

Part C1: Agreements and contract data (which includes this agreement)
Part C2: Pricing data
Part C3: Scope of work
Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

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

The tenderer shall within 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 securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to 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(s) ....

Name(s) ....

Capacity ....

for the Employer NAMA-KHOI MUNICIPALITY
PO BOX 17
SPRINGBOK
8240

Name and signature of witness ..... Date .....

Schedule of Deviations

Notes:

1. The extent of deviations from the tender documents issued by the employer before 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 .....

.....

.....

4 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 returnable 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.

For the Tenderer:

Signature(s) .....

Name(s) .....

Capacity .....

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

Name and signature of witness .....

Date .....

For the Employer:

Signature(s) .....

Name(s) .....

Capacity .....

(Name and Address of organization) NAMA-KHOI MUNICIPALITY
PO BOX 17
SPRINGBOK
8240

Name and signature of witness .....

Date .....

C1.2: CONTRACT DATA

The following standardized General Conditions of Contract:

C1.2.1 GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS

The General Conditions of Contract for Construction Works **(3rd Edition 2015)** prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Employer's Agenting (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer's Agent.

The Pro-forma's bound with the General Conditions of Contract 2015, on pages 96 to 116 shall not apply to this Contract and shall be replaced with the documentation bound into this Contract Document.

The General Conditions of Contract 2015 make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The Contract Data and General Conditions of Contract shall have precedence over the Drawings, Scope of Work and Standardised Specifications in the interpretation of any ambiguity or inconsistency between these documents.

C1.2.2 CONTRACT SPECIFIC DATA

The following contract specific data, referring to the **General Conditions of Contract 2015 3rd Edition,** are applicable to this Contract:

Clause 1.1.1.13:

The Defects Liability Period is **12 months** and will commence upon the issue of a certificate of practical completion.

Clause 1.1.1.15:

"**Employer**" means the **NAMA-KHOI MUNICIPALITY**. The Chairman acting in his capacity as executive officer as well as any officer to whom any powers vested in the Board have been delegated.

Clause 1.1.1.16:

The **Engineer**, referred to in the documents, is the firm of **BVi Consulting Engineers Northern Cape (Pty) Ltd** acting through a director, an associate or an official authorized thereto in writing.

The name of the Engineer is: **BVi Consulting Engineers Northern Cape (Pty) Ltd** or their successors duly appointed by the Employer.

Clause 1.1.1.26:

The Pricing Strategy is a Re-measurement Contract.

Add the following clauses after Clause 1.1.1.35:

Clause 1.1.1.35 "**Drawings**" means all drawings, calculations and technical information forming part of the Contract Documents and any modifications thereof or additions thereto from time to time approved in writing by the Engineer or delivered to the Contractor by the Engineer.

Add the following clauses after Clause 1.1.1.36:

Clause 1.1.1.36 "**Letter of Notification**" means the letters of formal notification, signed by the Employer, of the decision of the Supply Chain Management Bid Adjudication Committee sent to all tenderers. The notification of the decision does not form part of the Employer's Acceptance of the successful tenderer's Offer and no rights shall accrue.

Clause 1.2.1.2:

The address of the Employer is:	NAMA-KHOI MUNICIPALITY PO BOX 17 SPRINGBOK 8240 Tel.: 027 718 8100 Fax: 027 718 2661
Email Address:	Johannes.adams@namakhoi.gov.za
The address of the Engineer is:	17 A Keeromstreet SPRINGBOK 8420 Tel: (027) 712 9990 Fax: (027) 712 9991
Email Address:	winstonc@bvinam.co.za

Clause 3.2.3:

The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract:

1. Clause 3.2.1 Nomination of Engineer's Representative
2. Clause 3.2.4 Engineer's authority to delegate
3. Clause 5.8.1 Non-working times
4. Clause 5.11.1 Suspension of the Works
5. Clause 5.12.4 Acceleration instead of extension of time

Clause 4 : CONTRACTORS GENERAL OBLIGATION

Add the following before subclause 4.1.1:

"Contract Agreement"

The Contractor and the Employer shall enter into a Contract Agreement within 21 days after the Contractor receives the written notice of C1.1.2 Acceptance, unless they agree otherwise. The Contract Agreement shall be based upon the C1.1.4 Contract Agreement form included in the tender document. The costs of duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Employer."

Notwithstanding the above, the Contractor will not be permitted in terms of the conditions of contract identified in the Contract Data to enter into a Contract Agreement before:

(1) C1.1.3 Schedule of Deviations has been negotiated, agreed and signed off by the Contractor and the Employer;
(2) C1.3 Form of Guarantee has been completed by the Contractor and approved by the Employer;
(3) An original valid Tax Clearance Certificate (valid on date of signing the Agreement) has been submitted and approved;
(4) Insurances (as specified) with proof of validity have been provided by the Contractor and approved by the Employer;
(5) C1.4 Occupational Health and Safety Agreement has been completed and signed by both parties;
(6) Proof of payment in terms of Compensation for Occupational Injuries and Diseases Act, 1993 has been provided by the Contractor and approved by the Employer.

Clause 4.3:

Add the following clause after Clause 4.3.2.:

4.3.3 The Employer and the Contractor shall enter into an agreement to complete the work required for the construction of the works in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (Act 85 of 1993) and the Construction Regulations promulgated thereunder.

An agreement is included in the Contract Document (C1.4 of Contract Data) and shall be completed and submitted to the Employer together with a letter of good standing from the Compensation Commissioner (if not insured with a Licenced Compensation Insurer) within fourteen (14) days after the Commencement Date. The Contractor shall ensure that any letter of good standing shall be timeously renewed in order that it remains in full force for the duration of the Contract.

4.3.4 The Contractor shall provide proof to the Employer, within 14 days from the date of delivery of the Acceptance, that he has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993."

Clause 4.4.3

Add the following new sub clause:

4.4.3.1 "The procedure for Selected Subcontractors shall be:

All specialist merchants, tradesmen and others executing any work or supplying any goods for which provisional or prime cost sums are provided in the Bill / Schedule of Quantities and who are selected for this purpose by the Contractor as specified hereafter, shall in the execution of such work be subcontractors of the Contractor and are herein referred to as "Selected Subcontractors".

Unless another procedure is specified, Selected Subcontractors are chosen and appointed as follows. The Employer and the Contractor shall compile a list of firms or persons acceptable to both and who will

be invited to submit tenders for certain work or goods to be supplied by Selected Subcontractors. Before the closing date of such tenders the Contractor shall furnish the Employer with a sealed list in which is indicated the price increase required by the Contractor regarding the handling and appointment of every tenderer as Selected Subcontractor. No price increase requested by the Contractor in such list may be higher than the percentage or amount the Contractor has tendered in the main Contract against the provisional or prime cost item concerned. The list is then opened with the tenders and on the basis thereof the Employer shall indicate which tender he wishes to accept. The Contractor shall accept the tenderer and appoint him as Selected Subcontractor.
The Contractor shall incorporate in the subcontract provisions that:

a) In respect of the work or the goods that are the subject of the subcontract the Selected Subcontractor undertakes to the Contractor mutatis mutandis the obligations and liabilities as are imposed upon the Contractor to the Employer in terms of the Contract, and holds the Contractor harmless from and indemnifies him against the same and in respect of all claims demands, lawsuits, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities, and,

(b) The Selected Subcontractor holds the Contractor harmless and indemnifies him against:

(i) Shortcomings in the subcontract works if and where the works were designed by the Selected Subcontractor;
(ii) defects in the goods if and where the goods were manufactured and/or supplied by the Selected Subcontractor;
(iii) any negligence by the Selected Subcontractor, his agents, workmen and servants;
(iv) any misuse by the Selected Subcontractor of any Constructional Plant, Temporary Works or materials provided by the Contractor for the purposes of the Contract;
(v) any claims as aforesaid.

Clause 4.10.1

Add the following:

The Contractor shall make use of local labour as far as possible where manual labour is required and remuneration must be paid according to the minimum wages for the region.

Clause 4.10.3

Add the following clause after Clause 4.10.2:

The Contractor must provide adequate accommodation, offices and latrine facilities for his labour and employees and the Contractor shall bear all relevant associated costs for the duration of the contract. For the duration of the contract all latrines must comply to the relevant regulatory of local-, provincial and/or central government requirements and must be placed in such a manner that it will meet the Employer's Agents approval. If at any time during the contract the Contractor fails to meet these requirements, the Employer's Agent shall have the right to put in place all measures to rectify and/or provide adequate sanitary conditions, with all costs incurred hereto to be recovered from the Contractor.

Clause 4.12.4:

Add the following clause after Clause 4.12.3:

It is not the responsibility of the Employer's Agent or his delegated authority on site to act as Foreman or Surveyor of the works. The Contractor must employ qualified, experienced, trained and skilled Employer's Agents, Foreman, Surveyors, Laboratory Assistants and/or any other type of key personnel required with the necessary equipment and instrumentation to their disposal in order to ensure that adequate management, control, and/or execution of the works is obtained during the duration of the contact.

Clause 5.3.1:

The documentation required before commencement with Works execution is:

(1) Health and Safety Plan (Refer to Clause 4.3)
(2) Construction programme (Refer to Clause 5.6)
(3) Security (Refer to Clause 6.2)

(4) Insurance (Refer to Clause 8.6)
(5) Occupational Health and Safety Agreement (C1.4 of the Contract Document)
(6) Letter of Good Standing from the Compensation Commissioner (if not insured with a Licensed Compensation Insurer)
(7) Construction Guarantee to execute the works.

Clause 5.3.2:

The time to submit the documentation required before commencement with Works execution is 14 days.

Add the following clause after Clause 5.3.3:

5.3.4: The Contractor shall commence executing the works within 28 days from the Commencement Date.

The Commencement Date will be the day when all of the following takes place:

- Site Handover to the Contractor
- The Completion of the Form of Offer and Acceptance

The above will take place within 7 days of the issue of the Letter of Acceptance.

Clause 5.4.2:

Access to and possession of the site shall not be exclusive to the Contractor insofar as the provisions of Clause 4.8 apply, and where on-going use by the general public is required.

Add the following clause after Clause 5.4.3:

5.4.4 "The Contractor shall bear all costs and charges for special and temporary rights of way required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works."

Clause 5.6.1:

The Contractor shall deliver a detailed programme of work to the Engineer within 14 days from the Commencement Date. The Contractor must indicate and make provision in his program for the accommodation of the works that will be carried out by the Sub-Contractors. The Employer or the Employer's agent will not be liable in any way for deviations from the program, or as a result of target dates not met on the critical path by the Contractor or the Sub-Contractors and it remains the full responsibility of the Contractor to manage the works according to his program.

Clause 5.8.1:

Non-working days are Sundays.

Special non-working days are all gazetted public holidays falling outside the year end break.

Add the following clause after 5.8.2:

5.8.3 The year end break commences on 16 December and ends on the second Sunday in January the next year.

Clause 5.9:

Add the following:

5.9.8: "Three paper prints of each Drawing will be furnished free of charge to the Contractor. Additional prints of the same Drawings will be for the Contractors account".

5.9.9: "Only dimensions shown on the Drawings may be used for the construction of the Works and no dimension may be scaled without the written instruction of the Engineer. All dimensions shown on the drawings must be checked by the Contractor on Site before any part of the Works is commenced with".

Clause 5.12.2.2:

No extension of time will be granted in respect of any delays attributed to normal climatic conditions. Normal Climatic Conditions shall be deemed to include normal rainfall and associated wet conditions and materials, strong winds and extremes of temperature. However in the event that delays to critical activities exceed the number of working days listed below for each month, then abnormal conditions shall be deemed to exist, and an extension of time shall be granted in accordance with the provisions of Clause 5.12.

The number of **working days** quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work.

January	0 days
February	1 day
March	1 day
April	1 day
May	2 days
June	3 days
July	2 days
August	1 day
September	0 days
October	0 days
November	0 days
December	0 days

Clause 5.13.1:

The penalty for failing to complete the Works is **R4 500 per calendar day**.

Clause 5.16.3

The latent defect period is **10 years.**

Clause 6.2.1:

The security to be provided by the Contractor shall be a **performance guarantee of 10% of the Contract Sum** and must be delivered to the Engineer within **14 days** after receipt of the Commencement Date. The performance guarantee shall contain the wording of the document included in **C1.3 Form of Guarantee.**

Clause 6.2.3:

Delete Clause 6.2.3 in its entirety and replace with the following:

The Contractor shall ensure that the performance guarantee remains valid and enforceable until the Certificate of Completion of the Works is issued.

Clause 6.3:

Add the following after Clause 6.3.3:

6.3.4.1: If the scope of the work increased or decreased by a percentage in excess of 25% the tendered amounts in Section 1200AH items 1.2 will be adjusted pro-rata. No changes to the above items will be considered in case of an increase or decrease of less than 25% variation in the contract amount.

6.4.3.2: All rates will be fixed as tendered irrespective of the percentage variation.

Subclause 6.6.1 : Provisional sums

In the second line of subclause 6.6..1.2, after the words "sum or sums" *insert the words* ", excluding VAT,".
In the first line of subclause 6.6.1.2.1, after the words "sum or sums" *insert the words* ", excluding VAT,".
In the fourth line of subclause 6.6.1.2.2, after the words "amount" *insert the words* ", excluding VAT,".

Subclause 6.6.2 : Prime cost sums

In the fourth line of subclause 6.6.2, after the words "price" *insert the words* ", excluding VAT,".

Clause 6.8.2:

The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

x = N/A
a = N/A
b = N/A
c = N/A
d = N/A

The Consumer Price Index "L" to be used shall be the index for the Northern Cape's "other urban areas" as published in the Statistical News Release, P0141.1, Table 21.

The base month for the purposes of calculating Contract Price Adjustment (CPA) shall be **NOT APPLICABLE**.

NOTE: The contract price adjustment factor **SHALL BE NOT APPLICABLE**.

Clause 6.8.3:

Price adjustments for variations in the costs of special materials are not allowed.

Clause 6.8.4:

Add the following to Clause 6.8.4:

Notwithstanding the above, in the event that a public holiday is proclaimed after 28 days before the closing date for tenders, no costs other than those that can be claimed under Clause 5.12.3 shall be added to the contract price.

Clause 6.10.1.5:

The percentage advance on materials not yet built into the Permanent Works is **80%**, upon proof of ownership.

Subclause 6.10.2:

Add the following:

"Payment to the Contractor for any materials on site shall only be authorized after proof of ownership by the Contractor has been lodged with the Engineer in the form of receipted invoices or other acceptable documents."

Clause 6.10.3:

Add the following to Clause 6.10.3:

Notwithstanding the provision of a performance guarantee in terms of Clause 6.2.1, interim payments to the Contractors shall be subject to retention by the Employer of an amount of **10%** of the said amounts due to the Contractor, with no limit. The limit of retention money for the defects Liability Period shall be 5% of the Contract Price, including payment for contingencies and Contract Price Adjustment. A guarantee in lieu of retention is not permitted.

The limit of retention money is 10% of the Contract Price, including allowances for contingencies and Contract Price Adjustment.

The limit of retention money for the Defects Liability Period shall be 5% of the Contract Price.

Clause 6.10.4:

Add the following to clause 6.10.4:

Notwithstanding the above, the Engineer shall be empowered to withhold the delivery of the payment certificate until the Contractor has complied with his obligations to report in terms of Clause 4.10.2 and as described in the Scope of Work.

Clause 6.10.5.1:

In the sixth line, delete the words ".. Of the second half .."

Clause 6.10.10: Tax Invoices

Section 20(1) of the Value Added Tax Act of 1991 (Act 89 of 1991) requires that a supplier (person supplying goods or services) who is registered as a VAT vendor issue to the recipient a tax invoice within 21 days of the date of a supply whether requested or not.

The Contractor shall provide a tax invoice (VAT invoice) which shall be included with each payment certificate delivered to the Employer by the Engineer in terms of Clauses 49.1 and 49.10. Failure by the Contractor to provide a tax invoice (VAT invoice) timeously may delay payment by the Employer and no interest shall accrue.

Clause 6.11:

Amend the percentage from 15 percent to 25 percent in the title and in the Clause.

Clause 8.3.1.6

Clause deleted in its entirety.

Clause 8.3.1.7

Clause deleted in its entirety.

Clause 8.6.1:

Clause 8.6.1.1.2:

The value of Plant and materials supplied by the Employer to be included in the insurance sum is **R 0.00 (Nil)**.

Clause 8.6.1.1.3:

The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is R 450 000.00.

The limit of indemnity for liability insurance **is R 5 000 000.00 for any single claim** – the number of claims to be unlimited during the construction and defects liability periods.

Clause 8.6.1.5:

In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:

(a) Insurance of Construction Equipment (including tools, offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the site for a sum sufficient to provide for their replacement.

(b) Insurance in terms of the provisions of the Compensation for Occupational injuries and Diseases Act No. 130 of 1993.

(c) Motor Vehicle Liability Insurance comprising (as a minimum) “Balance of Third Party” Risks including Passenger Liability Indemnity.

(d) Where the contract involves manufacturing and/or fabrication of the works or part thereof at premises other than the Site, the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such works during manufacture or fabrication then such interest shall be noted by endorsement to the Contractor’s Policies of Insurance.

Clause 9.2.1:

Add the following to Clauses after Clause 9.2.1.3.7:

9.2.1.3.8 The Contractor committed a corrupt or fraudulent act during the procurement process or the execution of the contract.

9.2.1.3.9 An official or other role player committed any corrupt or fraudulent act during the procurement process or in the execution of the contract that benefited the Contractor.

9.2.1.3.10 "The Contractor fails to provide the required Guarantee and insurances within the prescribed time."

Clause 10.5.:

Dispute resolution shall be by Adjudication, Arbitration and Litigation.

Clause 10.8.1:

Clause deleted in its entirety.

Add the following after Clause10:

Clause 11: Contractor to provide everything necessary

The Contractor is to provide all labour, material, workmanship, machinery, and everything which is or may be necessary in and for the execution and entire completion of the Contract in accordance with the Conditions of Contract, Drawings and Scope of Work.

Clause 12: Details to be confidential

The Contractor shall treat the details of the Works comprised in this Contract as private and confidential (save in so far as may be necessary for the purposes hereof) and shall not publish or disclose the same or any particulars thereof in any trade or technical paper elsewhere without the prior written consent of the Engineer.

C1.2.3 CONTRACT ADDITIONAL DATA (Additional Conditions of Contract)

C1.2.3.1 Contract Participation goals

The following contract additional data, referring to the **Clients Procurement Policies** are applicable to this Contract and it is a requirement of this contract that the Main Contractor (be a Joint Venture agreement or a consortium or a single organization) must comply with the following minimum contract participation goals:

C1.2.3.1.1 Employment of Temporary Labour Force

Employ ALL unskilled and semi-skilled temporary workforce required for the contract from the **community of Nababeep.**

C1.2.3.1.2 Termination of Contract

If the contract is terminated by the employer on the basis of non-performance by the contractor or in the case that the contractor cannot fulfil his duties in the contract, the employer will ensure that the contractor is put on the list of suppliers who is blacklisted to do business with the government of the Republic of South Africa.

C1.2.4 SUMMARY OF CONTRACT SPECIFIC DATA

Reference to	Clause	Information
Contractor	1.1.1.9	
Employer	1.1.1.15	Nama Khoi Municipality
	1.2.1.2	NAMA-KHOI MUNICIPALITY PO BOX 17 SPRINGBOK 8240 Tel.: 027 718 8100 Fax: 027 718 2661
Engineer	1.1.1.16	BVi Consulting Engineers 17 A Keeromstr SPRINGBOK,8420 Tel. No: 027 712 9990 Fax No: 027 712 9990
Contract Guarantee	6.2.1	Within **14 days** of the Commencement Date
Guarantee Sum	6.2.1	**10%** of the total tender award sum
Commencement of Works	5.3.2	Within **14 days** of Commencement Date
Programme of Works	5.6.1	Within **14 days** of Commencement Date
Insurances	8.6.1.1.2	R0-00
	8.6.1.1.3	**R 450 000-00**
Limit of indemnity	8.6.1.1.3	**R 5 000 000-00** per claim, claims unlimited during construction and defects liability periods
Other Insurances	8.6.1.5	To be included in Contractors All-Risk Insurance
Daywork percentages	6.5.1	Refer to Schedule 14 of Part T2 Returnable Documents
Special non-working days	5.8.1	Sundays and all public holidays as well as year-end breaks.
Penalty for Delay	5.13	The penalty for failing to complete the Works within the Tendered Contract Period is **R 4 500-00 per calendar day**.
Contract Price Adjustment a = N/A b = N/A c = N/A d = N/A	6.8.2	The following values for the different factors are to be used: x = N/A a = Labour b = Contractor's Equipment c = Material d = Fuel **CPA – NOT APPLICABLE**
Special Materials	6.8.3	are **NOT** allowed
Minimum amount of interim payment certificate	6.10.1	Cashflow must correlate with specified Contract Period
Materials on Site	6.10.1.5	**80%**
Retention Money	6.10.3	The percentage retention on the amounts due to the contractor is **10%** of Contract Price, with no limit
Defects Liability Period	1.1.1.13	**12 Months** from the issuing of Certificate of Completion
Dispute Resolution	10.5, 10.7 & 10.8	Adjudication, Arbitration and Court Proceedings will be acceptable dispute resolution mechanisms, provided that Adjudication or in the absence thereof Arbitration as alternative dispute resolution mechanism must first be exhausted before Court Proceedings can be pursued. Each party shall bear their own costs for the purposes of either Adjudication or Arbitration proceedings and all fees and disbursement due to the Adjudicator/s or Arbitrator/s shall be shared equally by the parties.
Temporary Workforce Employment	C1.2.3.1.1	**To be employed from Nababeep community**

SIGNED ON BEHALF OF TENDERER: ……

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C1.3 Form of Guarantee

Contract No . . . . . .

WHEREAS **NAMA-KHOI MUNICIPALITY**
(hereinafter referred to as the Employer") entered into, a Contract with: . . . . . .

. . . . . .

(hereinafter called "the Contractor") on the . . . . . day of . . . . . 20. . . . . .,

for . . . . . .

. . . . . .

at . . . . . .(*indicate site location).*

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

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

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

1. The Employer shall, without reference and/or notice to us, have complete liberty of action to act in any manner authorized and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the completion date of the works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alterations of the completion date which the Employer may make, give, concede or agree to under the said Contract.

2. This guarantee shall be limited to the payment of a sum of money.

3. The Employer shall be entitled, without reference to us, to release any guarantee held by it, and to give time to or compound or make any other arrangement with the Contractor.

4. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.

5. Our total liability hereunder shall not exceed the Guaranteed Sum of Rand. . . . . .

   . . . . . (in words); R . . . . . (in figures).

6. The Guarantor reserves the right to withdraw from this guarantee by depositing the Guaranteed Sum with the beneficiary, whereupon our liability hereunder shall cease.

7. We hereby choose our address for the serving of all notices for all purposes arising here from as

. . . . . .

. . . . . .

. . . . . .

. . . . . .

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

Signature . . . . . .

Duly authorized to sign on behalf of . . . . . .

Address . . . . . .

. . . . . .

. . . . . .

As witnesses:

1 . . . . . .

2 . . . . . .

Guarantor's seal or stamp

ANNEXURE

LIST OF APPROVED FINANCIAL INSTITUTIONS

The following financial institutions are approved for issue of contract guarantees:

National Banks:

ABSA Bank Ltd.
Development Bank of Southern Africa
FirstRand Bank Ltd.
Gensec Bank Ltd.
Imperial Bank Ltd.
Infrastructure Finance Corporation
Investec Bank Ltd.
Land & Agricultural Bank of SA
Mercantile Bank Ltd.
Nedbank Ltd.
Standard Bank of SA Ltd.
SA Bank of Athens

International Banks (with branches in SA):

ABN AMRO Bank n.v.
Barclays Bank plc.
Citibank n.a.
Commerzbank Aktiengesellschaft
Credit Agricole-Indosuez
Deutsche Bank AG
JP Morgan Chase Bank
Societe Generale
Standard Chartered Bank

Insurance companies:

ABSA Insurance
AIG South Africa
Auto & General
Coface s.a.
Compass Insurance Co.
Constantia Insurance Co.
Credit Guarantee Insurance Co.
Emerald Insurance Co.
Federated Employers Mutual Assurance Co.
Guardrisk Insurance Co.
Home Loan Guarantee Co.
Lion of Africa Insurance Co.
Lombard Insurance
MUA Insurance
Mutual & Federal Insurance Co.
New National Assurance Co.
Regent Insurance Co.
Zurich Insurance Co.

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C1.4 Occupational Health and Safety Agreement

AGREEMENT MADE AND ENTERED INTO BETWEEN NAMA-KHOI MUNICIPALITY (HEREINAFTER CALLED THE "EMPLOYER") AND

……..……..……..……,
(Contractor/Mandatary/Company/CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, ACT No. 85 OF 1993 AS AMENDED.

I, ……..……..……, representing ……..……..…… , as an employer in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.

I furthermore confirm that I am/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/We are insured with an approved licensed compensation insurer.

COID ACT Registration Number: ……..

OR Compensation Insurer: ..... Policy No.: .....

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the appended Occupational Health and Safety Conditions and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan.

Signed at .....on the.....day of.....20….

_____ _____
Witness **Mandatary**

Signed at ..... on the.....day of.....20 ....

_____ _____
Witness **for and on behalf of**
NAMA-KHOI MUNICIPALITY

OCCUPATIONAL HEALTH AND SAFETY CONDITIONS

1. The Chief Executive Officer of the Contractor shall assume the responsibility in terms of Section 16(1) of the Occupational Health and Safety Act (as amended). Should the Contractor assign any duty in terms of Section 16(2), a copy of such assignment shall immediately be provided to the representative of the Employer as defined in the Contract.

2. All work performed on the Employer's premises shall be performed under the supervision of the construction supervisor who understand the hazards associated with any work that the Contractor performs on the site in terms of Construction Regulations 2003.

3. The Contractor shall appoint a Competent Person who shall be trained on any occupational health and safety aspect pertaining to them or to the work that is to be performed.

4. The Contractor shall ensure that he familiarises himself with the requirements of the Occupational Health and Safety Act and that he, his employees, and any sub-contractors, comply with them.

5. Discipline in the interests of occupational health and safety shall be strictly enforced.

6. Personal protective equipment shall be issued by the Contractor as required and shall be worn at all times where necessary.

7. Written safe work procedures and appropriate precautionary measures shall be available and enforced, and all employees shall be made conversant with the contents of these practices.

8. No substandard equipment/machinery/articles or substances shall be used on the site.

9. All incidents referred to in terms of Section 24 of the Occupational Health and Safety Act shall be reported by the Contractor to the Department of Labour and the Employer.

10 The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Occupational Health and Safety Act and into any incident involving a Contractor and/or his employees and/or his sub-contractor/s.

11. No use shall be made of any of the Employer's machinery/plant/equipment/substance/personal protective equipment or any other article without prior arrangement and written approval.

12. No alcohol or any other intoxicating substance shall be allowed on the site. Any person suspected of being under the influence of alcohol or any other intoxicating substance shall not be permitted access to, or allowed to remain on the site.

13. Prior to commencement of any work, verified copies of all documents mentioned in the agreement, must be presented to the Employer.

Part C2: Pricing Data

C2.1 Pricing Assumptions

Pricing Assumptions mean the criteria as set out `below, read together with all Parts of this contract document, which it will be assumed in the contract, that the tenderer has taken into account when developing his prices.

1. This Bill of Quantities has to be read together with the Articles of the Agreement, the Conditions of Contract and Special Conditions of Contract, the Form of Tender, the General Specification, the Project Specification and the Drawings.

2. The method of measurement published by the South African Bureau of Standards in clause 8 of the Standardised Specifications for Civil Engineering Construction is applicable, subject to the variations and amendments contained in the section “Applicable SANS 1200 standardised specifications”.

3. General instruction and description of the Work or materials given in the Specification will not be repeated in the Bill of Quantities. It will only be referred to. Doorbell of reference between brackets, to particular Clause in the Conditions of Contract(C-22) or, Special Conditions of Contract(SC-11), General Specification(19.1.3), Project Specification(PS 11) or to a Drawing (Drawing 33650.01-141-01).

4. The clauses in a specification in which further information regarding the schedule item appears under "Reference clause" in the Schedule. The reference clauses indicated are not necessarily the only sources of information in respect of scheduled items. Further information and specifications may be found elsewhere in the contract documents. Standardised Specifications are identified by the letter or letters which follow SANS in the SANS 1200 series of specifications, eg. G for SANS 1200 G.

5. The quantities set out in the Bills of Quantities are the estimated quantities of the Contract Works, but the Contractor will be required to undertake whatever quantities may be directed by the Engineer from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.

6. The prices and unit prices given in the Bill of Quantities, are all-embracing prices and it should cover the values of the different items completely and has to include all costs and expenses which may occur and for the building of the Work as described and costs and expenses that are required as well as all general liabilities, obligations and risks which forms a part of this contract. The prices should be given separate in the item(s) if special accountability, responsibilities and risks as in the above occurs.

7. A price or unit price has to be filled in against every item in the Bill of Quantities even if the amount isn’t shown. Items where no price or unit price has been filled in, will be regarded as covered by the other prices and unit prices in the Bill of Quantities. VAT must no be included in the tariff’s.

8. Unit rates would be regarded as correctly if any difference occurs between unit prices and the total and the total will be corrected according to. The unit prices will be calculated arithmetical in case of omissions.

9. Payments will only be made for items occurring in the Bill of Quantities and if the Contractor thinks that provision hasn’t been made for some items, the item should be allowed under another item.

10. Except where rates only are required, insert all amounts to be included in the total tendered price in the "Amount" column and show the corresponding total tendered price.

11. The units of measurement described in the Bills of Quantities are metric units. Abbreviations which may be used in these Bills of Quantities are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1000 kg)
m2	=	square metre	No.	=	number
m2.pass	=	square metre-pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewton
m3	=	cubic metre	MN.m	=	meganewton-metre
m3.km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	kW	=	kilowatt
Ml	=	megalitre	%	=	per cent
MPa	=	megapascal			

The Employer has the right whereas any measurements and/or payments were made before the final Payment Certificate to inspect it and if it is incorrect to correct it. The Employers has the right to remove and correct any work not complying with the specification before the submission of the last Payment Certificate.

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C2.2 Bills of Quantities

NAMA-KHOI MUNICIPALITY

BID/NC062/10/2024/2025

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REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS

SUMMARY		**Page No.**		**Amount**	
				R	**c**
1	PRELIMINARY AND GENERAL	97-98			
2	CONSTRUCTION OF SCREW PUMPSTATION	99-100			
3	CONSTRUCTION OF INLET WORKS	101-103			
4	OLD RAW SEWERAGE PUMPSTATION BUILDING	104-107			
5	REFURNBISHMENT OF CLARIGESTORS	108-110			
6	REFURBISHMENT OF BIOLOGICAL FILTERS	111			
7	REFURBISHMENT OF CLARIFIERS	112-113			
8	REFURBISHMENT OF FLOCCULATION TANK AND PIPEWORK	114-115			
9	REFURBISHMENT OF OLD FINAL EFFLUENT PUMPSTATION (CIVIL WORKS)	116-117			
10	REFURBISHMENT OF DETENTION TANKS	118			
11	CHLORINE CONATCT TANK	119			
	SUB-TOTAL	R			
*** CONTINGENCIES**					
Allow the sum of 10% (ten percent) of the above Sub-total for Contingencies to be spent as the Engineer may direct and to be deducted in whole or in part if not required.			R		
	TOTAL INCLUDING CONTINGENCIES		R		
VALUE ADDED TAX					
	ADD: VAT at the rate of 15%		R		
TOTAL Carried to part C1.1 Form of Offer and Acceptance			R		

CONTRACT PERIOD :……WEEKS

*** Amount allowed for the use of the Engineer only.**

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
1.		**SECTION 1: PRELIMINARY AND GENERAL**					
1.1	**8.3**	**FIXED-CHARGE ITEMS**					
1.1.1	8.3.1	Contractual Requirements	Sum	1.0			
	8.3.3	Establish Facilities on the Site :					
	8.3.3.1	Site Facilities for Engineer (SABS 1200 AB)					
1.1.2		a) Site Facilities for Engineer (SABS 1300 AB)	Sum	1.0			
1.1.3		b) SAACE Name Boards	No.	2.0			
1.1.4		c) Accommodation of Clerk of Works	Sum	1.0			
1.2	**8.3.3.3**	**Facilities for Contractor**					
1.2.1		Fenced Camp-sites as needed	Sum	1.0			
1.2.2		Living accommodation	Sum	1.0			
1.2.3		Ablution and latrine facilities (camp site)	Sum	1.0			
1.2.4		Ablution and latrine facilities (on site)	Sum	1.0			
1.2.5		Tools and equipment	Sum	1.0			
1.2.6		Water supplies, electric power (where needed) and communications on site	Sum	1.0			
1.2.7		Access (Subclause 5.8)	Sum	1.0			
1.3	**8.3.3**	**Other fixed-charge obligations**	Sum	1.0			
1.3.1	8.3.4	Remove Engineer's and Contractor's Site establishment on completion	Sum	1.0			
1.4	**8.4**	**TIME-RELATED ITEMS**					
1.4.1	8.4.1	Contractual Requirements	Sum	1.0			
1.4.2	8.4.3	Operate and maintain facilities on the Site:					
1.4.3	8.4.3.1	Facilities for Engineer for duration of construction(SABS 1300 AB)					
1.4.3.1		Survey assistants and material	Sum	1.0			
1.5	8.4.3.3	Facilities for Contractor for duration of construction, except where otherwise stated					
1.5.1		Fenced Camp-sites as needed.	Sum	1.0			
1.5.2		Living accommodation	Sum	1.0			
1.5.3		Ablution and latrine facilities (all as required)	Sum	1.0			
1.5.4		Tools and equipment	Sum	1.0			
Total Carried Forward						0	00

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
1.5.5		Water supplies, electric power (where needed) and communications on site	Sum	1.0			
1.5.6		Access (Subclause 5.8)	Sum	1.0			
1.5.7	8.4.3	Supervision for Duration of Construction	Sum	1.0			
1.5.8	8.4.4	Company and head office overhead costs for the duration of the Contract	Sum	1.0			
1.5.9	8.4.5	Other time-related obligations	Sum	1.0			
1.2	**8.8**	**TEMPORARY WORKS**					
1.2.1	8.8.1	Provision of pumping equipment and sludge removal equipment for the duration of the works as needed	Sum	1.0			
1.2.2		**MISCELLANEOUS ITEMS:**					
1.2.2.1	8.8.3	Protection and Maintenance of existing plant fencing	Sum	1.0			
1.2.2.2	8.8.4	Locate and protect existing services by hand excavation at the Nababeep Wastewater Treatment Plant..	Sum	1.0			
1.2.2.3	8.4.2.2 (h)	Dealing with water on site (groundwater or stormwater)	Sum	1.0			
1.2.2.4	C3.3.8	Compliance with Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and Construction Regulations, 3014	Sum	1.0			
1.3		Permanent Signage to mark pipelines, nameboards, etc. as specified.	Prov. Sum	1.0			
1.4		Provisional sum allowed for the CLO Salary for the duration of the contract	Prov. Sum	1.0			
1.5		Maintenance of plant access road for the duration of the contract by the provision of a water bowser to curb dust.	Months	4.0			
1.6		Provide, maintain and operate High Pressure Water Jet equipment for cleaning both sewers and concrete structures as specified.	Months	6.0			
1.7		Design and submission of mechanical and electrical drawings and equipment data sheets	Sum	1.0			
1.8		Management visits during construction phase	Sum	1.0			
1.9		Liaison with municipality	Sum	1.0			
Total Carried Forward To Summary						0	00

SECTION 2: CONSTRUCTION OF SCREW PUMP STATION STRUCTURE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
2.		**SECTION 2: CONSTRUCTION OF SCREW PUMP STATION STRUCTURE**					
2.1		Block off sewer at manhole and install temporary submersible pump c/w 55m of 100mm dia Lay flat Hose	Sum	1.0			
2.2		Clean out existing Inlet Chamber by removing all liquid, sludge rags and debris to bare concrete	m³	15.0			
2.3		Break out opening of 2200mm x 3500mm in 250mm thc reinforced concrete wall. Remove rubble to spoil.	m³	2.0			
2.4		**EARTHWORKS**					
	SANS 1200 DA	Restricted Excavation in all material, backfill, recompaction to 95% MOD AASHTO and dispose of surplus material for screw pump station structure					
2.4.1	8.3.2 (a)	Cut to spoil	m³				
2.4.2	8.3.2 (b)	Extra Over for Hard Rock Excavation:	m³				
2.5	**SANS 1200 GA**	**FORMWORK (Smooth Finish)**					
2.5.1	8.1.1.2	Vertical Formwork for horizontal sloping floor slabs (35°) 200mm thick	m²	3.0			
2.5.2	8.1.1.1	Vertical Formwork in Walls 250mm thc	m²	90.0			
2.5.3	8.1.1.1	Horizontal Formwork in Concrete Slabs	m²	6.0			
2.5.4	8.1.1.3 (b)	Battered Vertical Formwork in Sloping Concrete Walls (35°)	m²	6.0			
2.5.5	8.2.6	Forming of recesses and openings as per drawing	No.	10.0			
2.6		**REINFORCING**					
		Supply, cut, bend, place in position and fixing of reinforcement steel as follows:					
		High Tensile Steel Reinforcing Bars:					
2.6.1	8.3.1	35mm diameter basic price	kg	1,650.0			
2.6.2	8.3.2	Welded Mesh Reinforcing	m²	10.0			
2.7	**SANS 1200 G**	**CONCRETE**					
2.7.1	8.4.2	Blinding Layer in 15 MPa / 19 concrete 50mm thc	m²	20.0			
2.7.2	8.4.3	Strength Concrete, Grade 30 MPa / 19 in horizontal floors	m³	4.0			
Total Carried Forward						0	00

SECTION 2: CONSTRUCTION OF SCREW PUMP STATION STRUCTURE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
2.7.3	8.4.3	Strength Concrete, Grade 30 MPa / 19 in sloping floors (35°)	m³	4.0			
2.7.4	8.4.3	Strength Concrete, Grade 30 MPa / 19 in vertical walls	m³	12.0			
2.7.5	8.4.3	Strength Concrete, Grade 30 MPa / 19 in angled walls	m³	3.0			
Total Carried Forward To Summary						0	00

SECTION 3: CONSTRUCTION OF NEW INLET WORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
3.		**SECTION 3: CONSTRUCTION OF NEW INLET WORKS**					
3.1	**SANS 1200 D**	**EARTHWORKS**					
31.1	8.3.2 (a)	Excavate in all material for final preparation, shaping and compaction to 93% Mod AASHTO density of exposed area for inlet works installation. (250mm deep)	m³	10.0			
3.2	**SANS 1200 GA**	**FORMWORK (Smooth Finish)**					
3.2.1	8.1.1.2	Vertical Formwork for horizontal floor slabs 250mm thick	m²	6.0			
3.2.2	8.1.1.1	Vertical Formwork in Walls 250mm thc	m²	60.0			
3.2.3	8.1.1.1	Horizontal Formwork in Concrete Slabs	m²	5.0			
3.2.4	8.2.6	Forming of recesses and openings as per drawing	No.	10.0			
3.3		**REINFORCING**					
		Supply, cut, bend, place in position and fixing of reinforcement steel as follows:					
		High Tensile Steel Reinforcing Bars:					
3.3.1	8.3.1	35mm diameter basic price	kg	1,000.0			
3.3.2	8.3.2	Welded Mesh Reinforcing	m²	10.0			
3.4	**SANS 1200 G**	**CONCRETE**					
		Supply, mixing, placing, curing, testing of mass concrete:					
3.4.1	8.4.2	Blinding layer in Grade 10MPa/19mm concrete 50mm thc	m²	33.0			
		Supply, mixing, placing, curing, testing of strength concrete:					
3.4.2	8.4.3	Strength concrete class 30MPa/19mm in horizontal floorslab	m³	8.0			
3.4.3	8.4.3	Strength concrete Grade 30MPa/19 in Vertical Walls and Upstands	m³	6.0			
3.4.4	8.4.3	Strength concrete Grade 30MPa/19mm in drainage slabs	m³	1.0			
3.4.5	8.4.3	Benching class 25MPa/19mm in grit channels and outlet.	m³	1.0			
3.5		**SURFACE FINISHING**					
Total Carried Forward						0	00

SECTION 3: CONSTRUCTION OF NEW INLET WORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
	8.4.4 (b)	Supply all materials and labour for Steel trowel finishing:					
3.5.1		Top of channel floor, walls and drainage slabs (horizontal)	m²	10.0			
3.5.2		Benching (sloped surface)	m²	8.0			
3.6		**EXPANSION JOINTS**					
3.6.1	8.5	Supply all material and labour for installation of expansion joints as per drawing, complete with 250 mm wide PVC waterstops.	m	60.0			
3.7		**PARSHALL FLUME**					
3.7.1		Supply, delivery, installation and commissioning of pre-manufactured Grade 316 stainless steel 3 inch (76mm) Parshall Flume into concrete channel for flow measurement, complete with gauge plate.	Sum	1.0			
3.8		**HAND-RAKED SCREEN**					
3.8.1		Supply and install screen manufactured from 40x5 mm thick Galvanized Mild Steel bars spaced at 15mm spacing at 30 deg. slope inside 450 mm wide channel to a height of 900 mm above channel floor level, complete with galvanizing to SABS 763.	No.	1.0			
3.9		**CONCRETE BLOCK PAVING**					
		Supply, delivery and laying of Z-Interlock Brick Pavers on 20mm sand bed					
3.9.1		60mm thc Z-Interlock Brick Paving	m²	50.0			
3.10		**CHANNEL HAND STOPS**					
3.10.1		Supply and install grade 316 stainless steel wall-mounted vertical rise Handstops for 450 mm wide channel, complete with frame, handle, seal and bolts and nuts.	No.	4.0			
3.10.2		Supply and install 75 mm dia AVK Gate valve, complete with 110 mm dia uPVC class 4 bends, fittings and flange adaptors for grit channel drainage outlet as per drawing	No.	2.0			
3.11		**HAND RAILS**					
		Supply, deliver and install 42mm dia Grade 304 SS Mentis Handrails as per drawing c/w posts, rails, fixtures					
3.11.1		Gr304 SS Mentis type Handrails	m	20.0			
Total Carried Forward						0	00

SECTION 3: CONSTRUCTION OF NEW INLET WORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
3.12		**BY-PASS PIPE**					
		EARTHWORKS: PIPE TRENCHES					
	8.3.2 (a)	Excavation in all material, backfill, recompaction and dispose of surplus material for pipes up to 315mm dia. to depths off:					
		0,0 m to 1,5 m	m	60.0			
3.13	**1200 LB**	**BEDDING (BY-PASS PIPE)**					
		Provision of bedding material compacted to 93% of Mod AASHTO density (100% for sand) with material imported from commercial source:					
3.13.1	8.2.2.3 (a)	Selected granular material for bedding	m³	5.0			
3.13.2	8.2.2.3 (b)	Selected fill material (blanket)	m³	20.0			
3.14		**BY_PASS AND DRAINAGE PIPES**					
		Supply, lay, bed and test the following uPVC pipeworks as follows:					
3.14.1		315mm dia uPVC Class 9 Pipe from outlet Box to Manhole	m	10.0			
3.14.2		160mm dia uPVC Class 9 Pipe from drainage sump to Outlet Box	m	6.0			
3.14.3		160mm dia uPVC Class 9 Pipe from Inlet Box upstream of Hand-Raked Screens to downstream Manhole	m	4.0			
Total Carried Forward To Summary						0	00

SECTION 4: OLD RAW SEWAGE PUMP STATION BUILDING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
4.		**SECTION 4: OLD RAW SEWAGE PUMP STATION BUILDING**					
4.1		Strip off all “Big 6” corrugated fiber cement side and roof cladding and remove to spoil.	m²	60.0			
4.2		Strip off timber Roof Structure and remove to spoil	Sum	1.0			
4.3		Demolish the entire brick masonry superstructure above the Inlet Sump inclusive of the flat-roofed additions on either side and remove to spoil.	m³	25.0			
4.4		Backfill of old Dry well sump with a G7 gravel to be compacted to 98% Mod AASHATO density in layers 300mm thc to Normal ground level	m³	80.0			
4.5		**CONSTRUCTION OF NEW RAW SEWAGE PUMPHOUSE**					
4.5.1		**EARTHWORKS**					
		Excavate for restricted foundations in all materials and use for backfill or dispose inclusive of compaction to 93% Mod AASHTO					
4.5.1.1		Concrete footings	m³	2.5			
		Preparation, trimming, finishing and compaction of floor filling to 93% MOD AASHTO density for:					
4.5.1.2		Level grading and compaction under RC floors	m²	50.0			
4.6	**SABS 1200 GA**	**CONCRETE**					
	8.1.3	Preparation, supply, mixing, placing, finishing, curing and testing of concrete for:					
4.6.1	8.1.3.1	RC column footings (Class 30/19mm)	m³	2.5			
4.6.2	8.1.3.1	Strip foundations (Class 20/19mm)	m³	4.0			
4.6.3	8.1.3.1	RC Floor slabs 150mm thick with "powerfloat finish" (Class 30/19mm)	m³	7.0			
4.6.4	8.1.3.1	RC Cable Channels 200mm thick with (Class 30/19mm)	m³	2.0			
4.6.5	8.1.3.1	Pump plinths : (Class 30 / 19)	m³	3.0			
4.7		**REINFORCING**					
4.7.1	8.3.2	Mesh Ref 617 (single layer: 150mm RC floors Floors slab) incl 20% overlap	m²	50.0			
4.8	**1200HA**	**CANOPY ROOF STRUCTURE (STRUCTURAL STEEL)**					
	8.3.1	Supply and fabrication of steelwork					
Total Carried Forward						0	00

SECTION 4: OLD RAW SEWAGE PUMP STATION BUILDING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
		Welded members (Hot Rolled) Grade S355JR, inclusive of all connection plates, bolts, nuts, washers, welds and paintwork complete.					
	1200HC 8.2.3	Allowance for Paintwork on metal 200 micron DFT primer coat plus final coat on site, with allowance for touch up					
4.8.1		Beams IPE200	t	0.7			
4.8.2		Columns IPE200	t	0.7			
4.8.3		Baseplate connections (250x250x12mm thc)	No.	8.0			
4.8.4		Haunch connections	No.	8.0			
4.8.5		Apex connections	No.	4.0			
4.8.6		210 x 140 x 8 mm welded Purlin/Girt cleets (incl. galv. M12 bolts,nuts & washers)	No.	40.0			
4.8.7		M12 gr. 4.8 bolts galv.	No.	96.0			
		Members (Cold Formed) complete with bolted connections inclusive of all connection plates, bolts, nuts & washers.					
4.8.8		Lipped Channel Purlin/Girts (galv.) punched and cut to size (125x65x20x2.5mm)	t	0.5			
	1200HB	Roof Top & Side Cladding					
4.8.9	8.2.2	Chromadek IBR 0.58mm thc galv. sheeting mill finish incl. class 4 fasteners (corrosivity category C4 c/w bullnose	m²	60.0			
4.8.10		Gable corner flashing	m	24.0			
4.8.11		Drip ledge to bottom of cladding	m	24.0			
4.9	**SANS 2001-CM1: 2007**	**BRICK MASONRY**					
		Preparation, building, plastering and painting inclusive of damp proof course, brickforce, etc of the following:					
4.9.1		230mm Brickwall (both sides facebrick)	m²	60.0			
		Supply, install and finishing of the following wooden doors in steel frames complete in the following wall thicknesses at the indicated positions:					
4.9.2		813 x 2032 x 44mm Meranti FLB door with 230mm steel frame and 3 lever lockset.	No.	1.0			
Total Carried Forward						0	00

SECTION 4: OLD RAW SEWAGE PUMP STATION BUILDING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
		Supply, install and finishing of the following roller shutter doors in steel frames complete with chain operated reduction gears and 75mm slats powder coated in Brilliant White at the indicated positions:					
4.9.3		2.5m (wide) x 3m(high) Roller shutter door	No.	1.0			
		Supply, install, and finishing of the following natural aluminium ventilation louvers complete with insect gauze on the inside in the following wall thicknesses at the indicated positions:					
4.9.4		1m x 1m Louver in 230mm brick wall	No.	6.0			
		Supply, deliver and installation of 4.5mm thc Galvanized Mild Steel chequer-plate hinged covers for all acces manholes to the pump sump.					
4.9.5		600mm x 800mm Hinged Cover c/w handle	No.	2.0			
4.9.6		1500mm x 1000mm Hinged Cover c/w handle	No.	1.0			
4.10		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO SUMP**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
4.10.1		Repair of structural cracks > 2mm	m	20.0			
		SPALLING REPAIRS					
4.10.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	20.0			
4.10.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	20.0			
4.10.4		Apply Sika Monotop 1010 bonding slurry	m²	20.0			
4.10.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	20.0			
4.10.6		Apply SikaGard 903 corrosion inhibitor	m²	20.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
4.10.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	60.0			
Total Carried Forward						0	00

SECTION 4: OLD RAW SEWAGE PUMP STATION BUILDING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
4.10.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	60.0			
Total Carried Forward To Summary						0	00

SECTION 5: REFURBISHMENT OF CLARIGESTORS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
5.		**SECTION 5: REFURBISHMENT OF CLARIGESTORS**					
5.1		**Splitter Box**					
5.1.1		Remove wooden walkways to spoil	Sum	1.0			
5.1.2		Pump out all liquid and clean out sludge and debris to bare concrete	m³	10.0			
5.1.3		Refurbish existing handstops to allow smooth and functional use	No.	2.0			
5.1.4		Install Fibretek Non-slip Open Grid Flooring c/w 25mm x 25mm x 4.5mm Angles fixed to walls with M12 Gr,304 SS Sleeve anchors.	m²	5.0			
5.2		**9m dia AND 12m dia Clarigestors**					
5.2.1		Wash down all walls and floors with a high pressure water jet to obtain a clean bare concrete surface	Sum	1.0			
5.3		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO CLARIGESTOR WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
5.3.1		Repair of structural cracks > 2mm	m	20.0			
		SPALLING REPAIRS					
5.3.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	20.0			
5.3.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	20.0			
5.3.4		Apply Sika Monotop 1010 bonding slurry	m²	20.0			
5.3.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	20.0			
5.3.6		Apply SikaGard 903 corrosion inhibitor	m²	20.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
5.3.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	60.0			
5.3.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	60.0			
Total Carried Forward						0	00

SECTION 5: REFURBISHMENT OF CLARIGESTORS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
		Concrete Repairs					
		Minor concrete repairs inclusive of scrabbling, shutters, wet-to dry epoxy, stripping and finishing of surface.					
5.3.9		Conduct minor concrete repairs to digestor ventilation shaft	m³	5.0			
5.3.10		Conduct minor concrete repairs to overflow weirs	m³	3.0			
5.3.11		Conduct minor concrete repairs to launder walls and floors	m³	3.0			
5.4		**Sludge Pumps Discharge Pipeline**					
	SANS 1200 DB	**EARTHWORKS: PIPE TRENCHES**					
	8.3.2 (a)	Excavation in all material, backfill, recompaction and dispose of surplus material for HDPE pipes up to 200mm dia. to depths off:					
5.4.1		0,0 m to 1,5 m	m	60.0			
	SANS 1200 LB	**BEDDING (BY-PASS PIPE)**					
		Provision of bedding material compacted to 93% of Mod AASHTO density (100% for sand) with material imported from commercial source:					
5.4.2	8.2.2.3 (a)	Selected granular material for bedding	m³	5.0			
5.4.3	8.2.2.3 (b)	Selected fill material (blanket)	m³	20.0			
	SANS 1200 L	**200mm dia HDPE Sludge Rising Main**					
		Lay, bed and test the following existing HDPE pipeworks with stub and backing ring flanged joints as follows:					
5.4.4	8.2.1	110m mm dia HDPE Class 10 Pipe	m	20.0			
5.4.5	8.2.1	160mm dia HDPE Class 10 Pipe	m	70.0			
		BENDS & FITTINGS for HDPE Pipes					
5.4.6	8.2.2	160mm dia HDPE 90° Long Radius Bends	No.	2.0			
.4.5	8.2.2	160mm x 110mm x 160mm dia HDPE T-Piece c/w stub and backing rings	No.	2.0			
5.5		**Cleaning of connector pipes between Clarigestors and Biofilters**					
Total Carried Forward						0	00

SECTION 5: REFURBISHMENT OF CLARIGESTORS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
		High pressure water jetting of connector pipes to remove dirt and debris for various diameters and pipe materials					
5.5.1		110mm dia HDPE pipes	m	80.0			
5.5.2		150mm dia AC Pipes	m	45.0			
5.5.3		200mm dia AC pipes	m	55.0			
Total Carried Forward To Summary						0	00

SECTION 6: REFURBISHMENT OF BIOLOGICAL FILTERS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
6.		**SECTION 6: REFURBISHMENT OF BIOLOGICAL FILTERS**					
6.1		Wash down all walls and floors with a high pressure water jet to obtain a clean bare concrete surface	Sum	1.0			
6.2		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO BIOFILTER WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
6.2.1		Repair of structural cracks > 2mm	m	35.0			
6.2.2		Repair of structural cracks: Stitch Repairs	m	60.0			
		SPALLING REPAIRS					
6.2.3		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	20.0			
6.2.4		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	20.0			
6.2.5		Apply Sika Monotop 1010 bonding slurry	m²	20.0			
6.2.6		Trowel apply Sika Monotop 412NFG repair mortar	m²	20.0			
6.2.7		Apply SikaGard 903 corrosion inhibitor	m²	20.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
6.2.8		Protective Coating: SikaGard 720 & SikaGard 63N	m²	60.0			
6.2.9		Waterproofing: SikaGard 903 & Sikalastic 152	m²	60.0			
Total Carried Forward To Summary						0	00

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
7.		**SECTION 7: REFURBISHMENT OF CLARIFIERS**					
7.1		**9m dia and 12m dia Clarifiers**					
7.1.1		Wash down all walls and floors with a high pressure water jet to obtain a clean bare concrete surface	Sum	1.0			
7.2		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO CLARIFIER WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
7.2.1		Repair of structural cracks > 2mm	m	20.0			
		SPALLING REPAIRS					
7.2.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	20.0			
7.2.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	20.0			
7.2.4		Apply Sika Monotop 1010 bonding slurry	m²	20.0			
7.2.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	20.0			
7.2.6		Apply SikaGard 903 corrosion inhibitor	m²	20.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
7.2.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	60.0			
7.2.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	60.0			
		Concrete Repairs					
		Minor concrete repairs inclusive of scrabbling, shutters, wet-to dry epoxy, stripping and finishing of surface.					
7.2.9		Conduct minor concrete repairs to concrete bridge structures	m³	3.0			
7.2.10		Conduct minor concrete repairs to overflow weirs	m³	3.0			
7.2.11		Conduct minor concrete repairs to launder walls and floors	m³	3.0			
Total Carried Forward						0	00

SECTION 7: REFURBISHMENT OF CLARIFIERS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
7.3		Cleaning of connector pipes between Biofilters and Clarifiers					
		High pressure water jetting of connector pipes to remove dirt and debris for various diameters and pipe materials					
7.3.1		150mm dia AC Pipes	m	20.0			
7.3.2		200mm dia AC pipes	m	20.0			
		Cleaning of connector pipes between Clarifier 2 and Flocculation Tank					
		High pressure water jetting of connector pipes to remove dirt and debris for various diameters and pipe materials					
7.3.3		150mm dia AC Pipes	m	15.0			
		Cleaning of connector pipes between Clarifiers and Raw Sewage Sump					
		High pressure water jetting of connector pipes to remove dirt and debris for various diameters and pipe materials					
7.3.4		150mm dia AC Pipes	m	30.0			
		Allowance of repairs to connector pipes to render a functional connection between unit processes					
7.3.5		Repair of 150mm dia AC Pipes	Prov. Sum	1.0			
7.3.6		Repair of 150mm dia Mild Steel Pipes	Prov. Sum	1.0			
Total Carried Forward To Summary						0	00

SECTION 8: MODIFICATION OF FLOCCULATION TANK AND PIPEWORK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
8.		**SECTION 8: MODIFICATION OF FLOCCULATION TANK AND PIPEWORK**					
8.1		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO CLARIFIER WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
8.1.1		Repair of structural cracks > 2mm	m	15.0			
		SPALLING REPAIRS					
8.1.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	20.0			
8.1.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	20.0			
8.1.4		Apply Sika Monotop 1010 bonding slurry	m²	20.0			
8.1.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	20.0			
8.1.6		Apply SikaGard 903 corrosion inhibitor	m²	20.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
8.1.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	60.0			
8.1.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	60.0			
		Concrete Repairs					
		Minor concrete repairs inclusive of scrabbling, shutters, wet-to dry epoxy, stripping and finishing of surface.					
8.1.9		Conduct minor concrete repairs to concrete bridge structures	m³	3.0			
8.1.10		Conduct minor concrete repairs to overflow weirs	m³	3.0			
8.1.11		Conduct minor concrete repairs to launder walls and floors	m³	3.0			
8.2		**Cleaning of connector pipes between Flocculation Tank and Final Effluent Pump Sump**					
Total Carried Forward						0	00

SECTION 8: MODIFICATION OF FLOCCULATION TANK AND PIPEWORK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
		<u>High pressure water jetting of connector pipes to remove dirt and debris for various diameters and pipe materials</u>					
8.2.1		150mm dia AC Pipes	m	20.0			
8.2.2		200mm dia AC Pipes	m	20.0			
8.3		Allowance of repairs to connector pipes to render a functional connection between unit processes					
8.3.1		Repair of 150mm dia AC Pipes	Prov. Sum	1.0			
8.3.2		Repair of 200mm dia AC Pipes	Prov. Sum	1.0			
Total Carried Forward To Summary						0	00

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
9.		**SECTION 9: REFURBISHMENT OF OLD FINAL EFFLUENT PUMP STATION**					
9.1		**Final Effluent Pump Sump**					
9.1.1		Wash down all walls and floors with a high pressure water jet to obtain a clean bare concrete surface	Sum	1.0			
9.2		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO CLARIFIER WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
9.2.1		Repair of structural cracks > 2mm	m	15.0			
		SPALLING REPAIRS					
9.2.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	40.0			
9.2.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	40.0			
9.2.4		Apply Sika Monotop 1010 bonding slurry	m²	40.0			
9.2.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	40.0			
9.2.6		Apply SikaGard 903 corrosion inhibitor	m²	40.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
9.2.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	80.0			
9.2.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	80.0			
		Concrete Repairs					
		Minor concrete repairs inclusive of scrabbling, shutters, wet-to dry epoxy, stripping and finishing of surface.					
9.2.9		Conduct minor concrete repairs to pump sump	m³	6.0			
9.3		**Cleaning of connector pipes between Final Effluent Pump Station and Detention Tank**					
Total Carried Forward						0	00

SECTION 9: REFURBISHMENT OF OLD FINAL EFFLUENT PUMP STATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward						0	00
		<u>High pressure water jetting of connector pipes to remove dirt and debris for various diameters and pipe materials</u>					
9.3.1		150mm dia AC Pipes	m	20.0			
9.4		**Allowance of repairs to connector pipes to render a functional connection between unit processes**					
9.4.1		Repair of 150mm dia AC Pipes	Prov. Sum	1.0			
9.4.2		Repair of 150mm dia Mild Steel Pipes	Prov. Sum	1.0			
9.5		**MISCELLANEOUS WORKS**					
9.5.1		Repair/Replacement of Doors	No.	2.0			
9.5.2		Provisional sum for repainting interior of pump house inclusive of removing old and flaking paint with scrapers, application of a suitable undercoat and covering all walls with 2 coats PVA paint inclusive of brushes, sandpaper, crack filler, etc	Prov. Sum	1.0			
9.5.3		Replacement of glazing	Prov. Sum	1.0			
Total Carried Forward To Summary						0	00

SECTION 10: REFUBISHMENT OF DETENTION TANK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
10.		**SECTION 10: REFUBISHMENT OF DETENTION TANK**					
10.1		Wash down all walls and floors with a high pressure water jet to obtain a clean bare concrete surface	Sum	1.0			
10.2		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO CLARIFIER WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
10.2.1		Repair of structural cracks > 2mm	m	40.0			
		SPALLING REPAIRS					
10.2.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	15.0			
10.2.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	15.0			
10.2.4		Apply Sika Monotop 1010 bonding slurry	m²	15.0			
10.2.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	15.0			
10.2.6		Apply SikaGard 903 corrosion inhibitor	m²	15.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
10.2.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	20.0			
10.2.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	20.0			
		Concrete Repairs					
		Minor concrete repairs inclusive of scrabbling, shutters, wet-to dry epoxy, stripping and finishing of surface.					
10.2.9		Conduct minor concrete repairs to tank weirs and sumps	m³	10.0			
Total Carried Forward To Summary						0	00

SECTION 11: CHLORINE CONTACT TANK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
11.		**SECTION 11: CHLORINE CONTACT TANK**					
11.1		Wash down all walls and floors with a high pressure water jet to obtain a clean bare concrete surface	Sum	1.0			
11.2		**ALLOWANCE FOR STRUCTURAL CONCRETE REPAIRS TO WALLS, LAUNDERS, BRIDGES, ETC**					
		Concrete defects such as cracks, corrosion or spalling to be repaired by cleaning with a high pressure water jet, scrabbling to remove loose and unsound materials and then repairing concrete with a suitable product to render it watertight and sound for purpose.					
		CRACK REPAIRS					
11.2.1		Repair of structural cracks > 2mm	m	40.0			
		SPALLING REPAIRS					
11.2.2		Saw cut perimeter of repairs and break out 10mm behind reinforcing bars	m²	20.0			
11.2.3		Mechanically clean reinforcing bars and apply 2 coats Sika Armatec 110 to rebar	m²	20.0			
11.2.4		Apply Sika Monotop 1010 bonding slurry	m²	20.0			
11.2.5		Trowel apply Sika Monotop 412NFG repair mortar	m²	20.0			
11.2.6		Apply SikaGard 903 corrosion inhibitor	m²	20.0			
		PROTECTIVE COATINGS AND WATERPROOFING					
11.2.7		Protective Coating: SikaGard 720 & SikaGard 63N	m²	20.0			
11.2.8		Waterproofing: SikaGard 903 & Sikalastic 152	m²	20.0			
		Concrete Repairs					
		Minor concrete repairs inclusive of scrabbling, shutters, wet-to dry epoxy, stripping and finishing of surface.					
11.2.9		Conduct minor concrete repairs to tank weirs and sumps	m³	5.0			
11.2.9		Core Drilling of evenly spaced Holes through divider wall 300mm dia (300mm above tank floor level)	No.	8.0			
11.2.10		Making good of drilled holes to seal concrete and protect reinforcing steel by coating all with suitable cementitious epoxy.	No.	8.0			
Total Carried Forward To Summary						0	00

C2.3 DECLARATION (In respect of completeness of Tender)

Nama-Khoi Municipality
PO BOX 17
SPRINGBOK
8240

I/we, the undersigned, do hereby declare that these are the properly priced Bills of Quantities forming part C2.2 of this Contract Document containing 190 pages in consecutive order upon which my/our tender for **BID NO. NC062 /10/2024/2025: REFURBISHMENT OF NABABEEP WASTE WATER TREATMENT WORKS - CIVIL WORKS** has been based.

SIGNATURE OF TENDERER/S

DATE

Part C3: Scope of Work

Pages

Status

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

Drawings
Scope of Work (Parts C3.1, C3.4 C3.5 and C3.6)
SANS Standardised Specifications

C3.1 Description of the Works

CONTENTS **PAGES**

C3.1 Description of the Works

C3.1.1 General

The Nama Khoi Municipality proposes to refurbish its wastewater infrastructure in Nababeep to a functional condition. This wastewater treatment plant was originally constructed in 1962 by the Okiep Copper Company, who owned and operated most of the copper mines in the Springbok area. The last copper mines closed down in 2007, and the wastewater treatment plant was then transferred to the Nama-Khoi Municipality, who was tasked with administrating the town of Nababeep since then.

C3.1.2 Scope of Contract

The works entails the following

- Construction of a new reinforced concrete structure to accommodate two Archimedes Screw Lifting Pumps
- Construction of a new reinforced concrete above-ground Inlet works, comprising hand-raked screens, grit channels and a flow measuring facility.
- Demolition of existing primary pump station top structure and construct new.
- Refurbishment of several reinforced concrete structures such as Clarigestors, Biofilters and Clarifiers
- Replacing of existing Piping

C3.1.3 Description of the site and access

Nababeep village is 19km northwest of Springbok, just off the N7 national route between Cape Town and the Namibian border at Vioolsdrift. The town's elevation is approximately 815m above mean sea level, and is positioned in a rocky valley, with mountainous terrain radiating outwards in all directions. The town is located in quaternary catchment F30E.

The Nababeep WWTP is reached by following the Main Road into the CBD, then keeping left at the fork, and crossing the Schaap River bridge. Just after the bridge is a gravel road heading north, follow this road for approximately 1km, the site is the found on the left.

C3.1.4 Details of the Contract

C3.1.4.1 Addition of an Archimedes Screw Pump Lifting Station

- Contractor to block off sewage flow at manhole prior to Inlet Chamber.
- Install a temporary submersible pump of suitable size and bypass flow from the manhole to the Raw Sewage Sump for the duration of the works.
- Break out an opening of 2 300mm x 3 500mm in the West wall of the Inlet Chamber, expose rebar and make good.
- Excavate in all materials to create space for the screw pump station structure, with a floor at an angle of 35°

- Construction of a new Reinforced concrete structure to accommodate two number 400mm dia Archimedes Screw Pumps on completion as per drawing No. 35008.00-140-01.

C3.1.4.2 Construction of a new above-ground Inlet works

- Construction of RC concrete inlet works comprising a dual hand-raked screen, dual grit removal channels and a Parshall Flume for flow measurement. This structure also includes a bypass pipe and draining valves and pipework.
- Each Hand-raked screen shall comprise 22 number 40mm x 6mm Galvanized Mild Steel Flat Bars at a 15mm spacing across a 450mm wide concrete channel.
- Screen to be at 30° to 45° off the horizontal floor and securely fixed with a 10mm x 150mm Toe Plate to the channel floor and the top of the canal walls.
- Each screen also to be fitted with an Aluminium Handstop with dimensions of 500mm high x 450mm wide complete with frame in order to isolate a single channel for maintenance purposes.
- Aluminium Handstops to be fitted with an “L” type seal to render the handstop drop tight when closed.
- Downstream of each hand-raked screen, a grit channel with dimensions of 500mm x 450mm wide x 9000mm long is to be constructed. Each channel to have a floor recess 100mm deep and 150mm wide.
- Each channel is to be provided with a benching on either side to approximate a parabolic cross section at low flows.
- Each channel is to be provided with an outlet pipe complete with 75mm dia valve to facilitate drainage of the water from the channel to allow the grit to be removed.
- Each channel outlet is to be provided with a small piece (250mm x 250mm) Gr.304 SS Medium Weave Mesh over the outlet pipe. This is to retain any grit from flowing out when the channel is drained.
- Each grit channel shall also be equipped with a downstream Aluminium Handstop with dimensions of 500mm high x 450mm wide complete with frame in order to isolate a single channel for grit removal purposes.
- Downstream of the Grit Channels, a prefabricated Gr 316 Stainless Steel Parshall Flume with a throat width of 3” or 76.2mm, is to be cast neatly into the channel provided complete with an engraved upstream gauge plate mounted to the vertical wall.
- All concrete to have a Smooth off shutter finish with all edges provided with a 20mm x 20mm chamfered finish.
- All concrete to be 30Mpa with 19mm stone. Contractors to provide a mix design to the Engineer for approval before any concrete is cast.
- All joints to be fitted with a suitable horizontal as well as vertical waterstop as indicated.
- Where indicated on the drawings, Galvanized Mentis Handrailing will be securely fixed using, either Stainless Steel chemical anchors, or Stainless-Steel sleeve-anchors. Rawl bolts will not be accepted as fixing method.
- A 300mm Dia uPVC Bypass Pipe will be fitted from upstream of the hand raked screens to the downstream outlet. This is to facilitate flow to bypass the Inlet Structure should the screens become so clogged that the structure wants to overflow.

C 3.1.4.3 Demolition of existing Raw Sewage Sump Station top structure

The existing brick masonry Primary Pump Station building is constructed of brick masonry and has been hazardously added to over the years.
Subsequently the following actions are required:

- Strip out the existing ventilation draught tube, fan and supporting elements complete and remove to spoil.
- Strip out old mild steel gantry frame and remove to spoil.
- Strip out all old handrailing, open grid flooring, sump baskets, screens, etc and remove to spoil.
- Pump out water from the old dry well pump room, and strip out pumps, motors, valves, pipework, steel staircase and any debris remaining to spoil.
- Fit permanent blank flanges to suction piping passing through walls to the wet sump and render it fully waterproof.
- Isolate the electrical supply to the Pump House building and render it safe for removal of old switchgear.
- Strip out and remove all old 525V switchgear, cabling, cable racks, Motor Control Centres, light switches, light fittings and remove to spoil.
- Temporarily remove 2 number Gorman-Rupp self-priming pumps complete with baseplates, motors and switchgear and place in temporary storage.
- Strip off all “Big 6” corrugated fibre cement side and roof cladding and remove to spoil.
- Strip off all timber roof structures and remove to spoil.
- Demolish the entire brick masonry superstructure above the Inlet Sump inclusive of the flat-roofed additions on either side.
- Once Contractor has confirmed that the old Dry Sump has been rendered waterproof, and no leakage is taking place from the adjacent wet well, the old dry well will be backfilled with a G6 material to be placed in layers of 300mm thick and compacted to 98% MOD AASHTO density until it has been filled to floor level. On completion, the area is to be covered with a 100mm thick reinforced concrete slab finished flush with the existing floor slabs.
- On completion, only the cover slab of the Inlet Sump and existing floors are to remain for future installation of the 2 Gorman-Rupp Pumps and their switchgear.

C3 .1.4.4 Construction of a new Raw Sewage Pump House for the Inlet Sump

- Contractor to manufacture, supply and erect a new steel portal frame structure over the existing Inlet Sump floor slab with dimensions of 7.50m x 5.50m complete with White Chromadek bullnose side cladding and roof cladding.
- Construction of new brick masonry walls, face brick inside and outside as per drawing complete with 2.50m x 2.50m roller shutter access door and pedestrian doors and Ventilation Louvres.
- Construction of a new cable inlet canal for the Motor Control Centre electrical power supply.
- Supply, delivery and installation of Galvanized Mild Steel hinged covers for all access manholes to the pump sump.
- Construction of two new mass concrete pump plinths for the repaired Gorman-Rupp self-priming pumps.
- Refurbish all concrete floors to a neat and tidy finish.
- Modify existing internal pipework and reconnect to existing rising main outside of new building.

C3.1.4.5 Repair and refurbishment of reinforced concrete structural defects on Clarigestors, Biological Filter basins, Clarifiers, etc. (crack repairs, sealing, etc)

Nababeep WWTP is fitted with several reinforced concrete structures in excess of 60 years old and their concrete has several incidences of spalling, where the rebar is completely exposed. The concrete at several structures also shows severe signs of concrete corrosion which will need to be repaired.

Similar defects are also present on the concrete bridges constructed across the Clarigestors and clarifiers, where spalling and exposed steel are visible. The one biofilter has a severe crack which must also be repaired. The following is required in terms of concrete repairs:

- On removal of all liquids and sludge from these compartments, all internal concrete will be washed clean with a high-pressure water jet and then inspected for cracks and or concrete corrosion.
- Severe cracks (> 2mm in width) shall be repaired using a suitable cementitious mortar, and then sealed off with a suitable sealant.
- Areas where concrete corrosion have occurred, will be scrabbled to remove all loose material and laitance. Area is then to be prepared and repaired with a suitable epoxy mortar.
- Areas which have spalled and where rebar is visible shall be suitably repaired and made good to be functional and to avoid further deterioration and corrosion taking place.
- Typical areas which require attention will be the overflow launders on the circumference of the Clarigestors, the concrete shafts which connect the anaerobic chamber with the atmosphere, and the concrete bridges across the Clarigestors, which bear the mechanical equipment.
- An allowance has been made in the Bill of Quantities for an estimated area for each of the Clarigestors, Biofilter Basins and Clarifiers for such repairs. With the exception of the Biofilters, the prescribed process will be similar to that described above.

C 3.1.4.1 Refurbishment of Flocculation Tank

- On removal of all liquids and sludge from these compartments, all internal concrete will be washed clean with a high-pressure water jet and then inspected for cracks and or concrete corrosion.
- Severe cracks (> 2mm in width) shall be repaired using a suitable cementitious mortar, and then sealed off with a suitable sealant.
- Areas where concrete corrosion have occurred, will be scrabbled to remove all loose material and laitance. Area is then to be prepared and repaired with a suitable epoxy mortar.
- Areas which have spalled and where rebar is visible shall be suitably repaired and made good to be functional and to avoid further deterioration and corrosion taking place.

C 3.1.4.2 Refurbishment of Detention Tank

- On removal of all liquids and sludge from these compartments, all internal concrete will be washed clean with a high-pressure water jet and then inspected for cracks and or concrete corrosion.
- Severe cracks (> 2mm in width) shall be repaired using a suitable cementitious mortar, and then sealed off with a suitable sealant.

C 3.1.4.3 Refurbishment of the Old Final Effluent Pump Station

- Old Pump Sump to be emptied of water, sludge and debris, thoroughly cleaned out and inspected for structural concrete damage.
- Contractor to repair any structural damage such as cracks, concrete corrosion and spalling.

C 3.1.4.4 Refurbishment of the Old Chlorine Tank

- Old Pump Sump to be emptied of water, sludge and debris, thoroughly cleaned out and inspected for structural concrete damage.
- Contractor to repair any structural damage such as cracks, concrete corrosion and spalling.

C3.2 Engineering

DRAWINGS ISSUED WITH THIS DOCUMENT

The following drawings are applicable to the contract and will form part of the Contract Document. The drawings are / or must be attached to this document under C3.5 Annexes.

DWG No.	SHORT DESCRIPTION	SIZE	REVISIONS		
			T0	0	1
	TENDER DRAWINGS:				
35008.00-100-01	GENERAL LAYOUT: EXISTING NABABEEP WWTP	A1	08-08-2023		
35008.00-201-01	NEW SUMP BUILDING STRUCTURAL DETAILS	A1	25-07-2023		
35008.00-201-02	NEW SUMP BUILDING MECHANICAL DETAILS	A1	25-07-2023		
35008.00-201-03	3D VIEWS NEW SCREW PUMPS AND INLET WORKS	A1	05-07-2023		
35008.00-210-01	SCREW PUMPS AND INLET WORKS DETAILS	A0	25-07-2023		
35008.00-700-01	NEW SUMP BUILDING ELEVATION DETAILS	A1	25-07-2023		

C3.3 Construction

CONTENTS **PAGES**

C3.3 CONSTRUCTION

C3.3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are the **South African National of Standard Standardised for Civil Engineering Construction SANS 1200.** (Note to compiler. “SANS” has been changed to “SANS”; the SANS 1200 specifications are due to be replaced in the foreseeable future by SANS 1200).

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

SANS	1200	A	-	1986	:	GENERAL
SANS	1200	AB	-	1986	:	ENGINEERS OFFICE
SANS	1200	C	-	1980	:	SITE CLEARANCE
SANS	1200	DB	-	1989	:	EARTHWORKS (PIPE TRENCHES)
SANS	1200	D	-	1988	:	EARTHWORKS
SANS	1200	G	-	1982	:	CONCRETE (STRUCTURAL)
SANS	1200	H	-	1990	:	STRUCTURAL STEEL WORK
SANS	1200	HC	-	1988	:	CORROSION PROTECTION OF STRUCTURAL STEELWORK
SANS	1200	HB	-		:	HANDRAILING AND FLOORS
SANS	1200	L	-	1983	:	MEDIUM PRESSURE PIPELINES
SANS	1200	LB	-	1983	:	BEDDING (PIPE)
SANS	1123		-	2015	:	PIPE FLANGES
SABS	1215		-	1984	:	CONCRETE MASONRY UNITS
SABS	227		-	1986	:	MASONRY UNITS OF BURNT CLAY
SANS	10400		-	2010	:	APPLICATION OF NATIONAL BUILDING REGULATIONS
SANS	2001	CC2	-	2007	:	CONCRETE WORKS (MINOR WORKS)
SANS	2001	CM1	-	2007	:	MASONRY WALLING
SANS	2001	EM1	-	2007	:	CEMENT PLASTER

C3.3.2 PROJECT SPECIFICATIONS

C3.3.2.1 VARIATION AND ADDITIONAL CLAUSES TO THE STANDARD SPECIFICATION LISTED IN THE LIST OF SPECIFICATIONS

PSA GENERAL (SANS 1200A)

PSA5 CONSTRUCTION

PSA5.1 Setting out of the Works

The Contractor shall inform the Engineer of any conflict between the position of any part of the Works and an existing feature. The setting out of the Works is the Contractor's responsibility.

PSA5.2 Accommodation of traffic

The Contractor shall provide and maintain all temporary road signs, etc. that are necessary for the normal safe flow of traffic (vehicles and pedestrians).

PSA5.3 Existing services

All services shall be treated as live until proven otherwise. The Contractor shall not commence work in an area until proper arrangements have been made for supervision of the work by the relevant authority.

The Contractor shall give assistance to service authorities with the location, protection and relocation of services controlled by that authority.

PSA7 TESTING

PSA7.1 Testing Principles

Test results must comply with the minimum prescribed specifications and no statistical evaluations will be accepted

PSA8 MEASUREMENT AND PAYMENT

PSA8.2 Dealing with storm water

The cost of controlling storm water will be held to be included for in the tendered sums for Items (A1, B1 and C1) and (A, B2 and C2) and no separate payment will be made for this work.

PSA8.3 Dealing with existing services

The following works that are executed by the Contractor on the instruction of the Engineer will be measured and paid for under "Daywork" rates.

(i) All additional work to locate and expose the existing service if the existing service is situated further than 2.0 m from the position indicated, (i.e., excluding the initial work within 2.0 m from the indicated position).

(ii) Work that is carried out by the Contractor with regard to existing services that are not indicated on the drawings and for which the Employer will carry the cost according to Subclause 5.4.

PSA8.4 **Testing of Materials**

The Engineer reserves the right to carry out any test he deems necessary using commercial laboratories to ensure compliance of the materials supplied for use in the works with the requirements of the applicable SANS 1200 specification, or to ensure that the standard of workmanship meets the requirements of the Specification.

In the event of these check tests not meeting the requirements of the Specification, the cost of such tests shall be for the Contractor's account. If the tests meet with the requirements of the Specification, the Contractor will be required to pay the account of the laboratory concerned, but such payments will be recoverable under the provisional sum allowed for in the Bills of Quantities. The Contractor's tendered mark-up must allow for arranging the necessary testing and for payment, if applicable, through the contract.

PSA8.6 **Miscellaneous**

An item, which, in the payment clause column of the Bills of Quantities, refers to this clause (PSA8-5), will be measured in the unit scheduled. Any item omitted, the sum or rate for such item shall cover the cost of all material, labour and plant to execute and complete the work as specified, described in the Bills of Quantities or shown on the drawing(s). Any items omitted in the schedule to complete the work successfully must either be allowed for in the rate or a separate item should be entered if so required.

PSA8.8 **Temporary Works**

PSA8.8.1 **Main Access to Site**

Add the following:
There will be no payment for the construction of a temporary gravel road or the maintenance of the existing road on the site. The contractor must make sure that any costs to access the site is included in item (A1, B1 and C1) and (A2, B2 and C2) in the Bill of Quantities of the contract data.

PSA8.8.4 **Existing Services**

Add the following:

"For the exposure of existing services, an item for the excavation of soft material by hand in cubic meters has been provided for. The tariffs include all necessary payments for the excavation as instructed by the engineer. The tariffs will also include the backfilling and compacting of the materials, the transport of all surplus material, the safeguard of the excavations and any other works necessary to complete the works. Transport of up to 0.5 kilometres of the material will be included in the tariffs.

ENGINEERS OFFICE (SANS 1200AB)

PSAB3 **MATERIALS**

PSAB3.1 **Facilities for the Engineer**

a) **Name boards**
The Contractor shall supply and erect, to the satisfaction of the Engineer, two project boards as shown on relevant drawings.

PSAB4 **PLANT**

PSAB4.1 **Survey equipment**

The Contractor shall provide the following survey equipment for use by the Engineer.

a) Automatic level with tripod and staff
b) All steel and wood pegs, concrete, hammers, picks, etc that the Engineer may require.
c) Steel tape of length 50 m.
d) Measuring wheel
e) At least one survey assistants
f) Safety and Medical Emergency Equipment etc.

PSC **SITE CLEARANCE**

PSC5 **CONSTRUCTION**

PSC5.1 **Disposal of material (Subclause 3.1)**

Material obtained from demolishing and unwanted excavated material, shall be disposed of away from the site as indicated by the engineer.

PSDB **EARTHWORKS (PIPE TRENCHES)**

PSDB3 **MATERIAL**

PSDB3.1 **Method of classifying (Sub clause 3.1.1)**

The Contractor may use any method he chooses to excavate any class of material but his chosen method of excavation **shall not determine** the classification of the excavation. The Engineer or his Representative will decide on the classification of the materials. In the first instance the classification will be based on inspection of the material to be excavated and on the criteria given in PSD3.2.

PSDB3.2 **Classification of excavation (Sub clause 3.1.2)**

All material encountered in any excavations for any purpose including restricted excavation will be classified as follows:

a) **Hard rock excavation**

Hard rock excavation shall be excavation in material (including boulders exceeding 0.15 cubic metres in individual volume) that cannot be efficiently removed without blasting or without wedging and splitting or be in material, which cannot be excavated by a loader/backhoe or by a scraper without prior ripping.

b) **Intermediate excavation**

Intermediate material will not be measured on this contract.

c) **Soft excavation**

Soft excavation shall be all material not falling into the category of hard rock or calcrete excavation.

PSDB 3.3 **Selected Granular Material**

Add the following:

"Where appropriate materials for backfilling is available in layers of 150 millimetres or more, the materials will be separated from the other materials for backfilling

PSDB 3.5 **Backfilling Material**

PSDB 3.5.2 Disposal of Surplus Material

Add the following:

The Engineer will decide which materials are unsuitable for backfilling. The rest of the materials must be disposed at a site as indicated by the engineer

PSDB5 **CONSTRUCTION**

PSDB5.2 **Minimum Base Widths**

Outside diameter of pipe, mm		Side allowance on both sides, mm
Above	To	Sides mm
-	125	300
125	700	300
700	1000	400
1000	2000	500
2000	-	600

PSDB5.3 **Existing services**

The Contractor shall bear the full cost of the repairs to any existing services damaged because of the Contractors activities.

PSDB5.4 **Dust**

The Contractor is responsible for the control of excessive dusty conditions due to the construction procedures. The Contractor shall also be held responsible for any claims that might arise. The Contractor to allow for regular watering of areas to control dust.

PSDB5.9 **Road Traffic Control**

Add the following to D5.1.6

a) Sufficient road signs must be erected in such a way the motorists will be warned in time of works, e.g. at the closing of a street sufficient signs to direct traffic must be erected at the preceding intersection.

b) Bypasses and/or road signs shall be provided and/or erected at all locations where the free flow of traffic is obstructed and shall be approved by the Engineer before the commencement of construction. Where main roads are crossed, detours and temporary traffic signs must be provided as shown on the attached drawings.

c) Where a trench crosses a street or any place where a trench crosses the direction of traffic flow, drums must be placed in the street and not just along the sides of the street with danger tape in between.

d) Danger tape must be put up between drums and tied around the drums.

e) Drums must be filled with stones. The spacing of drums must be in such a way (maximum 5m) that they are visible from all directions.

f) Sufficient safety measures must be utilized for pedestrians.

PSDB5.10 **Areas subject to traffic loads (Subclasses 3.5(b) and 5.7.2)**

All trenches within the road reserves will be considered to be subject to traffic loads and the backfill material and compaction in these trenches shall comply with the requirements of Sub clauses 3.5(b) and

PSDB5.11 **Suitable backfill material**

It is likely that some of the material excavated from the trenches will not comply with Sub clauses 3.5 and 4.6.2. Suitable material from other sections along the pipe route shall be used to complete the backfilling to these trenches. The unsuitable material shall be removed from site and spoiled at the designated spoil site as indicated by the Engineer.

PSDB7 **TESTING**

PSDB7.1 **Testing and compaction of backfill to trenches and reinstatement of surfaces (Sub-Clause 7.1)**

The Contractor must furnish the Engineer with compaction tests results to prove that the compaction comply to the prescribed density. No single test result, which is below the specified density, will be accepted.

PSDB8 **MEASUREMENT AND PAYMENT**

PSDB8.1 **Excavation (Sub Clause 8.3.2)**

The rates for excavation shall include the cost of battery of deep excavations to comply with the latest OSH Act.
The rates for excavation of trenches shall also cover all costs of density testing to be borne by the Contractor as specified in PSDB7.1 and the provision of suitable backfill material from other excavations where required.

PSG **CONCRETE (STRUCTURAL) (SANS 1200 G)**

PSG2 **Interpretations**

PSG2.1 **Definitions (Subclause 2.3)**

Under (a) add:

A Constructional joint: a joint required on account of constraints or convenience in the method of construction and that is not a movement, contraction or expansion joint.

PSG2.2 **Exposure Condition (Subclause 2.4.1)**

All Concrete on the Works shall be as specified for severe exposure condition.

PSG2.3 **Strength Concrete (Subclause 2.4.2)**

Grade 30MPa/19mm means strength concrete grade 30 MPa with 19 mm stone.

PSG2.4 **Joints**

Notwithstanding Subclause 2.4.3, designed joints will only be joints that are shown on the drawings. Any other joints that are required by the contractor as a result of his construction constraints or for any other reason, whether approved by the Engineer or not, will not be considered to be designated joints as defined in Subclause 2.4.3, i.e. they will be considered to be non-designated joints.

PSG3 **MATERIALS**

PSG3.1 **Cement (Subclause 3.2)**

All cement used in the works shall be ordinary Portland cement complying with SANS 471.

PSG3.2 **Storage (Subclause 3.2.3)**

Cement shall be used in the order in which it is received. Unless approved by the Engineer, cement kept in storage for longer than 8 weeks shall not be used in the Works. Any cement that contains lumps that cannot easily be crumbled to powder between the fingers may not be used.

PSG3.3 **Water (Subclause 3.3)**

Only potable water from an approved source may be used for mixing concrete.

PSG3.4 **Aggregate (Subclause 3.4)**

The nominal stone size specified in the concrete grade (e.g. 30 MPa/40 mm) shall mean stone conforming to the grading specified in SANS 1083 for the nearest equivalent size, i.e. 40 mm means stone that complies with SANS 1083 for 37,5 mm size. Aggregates with a shrinkage higher than 130% will not be allowed.

PSG 3.4.1 Coarse Aggregate

PSG 3.4.1.1 Coarse Aggregate must comply with the 10%FACT requirements set for durability.

PSG 3.4.1.2 The nominal aggregate size is the smallest of the 37.5-millimetre maximum particle size and 25% of the slab thickness.

PSG 3.4.1.3 If the nominal aggregate size is larger than 26.5 millimetres, the coarse aggregate must consist of a mixture of aggregates larger than 26.5 millimetres and aggregates smaller than 26.5 millimetres.

PSG 3.4.2 Fine aggregate

PSG 3.4.2.1 Fine aggregate may not contain more than 40% Silicon particles.

PSG 3.4.2.2 Adjustments must be made to the mixture design if the Fineness Modulus of the fine aggregates varies more than ± 0, 2 during construction.

PSG 3.4.3 Mixture Design

A complete concrete mixture design must be submitted to the Engineer for approval before the commencement of the works.

The Contractor must have sufficient cube moulds to make test cubes on a daily base on request of the Engineer.

Care must be taken with the design of the mixture, to limit bleeding to a minimum. Special attention must be given to the fine aggregate if bleeding occurs.

PSG3.5 Samples (Subclause 3.4)

At least one month before commencement of concrete work the contractor shall supply, at his own cost, provide representative samples to the engineer of the aggregates he intends using, together with certificates from an approved laboratory indicating that the aggregates comply with the specifications. Approximately 50 kg of each sample of aggregate shall be supplied.

After approval, these samples shall be taken as standard for the agreed aggregates to be used in the Works. If at any time during the course of the Contract the Engineer considers that there has been any deviation from the approved standard the contractor shall submit further tested samples of material to the Engineer for approval.

PSG3.7 Admixtures (Subclause 3.5.1)

The use of admixtures will be subject to the approval of the Engineer.
The information listed in Subclause 3.5.1 shall be provided.

PSG4 PLANT

PSG4.1 Mixing plant and vibrators (Subclauses 4.3 and 4.4)

Standby mixers and vibrators of adequate capacity and with an independent power unit. Unit shall be maintained on site for immediate use in the event of breakdown of the regular mixers or vibrators or failure of the power supply.

PSG4.2 Formwork Ties (Subclause 4.5.3)

The use of sleeves for formwork ties through the walls of water-retaining structures will not be permitted. Ties, when cast in, shall have some form of positive anchorage to prevent any rotation when loosening formwork.

PSG4.3 Formwork: Chamfers and Fillets

Air exposed external angles in concrete work shall have 20 mm x 20 mm chamfers unless otherwise specified or ordered, but the top edge of a slab that is to receive an applied finish, shall not be chamfered.

Internal corners in concrete work need not have fillets unless such fillets have been specified on the drawings or ordered by the Engineer.

PSG4.4 Water-bath

A temperature-controlled water-bath shall be provided on site. The water-bath shall be located under cover.

PSG5 CONSTRUCTION

PSG5.1 REINFORCEMENT

PSG5.1.1 Fixing (Subclause 5.1.2)

Fixing of reinforcing bars by welding and heating of bars will not be permitted.

PSG5.1.2 **Spacers**

Spacers of approved design include approved plastic or other proprietary spacers, or purpose made precast mortar blocks.

Where mortar blocks are being used, they shall be properly shaped so as to slip out of position and shall be made of the same mix as the mortar of the concrete in which they are to be placed. The mortar shall be well compacted by approved means into the moulds to result in blocks with a density of at least 2 300 kg/m; and which are free from honeycombing. The mortar blocks shall be cured in water for at least 7 days. Blocks which have not been manufactured and cured strictly in accordance with these requirements or which are in any other way considered unsatisfactory by the Engineer, will be rejected and shall be removed from the site.

PSG5.1.3 **Cover (Subclause 5.1.3)**

In Subclause 5.1.3(a) amend the words bar or stirrup to read: bar, secondary reinforcement, tie stirrup, tying-wire knots or wire ends.
Add to Subclause 5.1.3: (a) Tying wire may not encroach on the specified minimum cover by more than a single strand thickness. The cover to steel reinforcement shall not be less than 40 mm.

PSG5.2 **FORMWORK**

PSG5.2.1 **Classification of finishes (Subclause 5.2.1)**

Formwork for formed concrete surfaces against which backfill will be placed shall be rough. Formwork for formed concrete surfaces shall be smooth, except where otherwise specified.

PSG5.2.2 **Special Smooth Finish**

All concrete surfaces that will be exposed above the final ground levels shall have a special smooth finish to a Degree of Accuracy I. The formwork used shall be high-grade, unblemished and regular in size. Formwork ties shall be placed in a regular pattern. The special smooth finish shall be an off-shutter finish to the concrete such that no after treatment is required other than at the positions of formwork ties.

PSG5.3 **CONCRETE**

PSG5.3.1 **General (Subclause 5.5.1.1)**

The concrete mix design for strength concrete must be prepared in an approved laboratory and the results of actual test mixes must be submitted for approval together with 7-day and 28-day strength test results. Special attention is drawn to the fact that the concrete mix used for water retaining structures must provide a very dense and impervious concrete.

No concrete shall be cast until the mix designs have been approved by the Engineer. The Engineer may call for revised mix designs at any stage during the Contract.

PSG5.3.2 **Slump (Subclause 5.5.1.2)**

The slump for vibrated concrete shall be a minimum of 30 millimetres and a maximum of 70 millimetres , and for hand-placed concrete, a minimum of 70 millimetres and a maximum of 120 millimetres.

PSG5.3.3 **Workability (Subclause 5.5.1.3)**

If the necessary compaction of the concrete cannot be obtained, a better-quality aggregate must be used. The use of more water or any addition of admixtures may not be considered without the written permission of the engineer.

PSG5.3.4 **Chloride Content (Subclause 5.5.1.4)**

With reference to Table 4, efflorescence will not be acceptable on any exposed concrete surface.

PSG5.3.5 **Durability (Subclause 5.5.1.5)**

Add the following
*"*The water/cement ratio of all concrete mixes will not be more then 0,53."

PSG5.3.6 **Strength Concrete (Subclause 5.5.1.7)**

With the exception of mixes weaker than 15MPa, all concrete for structural units/the Works shall be considered to be strength concrete in terms of Subclause 5.5.1.7. All structural concrete shall be according to the prescribed strengths.

PSG5.3.7 **Strength Concrete (Subclause 5.5.3.1)**

Add the following

*"*If concrete is mixed by hand, the limit of the quantity of one single mix will be 0,25 cubic meters. Mixing will take place on a waterproof surface. The Cement and Sand will be mixed thoroughly before the addition of stone particles, where after the water will be added last.

PSG5.3.8 **Prevention and repair of plastic shrinkage cracks**

The contractor shall take whatever measures are necessary to prevent plastic shrinkage cracking in the concrete. Particularly on dry windy days or hot sunny days the contractor shall make provision for fine spraying of the concrete and covering with black plastic sheeting. It may be necessary to change the aggregates or the concrete mix proportions.

If plastic shrinkage cracking occurs, the cracks shall be closed up by re-vibrating the concrete with a poker vibrator, within about three hours of casting. Once the cracks have been closed, the concrete shall be kept thoroughly wet, or covered with plastic sheeting for at least a further three hours.

PSG5.4 **CONSTRUCTION JOINTS (SUBCLAUSE 5.5.7)**

PSG5.4.1 **General**

The edge of joints, exposed to view in the finished structure, shall be formed with suitable beads to provide a straight edge true to line and level. As soon as practical, but not before 15 hours after placing, the construction joint surface shall be prepared to receive fresh concrete. This preparation, as specified in 5.5.7.3(a) to (d), shall be such as to improve all laitance or inert and strength less material which may have formed and the specified chipping or sand blasting, shall be such as to produce a roughened surface all over.

When concerting is interrupted, concrete surfaces shall be protected from the sun as specified in Subclause 5.5.8(d) of by means of hessian kept damp until concerting is resumed.

PSG5.4.2 **Formed Joints (Generally vertical or near vertical)**

Formed joints will be considered to be designated joints as defined in Subclause 2.4.3.
(The forming of a straight edge to a joint as specified in PSG5-4,1 does not constitute a formed joint).

Each joint shall be formed as shown on the drawings, complete with shear keys rebates, waffle formwork, V-feature, water stops, Flexcell or similar joint filler, dowel bars and their PVC tubes, etc. as indicated.

PSG5.5 **CURING AND PROTECTION (SUBCLAUSE 5.5.8)**

PSG5.5.2 **Formed Surfaces**

In order to improve the effectiveness of the curing treatment, the specified minimum time for the removal of the formwork shall be four days.

PSG5.5.3 **Curing Compound**

The use of membrane curing compounds will be allowed on vertical faces or steeply inclined faces (i.e. steeper than 45° to the horizontal) of cast in-situ members of the structures subject to the contractor producing sufficient, satisfactory cube crushing strength test results where the crushing strength of cubes which have been cured with the proposed curing membrane and left exposed to the elements are compared with those of an equal number of water cured cubes. The crushing strength

of the cubes cured with the proposed membrane shall be at least 85% of the crushing strength of the water cured cubes.

The timing of power-floating is critical to its success. Power-floating steel shall not commence until the concrete can support the weight of a man without indentation and until the moisture sheen has disappeared. Thus several hours will have to elapse after concreting has been completed before this operation can commence. Night work may therefore be required.

This main objective of power floating the mortar skim on the no-fines under drainage layer is to achieve a plane, smooth surface. This need not be dense.

PSG5.6 CONCRETE SURFACES (SUBCLAUSE 5.5.10)

PSG5.6.1 Screeded finish

After placing and compacting, the concrete on a top (unformed) surface shall be struck off with a template to the designated grades and tampted with a tamping board to compact the surface thoroughly and to bring mortar to the surface, leaving the surface slightly ridged but generally at the required elevation. No mortar shall be added, and noticeable surface irregularities caused by the displacement of coarse aggregate shall be made good by re-screeding after the interfering aggregate has been removed or tampted.

PSG5.6.2 Wood-floated finish (Subclause 5.5.10.1)

Where wood-floating is ordered or scheduled, the surface shall first be given a finish as specified in PSG5.6.1 and, after the concrete has hardened sufficiently, it shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screeding marks.

PSG5.6.3 Steel-floated finish

Where steel-floating is specified or scheduled, the surface shall be treated as specified in PSG5.6.1 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.

PSG5.6.4 Power float finish

Where power floating is specified or scheduled the surface shall be treated as specified in PSG5.6.2 except that when the moisture film has disappeared, and the concrete has hardened sufficiently to prevent laitance form being worked in the surface, the screeded surface shall be power floated to produce dense, smooth and uniform surface free of all trowel marks. In corners and areas of restricted access the concrete surface shall be finished by steel floating in accordance in PSG5.6.1.

The timing of power-floating is critical to its success. Power-floating steel shall not commence until the concrete can support the weight of a man without indentation and until the moisture sheen has disappeared. Thus several hours will have to elapse after concreting has been completed before this operation can commence. Night work may therefore be required.

The main object of power floating the mortar skim on the no-fines underdrainage layer is to achieve a plane, smooth surface. This needs to be done.

PSG5.6.5 Broom-swept finish

Where broom-swept finish is specified, the surface shall be treated as specified in PSG5.6.2 and hereafter swept transversely (to the direction of the roadway paving) with a stiff bristle broom to produce an approved no-skid finish.

PSG5.6.6 GRANOLITHIC SCREEDS

PSG5.6.61 General

Before placing any granolithic screeds, the base concrete shall be chipped to expose the aggregate over 100% of the area to be screeded and soaked with water for at least 24 hours.

The base concrete shall be thoroughly cleaned by scrubbing and all standing water removed after soaking. A 1:2 cement/sand grout shall then be brushed into the prepared surface followed by the

granolithic screed before the grout sets. The granolithic screed shall be of the driest feasible consistency with a slump not exceeding 50mm and shall be formed true to profile and shape as required and shown on drawings. Before placing granolithic screed against and adjacent band of granolithic screed the edge of the latter shall be prepared by chipping back to firm material, wire brushing and brushing with grout as for the base concrete.

Granolithic screed shall be compacted to remove all air and shall be screeded and finished with a steel trowel to Degree of Accuracy 1.

The trowelling shall be carried out in the following stages: -

a) First – as soon as the granolithic screed has been compacted and screeded.
b) Second – after 2 hours to close the surface and remove laitance.
c) Third – after a further 24 hours.

The time intervals are estimated as appropriate to normal temperature conditions and shall be varied by the Contractor to ensure a smooth dense finish.

Granolithic screed shall be cured as specified in Subclause 5.5.8(b) but shall additionally be protected from direct sunlight and drying winds as it is being placed.

All screeding necessary to accommodate mechanical equipment shall be done under the equipment supplier's supervision and in strict accordance with his instructions. It shall be commenced as soon as the equipment supplier give notice on completion of erection and shall be finished expeditiously.

The Contractor shall make good any damage to the mechanical equipment resulting from his personnel not following the supplier's instructions. Any spillage on the equipment shall be cleaned off immediately.

PSG8 MEASUREMENT AND PAYMENT

PSG8.1 Reinforcement (Subclause 8.1.2.2 and 8.1.2.3)

Notwithstanding the method of measuring and paying for reinforcement specified in Subclause 8.1.2.2 and 8.1.2.3, reinforcement will be measured and paid for as scheduled.

PSG8.2 Concrete (Subclause 8.1.3.3)

The rates for concrete shall also cover:

1. The cost of the preparation of design mixes by an approved laboratory and submission for approval by the Engineer (PSG5-3.1)
2. The cost of non-designated joints (PSG2-2, 4)
3. Screeded finish of unformed surface as specified in PSG5-6,1 and
4. Wood-floated finish to exposed surfaces as specified in PSG5-6,2

PSG8.3 Joints (Subclause 8.5)

Only designated joints as shown on the drawings will be measured for payment according to the length of each type of joint constructed (PSG2-4). The rate shall cost of all materials, labour and plant required to construct each type of joint specified on the drawings, including the cost of all shuttering, treatment of the joint as specified in Subclause 5.5.7.3, the provision of chamfers as specified where concrete is exposed, as well as testing the repairing where necessary.

Non-designated joints will not be measured for payment.

PSG8.4 Formed joints

Formed joints will be measured by the plan area of the joint.

The rates shall cover the cost of all operations and materials specified in Subclause 5.5.7 and PSG5-4,2, and detailed on the drawings such as joint filler, dowel bars and tubes, bitumen coats, etc, but excluding water stops or water bars. Water stops and water bars will be measured by length separately for each type.

PSG8.5 **Formwork**

PSG8.5.1 **Edges of Blinding Layer**

No separate payment will be made for formwork to the edge of the blinding layer. The rates tendered for concrete to be blinding layer shall cover the cost of such formwork.

PSG8.5.2 **Kickers**

Formwork to the edges of kickers will be measured as plain vertical or plain circular as applicable (not as narrow widths).

PSG8.6 **Unformed Surface Finishes (Subclause 8.4.4)**

The rates for unformed surface finishes shall cover the cost of providing the respective surface finish as specified in PSG5-6.

PSG8.7 **Holding Down Bolts**

Fixing of holding down bolts will be measured by number. The rate shall cover the cost of all things necessary to ensure that the bolts are effectively and rigidly held in position during casting, complete with sleeved pockets, all as detailed on the drawings.

PSG8.8 **Grouting**

Grouting of base plates and equipment bases will be measured by the volume of grout used.

The rate shall cover the cost of the supply and floating in the grout under the plates to ensure solid and complete filling of the gap.

PSG8.9 **Items cast in concrete**

Items cast in concrete will be measured by number separately for each type of item.

Notwithstanding Sub clause 8.2.6, the rate shall cover the cost of fixing in position and casting in the item as construction proceeds, irrespective of whether the Contractor chooses to fix the item in the formwork and cast it in directly or to box out a hole and group the item in subsequently.

The item will be measured and paid separately.

PSH **STRUCTURAL STEEL WORK (SANS 1200 H)**

PSH3 **Materials**

PSH3-1 **Structural Steel.** (Sub-clause 3.1.1)

Grade S355JR steel shall be used for all structural steelwork.

PSH3-3 **Bolts**

All nuts, bolts and washers used shall be of ISO Metric Grade 8.8 mild steel unless otherwise specified as per SABS 135 :1989.

PSH5 **Construction**

PSH5-1 **Welders** (Sub-clause 5.3.5)

All welding shall be done by, or under the direct supervision of coded welders.

PSH5-2 **Shop Details**

The Contractor shall provide shop details, in terms of Sub-clause 5.1.2, for the steel superstructure units. The drawings shall be submitted for approval at least 2 weeks prior to commencement of fabrication.

PSH5-3 **Protective Treatment** (Sub-clause 5.3.9)

PSH5-3.1 **Corrosion protection**

Corrosion protection shall be in accordance with SABS 1200 HC as amended in PSHC 5.

PSH5-4 **Erection of Steel Columns**

The steel columns shall be accurately aligned and leveled using a system of locking units to hold the columns in their correct positions.

PSH8 **Measurement and Payment**

PSH8-1 **Structural Steelwork and Corrosion Protection**

Handrails, Walkways and ladders will be measured separately by number, length or area, as scheduled. Structural steelwork will be measured and paid by lump sum. The rates tendered shall include for the production of shop drawings, supply, fabrication, corrosion protection, transportation and erection of the structural steelwork and crawl beams. All plant, labour and materials necessary for the proper completion of the structural steelwork, including fixing it to the concrete plinths, shall be included.

PSL MEDIUM-PRESSURE PIPELINES (SANS 1200 L)

PSL3 MATERIALS

PSL3.1 **General**

The water pipeline shall be the blue uPVC type, class 9 (9 bar) with rubber joints (Z-joints). **"No joints may be glued or welded**; Proof of SANS certificates must be provided beforehand in which the quality of the pipes is confirmed. Quantities of different types and classes of pipe must be confirmed with the Engineer before final quantities are ordered.

PSL3.3 STEEL-, CAST IRON AND METAL PIPES AND SPECIALS

PSL3.3.1 General

The working pressure for a special shall not be less than the highest working pressure in any adjacent pipe or fitting.

All steel, cast iron and metal parts of pipes and fittings which are installed underground must be wrapped with "Denso inner and outer uPVC tape" or similar approved material which is approved by the Engineer. All steel pipe pieces which are provided with screw-thread must be produced from stainless steel type 316.

All steel pipes and steel accessories shall be "hot dip galvanised" as by the standard SANS 763 specifications prescribed.

PSL3.8.3 Flanges and Accessories

Add the following:

Flanges shall comply with SABS 1123 and have a minimum working pressure of 1 600 kPa, except where otherwise indicated. Holes shall be drilled to Table 16 SABS 1123.

Any item of pipe work or special or valve, of which the flanges are incorrectly drilled, will be rejected. The reaming of bolt-holes to oversized dimensions to enable a particular item to fit will not be allowed.

All flanges shall be provided complete with bolts, nuts, washers and rubber O-rings or fibre insertions, as appropriate. Compressed asbestos fibre insertions shall be not less than 1, 5 mm thick and shall comply with BS 2815 Grade B.

PSL3.8.4 **Loose Flanges**

Add the following:

"Bolts and nuts must be of electroplated steel type and must comply with the applicable requirements of SANS 135."

PSL4 **PLANT**

PSL 4.3 TESTING

PSL 4.3.1 Add the following:

The contractor must see to it that all test apparatus must be in a safe working condition. Calibration certificates of the pressure meters must be provided before any tests are accepted. The contractor must make his own arrangements to get water for testing. All water costs for testing purposes must be included in the rate for the installation of the pipes.

PSLB **BEDDING (PIPES) (SANS LB)**

PSLB3 **MATERIALS**

PSLB3.1 **Bedding (Sub Clause 3.3)**

The bedding will be of the Class C type. Bedding and Blanket materials will only be imported if the materials from excavation are not suitable.

PSLB8 **MEASUREMENT AND PAYMENT**

PSLB8.1 **Volume of bedding material (Sub Clause 8.1.3)**

The volume of imported bedding material will be measured net, excluding the volume occupied by the pipe.

C3.3.3 PARTICULAR SPECIFICATIONS

C3.3.3.1	PM:	MASONRY
C3.3.3.2	PHS:	HEALTH AND SAFETY SPECIFICATION
C3.3.3.3	SPEC BVMECH01/5:	GENERAL METALWORK
C3.3.3.4	SPEC BVMECH01/6:	MEDIUM PRESSURE PIPEWORK AND VALVES

PM MASONRY

PM 1 Scope

Materials, construction method and workmanship desired for masonry are explained in this section. All activities in connection with masonry and plaster of structures are treated.

PM 2 Material

The building-sand for mortar must comply with specification for sand for concrete, on condition that all the sand can be screened through a 2,4mm screen.

The cement for mortar must comply with the same specification as for cement in concrete.

Quality bricks should be thoroughly burnt to be hard and durable. A hard ringing sound emitted when two bricks are struck together, indicates that bricks were well burnt. The bricks should be true to size and shape, with straight edges and even surfaces. Bricks must comply with the requirements as stipulated in the latest edition of SABS 227.

Platforms for mixing, wheel barrows and pans which come in contact with the mortar must be clean, watertight and none absorbed before any mortar is placed on or in it.

PM 3 Brickwork

All brickwork must be done in English Bond and no false headers may be used.

Bricks must be soaked in water before immediate use and the previous layer must also be well wet before the next layer is mortared. Bricks must be well embedded in the mortar and all the joints of each layer of bricks must be well cocked. Joints may under no circumstances be thicker than 10mm and all vertical joint and corners must be plumb.

PM 4 Mortar

Measurements for mixing of mortar must be done volume units. Five units of sand to one unit of Portland cement for masonry and plaster of walls and three units of sand to one unit of Portland cement for the plaster of concrete ceilings and beams, if not otherwise stipulated.

The ingredients must be dry mixed until the mixture is uniform in colour and appearance. There after water must be added with fine spray and the ingredients must be thoroughly mixed.

PHS HEALTH AND SAFETY SPECIFICATION

CONTENTS

SPEC BVH&S000 DEFINITIONS AND ABBREVIATIONS

"**Act**" –means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

"**Agent**" –means a competent person who acts as a representative for a client;

"**Client**" –means any person for whom construction work is performed;

"**Construction manager**" means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

"**Construction site**" means a work place where construction work is being performed;

"**Construction supervisor**" means a competent person responsible for supervising construction activities on a construction site;

"**Construction work**" means any work in connection with -

(a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
(b) the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
(c) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

"**Contractor**" –means an employer, as defined in section 1 of the Occupational Health and Safety Act, who performs construction work and includes principal contractors;

"**Designer**" means-

(a) a competent person who-
    (i) prepares a design;
    (ii) checks and approves a design;
    (iii) arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
    (iv) designs temporary work, including its components;
(b) an architect or engineer contributing to, or having overall responsibility for a design;
(c) a building services engineer designing details for fixed plant;
(d) a surveyor specifying articles or drawing up specifications;
(e) a contractor carrying out design work as part of a design and building project; or an interior designer, shop-fitter or landscape architect;

"**Health and Safety File**" –means a file, or other record containing the information by the Construction Regulations;

"**Health and Safety Plan**" –means a site, activity or project specific documented plan in accordance with the client's health and safety specification;

"**Health and Safety Specification**" –means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;

"**Method Statement**" –means a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

"**Principal contractor**" –means an employer appointed by the client to perform construction work;

"**Risk Assessment**" –means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.

SPEC BVH&S001 BACKGROUND

This part of the specification has the objective to assist principal contractors entering into contracts with Prince Albert Municipality that they comply with the Occupational Health and Safety (OH&S) Act, No. 85 of 1993.

Compliance with this document does not release the principal contractor from complying with minimum legal requirements and the principal contractor remains accountable for the health and safety of his employees and those of his mandatories. Principal and other contractors should therefore insist that this portion of the specification form part of any contract that he may have with other contractors and/or suppliers.

This section is the health and safety specification that addresses all aspects of occupational health and safety as affected by this contract. It provides the requirements that principal contractors and other contractors shall comply with in order to reduce the risks associated with this contract that may lead to incidents causing injury and/or ill health.

The Occupational Health and Safety Act, 1993 (Act No 85 of 1993) together with its applicable Regulations ('the Act') forms part of this Health and Safety Specifications. Any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned to it unless the context otherwise indicates.

SPEC BVH&S002 SCOPE OF WORK

2.1 GENERAL DESCRIPTION OF WORKS:

The NAMA KHOI MUNICIPALITY intends to upgrade its Nababeep Wastewater Treatment Plant in Nababeep. This contract comprises Civil, Mechanical and Electrical Works. The Contract entails the following:

- Construction of a new reinforced concrete structure to accommodate two Archimedes Screw Lifting Pumps
- Construction of a new reinforced concrete above-ground Inlet works, comprising hand-raked screens, grit channels and a flow measuring facility.
- Demolition of existing primary pump station top structure and refurbishment of two self-priming lift pumps complete with piping and switchgear.
- Refurbishment of several reinforced concrete structures such as Clarigestors, Biological Filter basins, Clarifiers, etc. (crack repairs, sealing, etc)

- **SPEC BVH&S003 THE PRINCIPAL CONTRACTOR'S GENERAL DUTIES**

The Principal Contractor's general duties in terms of this Health and Safety Specification are, but not limited to, the following:

7. (1) A principal contractor must-

(a) provide and demonstrate to the client a suitable, sufficiently documented and coherent site-specific health and safety plan, based on the client's documented health and safety specifications contemplated in regulation 5(1)(b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;

(b) open and keep on site a health and safety file, which must include
all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's agent or a contractor; and

(c) on appointing any other contractor, in order to ensure compliance with the provisions of the Act-

(i) provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in regulation 5(1)(b) pertaining to the construction work which has to be performed;

(ii) ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;

(iii) ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;

(iv) ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;

(v) appoint each contractor in writing for the part of the project on the
construction site;

(vi) take reasonable steps to ensure that each contractor's health and safety plan contemplated in subregulation (2)(a) is implemented and maintained on the construction site;

(vii) ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;

(viii) stop any contractor from executing construction work which is not in accordance with the client's health and safety specifications and the
principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;

(ix) where changes are brought about to the design and construction, make available sufficient health and safety information and appropriate resources to the contractor to execute the work safely; and

(x) discuss and negotiate with the contractor the contents of the health and safety plan contemplated in subregulation (2)(a), and must thereafter finally approve that plan for implementation;

(d) ensure that a copy of his or her health and safety plan contemplated in paragraph (a), as well as the contractor's health and safety plan contemplated in subregulation (2)(a), is available on request to an employee, an inspector, a contractor, the client or the client's agent;
(e) hand over a consolidated health and safety file to the client upon completion of the construction work and must, in addition to the documentation referred to in subregulation (2)(b), include a record of all drawings, designs, materials used and other similar information concerning the completed structure;
(f) in addition to the documentation required in the health and safety file in terms of paragraph (c)(v) and subregulation (2)(b), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done; and
(g) ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

(2) A contractor must prior to performing any construction work-
(a) provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the client's health and safety specification contemplated in regulation 5(1)(b) and provided by the principal contractor in terms of subregulation (1)(a), which plan must be applied from the date of commencement of and for the duration of the construction work
and which must be reviewed and updated by the contractor as work progresses;
(b) open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, and which must be made available on request to an inspector, the client, the client's agent or the principal contractor;
(c) before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
(d) co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act; and
(e) as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, 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.
(3) Where a contractor appoints another contractor to perform construction work, the duties determined in subregulation (1)(b) to (g) that apply to the principal contractor apply to the contractor as if he or she were the principal contractor.
(4) A principal contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.
(5) No contractor may allow or permit any employee or person to enter any site, unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

(6) A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

(7) A contractor must at all times keep on his or her construction site records of the health and safety induction training contemplated in subregulation (6) and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor;.

(8) A contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

SPEC BVH&S004 OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

4.1 Structure and Organization of OH&S Responsibilities

4.1.1 Overall Supervision and Responsibility for OHS

- The Client to ensure that the Principal Contractor, is appointed in terms of Construction Regulation 5(1)(*k*), implements and maintains the agreed and approved OH&S Plan.
- The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that his Employees (as defined in the Act) complies with the Act. Legal Compliance Audit may be used for this purpose.
- Any OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms
- The Construction Manager, Assistant Construction Manager, Supervisor and Assistant Construction Supervisor/s to be appointed in terms of Construction Regulation 8.
- A Full-Time Safety Officer must be appointed in terms of Construction Regulation 8 and must be registered with the SACPCMP

4.1.2 Additional (Specific) Responsibilities for OHS

The contractor shall note that it is a generic list only and is intended for use as a guideline.

Appointment	**Section/Regulation**
OH&S Committee	(OHS Act Section 19)
OH&S Representatives	(OHS Act Section 17)
Construction Manager	(Construction Regulation 8(1))
Construction Supervisor	(Construction Regulation 8(7))`
Construction Health and Safety Officer	(Construction Regulation 8(5))
Risk Assessor	(Construction Regulation 9)
Fall Protection Plan Developer	(Construction Regulation 10)
Structures Supervisor/Inspector	(Construction Regulation 11)
Temporary Works Supervisor	(Construction Regulation 12)
Excavation Supervisor	(Construction Regulation 13)

Scaffolding Supervisor	(Construction Regulation 16)
Scaffolding Inspector / Erector	(Construction Regulation 16)
Bulk Mixing Plant Supervisor	(Construction Regulation 20)
Crane Inspector	(Construction Regulation 22)
Construction Vehicles/Mobile Plant Supervisor	(Construction Regulation 23)
Drivers/Operators of Construction Vehicles/Plant	(Construction Regulation 23)
Electrical Installation and Appliances Inspector	(Construction Regulation 24)
Emergency/Security/Fire Coordinator	(Construction Regulation 29)
Fire Equipment Inspector	(Construction Regulation 29)
Water Environment Supervisor	(Construction Regulation 26)
Housekeeping Supervisor	(Construction Regulation 27)
Stacking & Storage Supervisor	(Construction Regulation 28)
Pressure Equipment Supervisor	(Pressure Equipment Regulation)
First Aider	(General Safety Regulation 3)
Ladder Inspector	(General Safety Regulation 13A)
Incident Investigator	(General Admin Regulation 9)
Machinery Supervisor	(General Machinery Regulation 2)
Hazardous Chemical Substances Supervisor	(HCS Regulations, CR 25)

Above appointments shall be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information shall be communicated and agreed with the appointees.

The principal contractor shall, furthermore, provide Prince Albert Municipality with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated and prominently displayed on site.

4.2 Communication & Liaison

4.2.1 OH&S Liaison between the Employer, the Principal Contractor, the other Contractors, the Designer and other concerned parties shall be through the H&S Committee as per the procedures determined by the H&S Committee.

4.2.2 In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.

4.2.3 Consultation with the workforce on OH&S matters will be through their Supervisors and H&S Representatives ('SHE – Reps')

1.2.4 The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and/or its Agent on its behalf and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

4.3 OH&S File

The Principal Contractor must, in terms of Construction Regulation 7(1)(b), keep a health & safety file on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done.

4.3.2 The following documents must inter alia be kept in the OH&S file:

- Construction Work Permit (Construction Regulation 3.)
- Copy of Principal Contractor's Health & Safety Plan
- Copy of OH&S Act (updated) (General Administrative Regulation 4.)
- Proof of Registration and good standing with a COID Insurer - Construction Regulation 5(1)(j)
- OH&S Plan agreed with client including the underpinning Risk Assessment/s & Method Statements (Construction regulation 5(1)(l))
- Designs/drawings (Construction Regulation 6&7)
- A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 7)
- Appointment/Designation forms as per 4.1.2 above & as per OHS Act.
- Competency Certificates
- Occupational Medical Certificates of all personnel working on site to proof Fitness to work
- Registers as follows:
    - Accident/Incident Register
    - Annexure 1 of the General Administrative Regulations
    - OH&S Representatives Inspection Register
    - Temporary Works
    - Excavations Inspection
    - Water Environment Inspections
    - Fall Protection / Prevention Equipment
    - Arc & Gas Welding & Flame Cutting Equipment Inspections
    - Construction vehicles & Mobile Plant Inspections
    - Electrical Installation and –Machinery Inspections
    - Fire Equipment Inspection & Maintenance
    - Lifting Tackle and Equipment Inspections
    - Inspection of Lifting Machinery
    - Inspection of Ladders
    - Inspection of Pressure Equipment
    - First Aid Boxes
    - Personal Protective Equipment
    - Portable Electrical Equipment
    - Pressure Equipment
    - Hand Tools

4.4. OHS Goals and Objectives and Arrangements for Monitoring and Review of OHS Performance

The Principal Contractor is required to maintain an acceptable disabling incident frequency rate (DIFR) and report on this to the Client and/or its Agent on its behalf on a monthly basis.

4.5. Identification of Hazards and Development of Risk Assessments, Standard Working Procedures (SWP) and Method Statements

The Principal Contractor is required to develop Risk Assessments, Standard Working Procedures (SWP) and Method Statements for each activity executed in the contract or project (See Section 5 below "Project/Site Specific Requirements")

4.6. Arrangements for Monitoring and Review

4.6.1. *Monthly Audit by Client*

The Client and/or Agent on its behalf will be conducting monthly Audits to comply with Construction Regulation 5(1)(o) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

4.6.2. *Other Audits and Inspections by Client*

The Client and/or Agent reserve the right to conduct other ad hoc audits and inspections as deemed necessary.

4.6.3. A representative of the Principal Contractor must accompany the Client and/or Agent on all Audits and Inspections and may conduct his/her own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results.

4.6.4. *Reports*

4.6.4.1 The Principal Contractor is required to provide the Client with a monthly report.

4.6.4.2 The Principal Contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- dies
- becomes unconscious
- loses a limb or part of a limb
- is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

or where:

- a major incident occurred
- the health or safety of any person was endangered
- where a dangerous substance was spilled
- the uncontrolled release of any substance under pressure took place
  - machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- machinery ran out of control to the Provincial Director of the Department of Labour within seven days. (Section 24 of the Act & General Administrative Regulation 8.)

4.6.4.3. The Principal Contractor is required to provide the Client with copies of all statutory reports required in terms of the Act. The Principal Contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports.

4.6.5. *Review*

4.6.5.1 The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

4.6.5.2 The Principal Contractor must provide the Client, other Contractors and all other concerned parties with copies of any changes, alterations or amendments.

4.7 Site Rules and other Restrictions

4.7.1 Site OH&S Rules

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the OH&S aspects of the construction.

4.7.2. *Security Arrangements*

4.7.2.1 The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees will not be allowed on site unaccompanied.

4.7.2.2 The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period.

4.7.2.3 The Principal Contractor must appoint a competent Emergency Controller who must develop emergency contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a monthly practice/testing programme for the plans e.g. January: trench collapse, February: Falling from heights, etc. and practiced/tested with all persons on site at the time, participating.

4.8 Training

The contents and syllabi of all training required by the Act and Regulations including any other related or relevant training as required must be included in the Principal Contractor's Health and Safety Plan and Health and Safety File.

4.8.1 General Induction Training

All employees of the Principal and other Contractors to be in possession of proof of General Induction training

4.8.2 Site Specific Induction Training

All employees of the principal and other Contractors to be in possession of Site Specific OH&S Induction training.

4.8.3 Other Training

4.8.3.1 All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of Competency Certificates & Medical Certificates of Fitness (Construction Regulation 23).

4.8.3.2 All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training.

4.8.3.3 OH&S Training Requirements: (as required by the Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- General Induction (Section 8 of the Act)
- Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- Site/Project Manager
- Construction Supervisor
- Health and Safety Officer
- OH&S Representatives (Section 18 (3) of the Act)
- Training of the Appointees
- Working near or on water

- Operation of Cranes (Driven Machinery Regulations 18 (11)
- Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 23)
- Basic Fire Prevention & Protection (Environmental Regulation 9 and Construction Regulation 29)
- Basic First Aid (General Safety Regulations 3)
- Storekeeping Methods & Safe Stacking (Construction Regulation 28)
- Emergency, Security and Fire Co-ordinator
- Work and appointment Related training

4.9. Accident and Incident Investigation

4.9.1 The Principal Contractor is responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9)

4.9.2. The results of the investigation to be entered into the Accident/Incident Register Annexure 1) (General Administrative Regulation 9)

4.9.3. The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

4.9.4. The Principal Contractor is responsible for the investigation of all accidents on Construction Site and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

4.10 OHS Representatives and Committees

4.10.1 *Designation of OHS Representatives*

4.10.1.1 Where the Principal Contractor employs more than 20 persons (including the employees of other Contractors (sub-contractors) he has to appoint one OHS Representatives for every 50 employees or part thereof. General Administrative Regulation 6 requires that the appointment OR election and subsequent designation of the OHS Representatives are executed in consultation with Employee Representatives or Employees. (Section 17 of the Act and General Administrative Regulation 6 & 7.)

4.10.1.2 OHS Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

4.10.2 ***Duties and Functions of the OHS Representatives***

4.10.2.1 The Principal Contractor must ensure that the designated OHS Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor.

4.10.2.2 OHS representatives must be included in accident/incident investigations.

4.10.2.3 OHS representatives must attend all OHS committee meetings.

4.10.3. *Appointment of OHS Committee*

4.10.3.1 The Principal Contractor must establish an OHS Committee consisting of all the designated OHS Representatives together with a number of management representatives that are not allowed to exceed the number of OHS representatives on the committee. The members of the OHS committee must be appointed in writing.

4.10.3.2. The OH&S Committee must meet minimum monthly and consider, at least, the following Agenda:

1) Opening
2) Previous Minutes
3) Observations
4) Program and Safety considerations
5) Occupational Health
6) Housekeeping improvement
7) Occupational Hazards / Risks on Project
8) Incidents & Accidents / Injuries
9) Equipment Registers
10) Safety performance Evaluations
11) Occupational Hygiene monitoring and measuring
12) Education & Safety promotion program
13) General
14) Date of Next Meeting
15) Closing

4.11 Occupational Medicals – Principal Contractor must ensure that all employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner as per Annexure 3 of Construction Regulation, 2014 - Construction Regulation 7(1)(g)

SPEC BVH&S005 PROJECT/SITE SPECIFIC REQUIREMENTS

5.1 The following is a list of specific activities and considerations that have been identified for the project and site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor:

- Clearing and Grubbing
- Earthworks
- Site Establishment
  - Offices
  - Secure / safe storage for materials, plant and equipment
  - Ablutions & Sheltered eating areas
  - Vehicle access to the site
- Location & Dealing with existing structures
- Installation and Maintenance of temporary construction electrical supply
- Adjacent land uses / surrounding property exposures
- Boundary and access control public liability exposures
- Health risks arising from neighbouring as well as own activities
- Exposure to noise & vibration
- Protection against dehydration and heat exhaustion
- Protection from wet and cold conditions
- Dealing with HIV/Aids and other diseases
- Use of portable electrical equipment
- Excavations including:
  - Ground/soil conditions
  - Trenching
  - Shoring
  - Drainage
  - Daily inspections
- Welding
- Loading and offloading of trucks
- Aggregate/Sand and other Materials Delivery
- Driving and operation of construction and mobile plant
- Mobile cranes and the ancillary lifting tackle
- Use and storage of flammable liquids and other hazardous substances
- Layering and bedding of trench floor
- Installation of Pipes in trenches
- Installation of bends, valves, air valves, non-return valves etc. as per bill of quantities, drawings, and specifications,
- As discovered by the principal contractors hazard identification exercise
- As discovered from any inspections and audits conducted by the client or by the principal contractor or any other contractor on site.
- As discovered from any accident / Incident Investigation

The following are in particular requirements depending on scope of works and will form a basis for compliance audits.

1. Administrative & Legal Requirements
2. Education, Training & Promotion
3. Public Safety & Emergency Preparedness
4. Personal Protective Equipment
5. Housekeeping
6. Scaffolding, Formwork & Support work
7. Ladders
8. Electrical Safeguarding
9. Emergency/Fire Prevention & Protection
10. Excavations & Demolition
11. Tools
12. Cranes
13. Personnel & Material Hoists
14. Transport & Materials Handling
15. Site Plant & Machinery
16. Plant & Storage Yards/Site Workshops Specifics
17. Health & Hygiene

SPEC BVMECH01/5: GENERAL METALWORK

1. SCOPE

This Specification covers the requirements for the supply, detailing, fabrication, delivery, erection, testing and maintenance of all steelwork and aluminum in the Contract.

2. DESIGN, MATERIALS AND MANUFACTURE

Materials

General

Unless otherwise shown on the drawings or scheduled, all steelwork shall be fabricated from mild steel sections, and all jointing and fixing bolts shall be supplied by the Contractor.

Mild steel

All structural steelwork shall comply with the requirements of BS 4360. The grade of steel used for trusses, bridges and ancillary structures shall be 43A.

Aluminum

All aluminum sheeting shall be Grade M57S material anodized for coastal areas. Structural sections, bolts and nuts, shall be Grade D65S.

Stainless steel

All stainless-steel items shall be Grade 316 material.

Bolts and nuts

Bolts and nuts in their respective sizes shall comply with BS 4190. Bolts shall be of Grade 4.6 and nuts of Grade 4 with threads of the ‘coarse pitch series”.

All nuts and bolts shall be Hot-dip galvanized. Washers shall be provided at each nut and generally shall comply with BS 4320 of “normal” diameter, and shall be coated to match the bolt and nut. Single coil square section spring washers - Metric series (Type A) complying with ES 4464 shall be fitted to all nuts subject to vibration.

High strength friction grip bolts, if used, shall comply with the requirements of BS 3139, and their use and design shall be as specified in ES 3294 (Part 1) and BS 4604.

Manufacture

General

The steelwork shall be constructed, fabricated and erected in accordance with SABS Standard Building Regulations and in accordance with details shown on the drawings.

The Contractor shall prepare his own shop details and other necessary drawings which shall be submitted in duplicate to the Engineer for approval. The Contractor shall include with his shop detail drawings full details as to which welding procedures he proposes to use.

Details are to be submitted at least one month before approval is required and no work is to be carried out until approval is obtained.

The Contractor shall be responsible for all dimensions and details in his working drawings and for the perfect fitting of all material supplied, and he shall replace at his own cost any material which does not fit properly into position.

The checking of detail and working drawings by the Engineer shall not absolve the Contractor in any way from inaccuracies of fitting.

Handrails, ladders, prefabricated flooring, etc

Handrails

Handrails shall be manufactured from steel tubing not less than 34 mm outside diameter for the two rails, and from tube 2.65 µm thick and not less than 42 mm outside diameter for the preformed one piece stanchions. The bases of the stanchions shall be preformed for platform or side and for horizontal or sloped mounting on concrete or steel. The stanchion spheres shall be preformed to suit right angled or other angled intersections all as indicated on the general arrangement drawings. Stanchions shall be spaced at intervals not exceeding 2,0 m and all handrails shall be supplied complete with fixing bolts, nuts, etc.

Where 'heavy duty' stanchions are scheduled, they shall be manufactured from tube 3.24 mm thick and be not less than 48 mm in outside diameter.

General Metalwork

All tubing and stanchions shall be galvanized before erection and all joints shall be welded after erection of handrails. Welded joints shall be repaired with "Metalgalv" or equal as specified. The Contractor shall set and grout in fixing bolts.

Ladders

Ladders shall be manufactured in accordance with the details and general arrangements shown on the drawings in lengths suitable for hot-dip galvanizing. All ladders and their fixings shall be galvanized.

All ladders shall be supplied complete with all necessary bolts, nuts and washers for fixing.

Prefabricated open and chequer plate covers

Open grid steel covers and floor panels shall be pressure locked and welded as 'Maclock" type "Eggcrate" or similar approved, and together with frames shall be hot-dip galvanized to SABS 763 after manufacture.

All span bars shall have a depth of 40 mm and be of such a width and at such spacing that the maximum deflection of any bar under a 10 kN/m^2 uniformly distributed load shall not exceed 1:360 of the clear span.

Under no circumstances will cutting and welding be permitted on Site.

Framing to open grid "Maclock" or "Eggcrate" covers or panels shall be assembled and welded to the detail as shown on the drawings.

Chequer-plate flooring shall be of 6 mm minimum thickness Aluminum "Treadplate" flooring or similar approved with raised 5-bar pattern and lifting key holes at each end of each plate.

Frames shall be of aluminum
angle and bar welded together and as detailed on the drawings.

Welding

All welding of steelwork shall be carried out in accordance with BS 5135. The Contractor shall submit with his shop drawings full details of welding procedures. Unless otherwise approved, no longitudinal or overhead welding shall be carried out on Site. Site welding must be the minimum possible. Welders undertaking manual welding of permanent steelwork shall be experienced competent artisans.

Painting/Protection coating

General and surface preparation

The provisions of SPEC BVMECH01/4 shall apply.

All galvanized items which are intermittently or permanently in contact with sewage shall be feather blasted after galvanizing, The surface shall be moisture-free and free of soluble salts and airborne contaminants, and shall be painted with a twin pack polyamide-cured high build epoxy coating, as specified.

Cast iron items

All cast iron items to be installed underground or not exposed to view shall be twice hot bitumen dipped, using different shading bitumen, inside and outside.

Cast iron items to be cast into Concrete shall be degreased using “Oakite 31” and nylon brushes.

Cast iron items which are intermittently or permanently in contact with sewage shall be blast cleaned and painted with a twin pack polyamide-cured high build epoxy coating as specified.

Cast iron items which are exposed, but not in contact with sewage, shall be wire bush cleaned and degreased. The surface shall be painted with one coat of aluminium barrier coating and finished with universal enamel to give a dry coat thickness of at least 110 micrometres.

Testing and inspection of corrosion protection

To be in accordance with SPEC BVMECH01/4.

3. PLANT

General

The Contractor shall provide all plant that is necessary to install, test and commission all items of equipment covered by this Specification.

4. INSTALLATION AND OPERATING REQUIREMENTS

The general requirements of SPEC BVMECH01, where relevant, shall apply.

5. TOLERANCES

Unless otherwise specified, the terms of SPEC BVMECH01/6 shall apply, where relevant.

6. TESTING/COMMISSIONING

Mild steel

The steel shall be tested in accordance with the relevant clauses of BS 4360 Part 1, at the Contractor's expense.

7. MEASUREMENT AND PAYMENT

General

The prices tendered for the steel items will be held to include for the cost of protective coatings as specified, unless a separate item is scheduled.

Steelwork general

Unless otherwise scheduled, steelwork will be measured by mass of the steelwork as erected, excluding wastage and fastenings.

The rate shall cover the cost of the supply, testing, fabrication, delivery and erection of the steelwork, together with all operations specified and also for the supply and fixing of all anchor/holding down bolts, bolts, nuts, washers and plates.

Where erection of steelwork on Site is measured separately as a lump sum, the sum shall cover the cost of taking delivery on Site, erection, making good and site paintwork and fixing anchor/holding down bolts, etc.

General Metalwork

Handrailing

Handrailing will be measured by the length of the complete balustrade including top rail, middle rail and stanchions. The rate shall cover the cost of all materials and fastenings supplied, for welding, erection and protective coatings.

Ladders

Ladders will be measured by number of specified length. The rate shall cover the cost of all materials and fastening supplied, for welding, erection and protective coatings.

Prefabricated open and chequer plate covers and flooring

The open grid or chequer-plate flooring covers or panels will be measured by area. The rates shall cover the cost of all cutting and welding, etc., at the factory - prior to galvanizing if applicable - and the cost of any protective coatings.

The framing will be measured by length of the edge. The rate shall cover the cost of the supply and fixing complete including all cement mortar and bolts which may be required to secure the frame.

SPEC BVMECH01/6: MEDIUM PRESSURE PIPEWORK AND VALVES

CONTENTS

SPEC BVMECH01/6: MEDIUM PRESSURE PIPEWORK AND VALVES

1. SCOPE

This specification covers the supply and installation of pipework up to DN 1000 mm, for transporting water and sewage under working pressures of up to 2,5 MPa inside pump stations, treatment works and the like.

Definitions
The following definitions shall apply:

Bell hole — An enlarged excavation around a joint on the pipe to give room for workmen to reach the sides and bottom of the pipe.

Bending shoes — Devices used when bending a pipe to prevent crushing and flattening the pipe and to obtain a smooth curve.

Dolly — A device having rollers on which lengths of pipe can be placed, permitting the pipe to be rotated easily to facilitate welding.

Fitting.

a) A special or valve.

b) Any process of jointing (except welding) straight pipes to one another and to specials and valves.

Flexible pipe — A pipe of which the diameter is reduced by more than 1% under an external radial force before the appearance of cracks.

Manual shielded electric arc process welding. (MSEAP)
Electric arc welding done by hand using a filler electrode coated with a material which gasifies at the point of arc and excludes oxygen from the weld, thus improving the metallurgical quality of the completed weld.

Mitre welds — Welds which join two lengths of pipe at an angle point in such a manner that the axis of both lengths of pipe proceed in a straight line to the point of intersection.

Pig, Swab, Scraper
These terms are loosely used interchangeably. Swab, however, is more commonly confined to mean a device passed through the pipeline during construction solely to remove obstacles and foreign matter which are hazards peculiar to construction.
Pig and scraper mean devices for cleaning the pipeline after operations are in progress, for the removal of materials which may accumulate on the inside of the pipe walls during service.

Pinhole — A very small hole indicating a flaw in a weld or coating.

Pipe end bevel — A bevel cut made on the end of a pipe to afford a groove between abutting joints in order to receive weld metal.

Position weld — A weld made under such conditions that the pipe cannot be rotated to keep the welder always working in the same position, as a consequence of which the welder must change positions as his work proceeds around the weld (Stove pipe weld).

Rolling weld — A weld made from one position as the pipe is rotated.

Root or stringer bead.

The first weld bead applied to the joint between two sections of pipe.

Special Any pipe other than a straight pipe.

NOTE: Under this definition shall be included all sizes of specials of shapes such as bends, tees, crosses, angle branches, reducers, tapers and flexible couplings with or without centre registers.

Stove pipe welds A weld made without rotating the pipe, requiring the welder to shift his working position to all quadrants.

Straight pipe A straight pipe of uniform bore and of standard or non-standard length.

Pipework Shall include all pipes, joints, specials, fittings and valves.

Welding icicles Congested droplets of metal which extend through the weld to the interior of the pipe, caused by excessive heat or improper welding technique.

Additional abbreviations

CI: Cast iron
CID : Constant internal diameter
COD : Constant outside diameter
FC : Fibre cement
IRHD : International rubber hardness degrees
DN : Nominal diameter, which shall mean minimum inside diameter of the pipe as scheduled for all pipes over DN 150.
PN: Nominal working pressure
OD : Outside diameter, which shall mean DN + 2 x lining thickness + pipe wall thickness
p.e : Plain-ended
PTFE : Polytetrafluoro ethylene
PVC : Polyvinyl chloride
PVC-U : Polyvinyl chloride - unplasticized
Sa : Followed by a number refers to the relevant part of Swedish Standards SIS 05 59 00.
SS : Stainles steel

2. DESIGN, MATERIALS AND MANUFACTURE

General

Pipes and fittings shall be of the types shown on drawings or scheduled and, unless otherwise required in terms of the Project Specification.All pipes and fittings shall be supplied complete with couplings and jointing material.

Pipeline materials shall be so transported, stored and handled that pipes are not overstressed at any time and fittings are not damaged in any way. All thin-walled, flexible, and soft-coated pipes shall be handled with particular care and shall be so stored that they are not subject to concentrated pressure from stones or other obstructions. Pipes damaged or cracked in any way shall be removed from the Site at no cost to the Employer.

All pipework shall be supported and anchored by civil structures only where it passes through the walls of the building. All other supports and anchors shall be by means of steelwork designed, supplied and erected by the Contractor.

The orientation of pump suction and delivery pipework shall be such as to facilitate maintenance, and designed for minimum head losses, no air traps and to ensure that no stress is placed on the pump flanges.
Under no circumstances shall the suction or discharge manifolds be of a smaller diameter than those shown on the drawings. The flow velocity shall not exceed 1.5 m/s and 2.5 m/s respectively.

Steel pipes, fittings and specials

Unless otherwise scheduled or shown on the drawings, pipes etc., shall be manufactured from grade A steel plate complying with SANS 719.

Welding shall be in accordance with API Std. 1104. (See 5.2.2) or SANS 10044 Part 5 as applicable.

Pipes of nominal diameter up to DN 150
Unless otherwise scheduled or shown on the drawings, steel pipes and fittings up to DN 150 shall be of medium class and screwed, and shall comply with the applicable requirements of SANS 62.

Pipes of DN over 150
Unless otherwise specified, straight piping and specials shall be manufactured to the following dimensions:

Nominal Diameter	Minimum Plate Thickness		Minimum outside diam. Of Steel pipes and specials	
	Pipes (mm)	Specials (mm)	Epoxy Paint lined (mm)	Concrete Lined (mm)
200	4.0	5.0	219.1	219.1
250	4.0	5.0	273.0	273.0
300	4.0	5.0	323.9	323.9
350	4.5	6.0	355.6	375.0
400	4.5	6.0	406.4	430.0
450	4.5	6.0	457.2	480.0
500	5.0	8.0	508.0	530.0
600	6.0	8.0	609.6	640.0
700	6.0	8.0	711.2	740.0
800	8.0	10.0	812.8	845.0
900	8.0	10.0	914.4	945.0
1000	10.0	12.0	1016.0	1050.0
1200	10.0	12.0	1220.0	1255.0
1400	12.0	12.0	1420.0	1460.0
1600	14.0	14.0	1620.0	1665.0

Helically welded pipes will not be permitted inside pump stations or treatment works.

The pipe OD, length and type of joint shall be as specified in the Project Specification and/or as shown on the drawings.

Specials
Specials DN 150 and smaller shall comply with BS 1387.
Specials larger DN 150 shall be manufactured from pipes complying with the sizes stated in the table above. Specials shall be fabricated in accordance with BS 534.
All specials (except flanges) shall be suitable for a working pressure of not less than 2,5 MPa.

Cl pipes, fittings and specials
Cl pipes and flanged fittings shall comply with the applicable requirements of BS 2035.

Pvc-u pipes

PVC-U pipes and fittings shall be fitted with spigot and socket rubber ring joints and shall comply with the relevant requirements of SANS 966-1.

Jointing

Flexible couplings
Except where otherwise specified or scheduled, flexible couplings for plain-ended steel pipes shall be of the slip-on type. A coupling shall be able to withstand a hydrostatic test pressure of twice the working pressure specified for the pipe for which the coupling is required, and coupling flanges shall be capable of withstanding all stresses caused by tightening of the bolts. Rubber rings shall comply with the relevant requirements of SANS 974: Part I and shall have a hardness of 66-75 IRHD.

Flexible couplings shall be supplied complete with all necessary bolts, nuts and rubber jointing rings.

Flanges
The drilling of steel and Cl flanges shall conform to the requirements of SANS 1123 appropriate to the class of pipe specified.

Any item of pipework, special or valve that has flanges which are incorrectly drilled will be rejected. Reaming of bolt holes to oversize dimension in order to make a particular piece fit will not be permitted.

All flanges shall be machined overall with gramophone finish in accordance with SANS 1123.

Flanges for nominal pipe diameters greater than DN 1000 shall have raised faces.

Where the working pressure exceeds 1,6 MPa, and for all diameters of DN 400 and over, flange faces shall be machined in accordance with DIN 2514 specification. Valve faces shall be machined female to receive the rubber ‘0” ring.

Loose flanges
Loose flanges for welding onto steel pipes on Site shall be manufactured from the same steel as is specified for the pipes, and shall be in accordance with SANS 1123. Any item of pipework that is found to have flanges that are incorrectly drilled will be rejected.

All loose flanges shall be suitable for field welding to pipes and specials, and shall conform to API 1104 in respect of attachment.

Gasketing
Each flanged pipe and fitting shall be supplied complete with one insertion piece, of the appropriate diameter, and made of a material that is suitable for the maximum working pressure, such as rubber for small diameter low pressure pipelines or compressed asbestos or other approved material for medium to large diameter and medium to high (2,5 MPa and higher) pressure pipelines, and one set of bolts and nuts.

Unless otherwise specified in the Project Specification, asbestos gaskets, in accordance with BS 2815 Grade B and having a minimum thickness of 2 mm, shall be supplied for working pressures not exceeding 1,6 MPa. Where working pressures exceed 1,6 MPa, rubber “0” rings dimensioned in accordance with DIN 2514 Specification shall be supplied to suit suitably machined flanges.

Bolts and nuts
Bolts and nuts shall comply with the relevant requirements of SANS 1700, or where high strength friction grips are specified in the Project Specification the bolts shall comply with the requirements of BS 3139, and their use and design shall be as specified in BS 3294, Part 1 and BS 4604. Locking devices for nuts shall be provided wherever there is a possibility of the nuts becoming loose during service.

All bolts, nuts and washers shall be hot dip galvanized.

Screw-ended pipes
Screw-ended pipes shall comply with the relevant requirements of SANS 1109. Male ends shall be taper-screwed and female ends shall have parallel threads.

Spigot specials
Each spigotted special shall be supplied with one sleeve coupling (or such other type of coupling as is shown in the drawings) to suit the particular pipe with which the special is to mate. The coupling shall fit the larger end of the barrel in the case of a reducer.

Spigot and socket pipes
Spigot and socket pipes shall be provided with rubber or neoprene sealing rings for forming flexible couplings.

Welding electrodes
The Contractor shall supply all the necessary welding electrodes, which shall be of the shielded type.

Valves
All valves shall be hydraulically tested. Unless otherwise scheduled or shown on the drawings, valves shall comply with the following requirements.

Gate valves
Gate valves shall comply with the following as applicable:

a) for working pressures up to 1,6 MPa and over DN 50 but not exceeding 600 mm shall be of cast iron and shall comply with the relevant requirements of SANS 664;

b) for working pressures over 1,0 MPa and of diameter exceeding DN 600 shall be of cast steel and shall comply with the material and construction requirements of SANS 191 and with dimensional requirements of the approved manufacturer.

c) the outlet connections shall be flanged or spigot plain ended as scheduled;

d) the spindles shall be non-rising and made from either zinc-free bronze, 304 stainless steel or as approved;
e) the spindles shall be fitted with hand wheels;

f) the direction of closing shall be clockwise;

g) the valve design shall be such that it may be opened or closed against the differential pressure specified in the Project Specification or schedule, with an effort applied by one man of 200 N exerted simultaneously with each hand on the rim of a standard handwheel, or on the cross bar of a tee key with hands spaced 900 mm apart (total effort 400 N).

In order to achieve this, gate valves shall be fitted as required with either plain or ball thrust bearing, spur gearing and close-machined channel guides and shoes;

h) for working pressures above 1,0 MPa and valves of DN 250 and under, and all valves of DN 300 and over, valves shall be fitted with a spur reduction gear having an advantage of not less than 2:1;

i) for working pressures above 1,0 MPa valves shall be fitted with ball-bearing spindle thrust collars;

j) i) the seat rings shall be pinned, and manufactured from either phosphor bronze, 304 stainless steel or as approved;

ii) alternatively resilient seal valves (RSV) may be offered unless excluded in the Project Specification.

The gate of the RSV shall be completely covered by natural or an approved neoprene rubber to a minimum thickness of 1 mm and pinhole free;

k) i) the gland packing shall be lubricated and graphited cotton packing ;

ii) two rubber “0” seal rings of an approved design shall be provided;

l) the design of all valves shall be such that they may be mounted vertically;

m) flanged valves shall be drilled off-centre, and

n) electrically operated actuators, where specified in the Project Specification, shall comply with (e).

Butterfly valves

Butterfly valves for working pressures exceeding 2,5 MPa shall comply with the requirements of the Project Specification. Valves for working pressures up to 2,5 MPa shall comply with the relevant requirements of BS 5155 and the following:

a) The valve shall:

i) be manufactured from materials as specified in Table 3 of BS 5155;

ii) be suitable for connecting to pipe flanges by individual bolting;

iii) have a replaceable stainless steel or zinc-free, phosphor bronze seat mechanically fixed to the body and a resilient rubber or neoprene seal, replaceable and adjustable on site, mechanically fixed to the edge of the disc;

iv) be suitable for flow in either direction, capable of use as a regulating valve and shall shut off drop tight, and have a maximum working pressure as stated in the Project Specification;

v) be clockwise closing;

vi) be designed for installation with the main shaft horizontal and the operating shafts vertical;

vii) be designed such that it may be opened or closed against the differential pressure specified in the Project Specification or scheduled, with an effort not exceeding 250 N on the handwheel in the case of valves up to 300 mm in diameter, and not exceeding 400 N on the handwheel in the case of larger valves;

b) the seal retaining rings and screws shall be of an approved stainless steel or zinc-free, phosphor bronze;

c) the main shaft shall be offset from the centreline of the disc so as not to pass through the seal;

d) the body ends shall be flanged and drilled in accordance with the flange specification and off-centreline;

e) the valves shall be fitted with actuators which shall:

i) not be an integral part of the main body but shall be a separate unit bolted to the main body in such a manner that water leaking past the main shaft seal is prevented from entering the actuator;

ii) be fitted with a horizontally mounted handwheel at a height that provides for reasonable operation under the conditions shown on the drawings;
iii) comply with Section 11 of AWWA C 504, and shall be capable of opening and closing torques at least 30% in excess of the necessary under the working conditions stated in the Project Specification, and

f) the valve assembly shall be protected against corrosion.

Each valve shall be supplied with a certificate certifying that it complies with the requirements of this specification and that it has been tested and inspected in terms of BS 5155.

Check valves
Check valves shall be so designed that they perform in the manner, and fulfil the requirements set out in the Project Specification. The valve shall be suitable for horizontal or vertical mounting, of robust construction, and shall close drop tight at the required operating head. Access to the moving parts shall be possible without removing the valve from the line. In addition, the following shall apply:

a) For flanged check valves:

i) the valve shall be double flanged;

ii) the body, cover and door shall be of close-grained cast iron;

iii) the door shall be fitted with a zinc-free phosphor-bronze face closing on a corresponding bronze face in the body, and

iv) the door suspension lugs shall be hinged on a long zinc-free, phosphor-bronze spindle supported in trunnion bearings on both sides of the body;

b) For wafer type spring check valves:

i) the discs shall be either stainless steel or carbon steel with resilient seats, and

ii) the valve bodies shall be manufactured of the materials specified.

Air valves for water
Air valves for water shall be Vent-O-Mat type RBX or equal approved.

a) The body for all types of air valves shall be:

i) for working pressures up to 2,5 MPa, cast iron or stainless-steel cylindrical body with ends that conform with the relevant clauses of BS 1452 for Grade 220, and

ii) for working pressures exceeding 2,5 MPa, cast steel.

b) Each air valve shall be supplied with:

i) a bronze isolation cock, (for DN 25 valves only), and

ii) flanged isolating RSV gate valve , and with or without bevel gears and spindle cap or handwheel as specified, or for operation in the manner specified in the Project Specification.

c) Each double or multiple orifice air valve (flanged) shall be fitted with a suitable drain cock to release the pressure inside the valve when the isolating valve is closed at a time when the float is sealing the large orifice.

d) Unless otherwise specified in the Project Specification, single, small orifice air valves shall be capable of releasing automatically under normal operating pressure and conditions any air entrapped in the pipeline, and shall be of the lever type with a 316 stainless steel ball.

e) Triple orifice air valves shall be provided with cast iron shield plates so designed as to prevent the entry of dirt when the large orifice is open.

Air Valves for sewer rising main
Air valves for sewers shall be Vent-O-Mat type RGX or equal approved.

a) All materials used in the manufacture of the valve shall be so compatible as to reduce corrosion and electrolytic action to a minimum. The end covers shall be FBE painted.

b) The valve shall be constructed of close-grained cast iron;

c) The valve body shall be contoured to ensure that there are no corners or rough surfaces to which solids may adhere;

d) Two wash-down sludge plugs for cleaning and inspection shall be provided.

e) All mechanisms shall be totally enclosed;

f) The seat profiles of the three orifices shall be such that the valves are gas-tight at pressure not exceeding 50 kPa.

g) The valve seats shall be readily accessible for cleaning and inspection on removal of the cover bolts;

h) The head casting shall be specially strengthened and dimensioned to receive a vertical vent pipe, if required subsequently;

i) The operation of the valve shall be such that the sewage never comes into contact with the plastic cylindrical floats or valve seats.

Pressure gauges
Pressure gauges shall be fitted to the pipework as shown on the drawings or as specified in the Project Specification.
These gauges shall be as specified in the Project Specification.

Corrosion protection

Pipework, specials, valves and pumps
Corrosion protection shall be in accordance with the requirements of the Project Specification and shall generally be protected as detailed in the clauses of SPEC BVMECH01/4

Protection against electrolytic corrosion
External protection against electrolytic corrosion, consisting of an extruded sheath of polyvinyl chloride or polyethylene, an impervious adhesive plastic tape or petroleum- based impregnated tape or other approved insulating material, shall be applied where required in terms of the Project Specification.

Flexible couplings
Flexible couplings for steel pipes shall be thoroughly cleaned and then treated as specified in the Project Specification.

Bolts, etc
Mild steel bolts, nuts and washers for joints shall be thoroughly cleaned and hot dip galvanized unless another means of corrosion protection is specified in the Project Specification.

Corrosive soil
Where scheduled or ordered, steel or cast iron fittings and joints that are to be subjected to corrosive soil conditions shall be wrapped with an approved plastic tape or protected with other scheduled or approved materials.

3. PLANT

Setting out
The Contractor may use any acceptable device to control the alignment and installation of pipework and valves.

Temporary supports
The Contractor shall provide such temporary supports as are necessary, in the vicinity of the position of permanent supports, to ensure that pipework and valves are installed true to level and alignment.

Handling and rigging
The plant and rigging equipment used by the Contractor for the handling and placing of pipes and valves shall be such that no pipe shell or valve casing is over-stressed during any operation covered by the specification.

Testing
The Contractor shall provide the pump, pressure gauges, etc, as well as the necessary tools and fittings required for the performance of the tests required.

Welding equipment
The Contractor shall supply all welding equipment, generators, clamps, dollies, swabs and other equipment and labour required.

Welding machines shall be operated within the amperage and voltage recommended for each size and type of electrode, Any equipment which does not meet the requirements shall not be used until it has been repaired or alternatively replaced.

4. INSTALLATION AND OPERATING REQUIREMENTS

Installation and laying

Inside structures
All pipework shall be installed and supported to even grades and to the levels and alignments shown on the drawings or as directed. Both the suction and discharge piping shall be supported over the pumps with rigid supports and/or anchors to prevent strain from the pipework acting directly on the pumps.

Outside structures

General
Pipes outside structures shall be laid to even grades and with a cover of 800mm or such other cover as is directed or shown on the drawings. Where so required, slight misalignment may be taken up by deflection at pipe joints, but the deflection shall not be greater than the deflection recommended by the manufacturer of the pipe.

Where site welding of joints is approved bell holes shall be provided at each joint.

Pipe trenches shall be kept free of water from the time that laying commences until backfilling has been completed.

Should it be necessary to cold bend steel pipes on site, the Contractor shall employ bending shoes. The minimum radius allowed will be 20 times the pipe O.D.

Minimum clearance between pipes
The minimum clearance between the outside of a pipeline being laid and the outside of any other pipe that it crosses shall be 150 mm. Where this requirement conflicts with other requirements, the Contractor shall ask the Engineer for written instructions and shall carry out the work in accordance with those instructions.

Damage
Each pipe and each fitting shall be thoroughly cleaned and carefully examined for damage and defects immediately before laying. Should any damaged or defective pipe or fitting be laid, it shall be removed and replaced at the Contractor's expense and to the satisfaction of the Engineer.

Keeping pipelines clean
Every reasonable precaution shall be taken to prevent the entry of foreign matter and water into the pipe(s). At any time when work is suspended for a significant period, the last laid section of each pipe shall be plugged, capped, or otherwise tightly closed until laying is recommenced. All pipes shall be swabbed as work proceeds.

Jointing

Flanges (steel pipelines)
In the jointing of steel pipes with flanges, special care shall be taken to align, grade, and level the pipes, specials, and valves to avoid straining of the flanges. All bitumen shall be removed from the face of each flange immediately prior to jointing (epoxy paint need not be removed). Insertion pieces shall comply with the applicable requirements and form a continuous ring(s) between the flanges. In the case of small diameter flanges, accurately cut holes shall be provided for the bolts. All threads shall be oiled with an approved lubricant during erection to ensure ease of removal during maintenance.
Bolts shall be tightened up evenly in opposite pairs to ensure uniform bearing on the insertion. Care shall be taken to avoid damage to the internal and external surfaces of the pipes during assembly of the pipeline.

Wherever loose flanges are welded onto pipelines, the Contractor shall ensure that internal and external coatings are restored so that they comply in all respects with the specification for such coating and are soundly bonded to the existing coatings. All pipes and specials, whether flanged or not, shall be supplied complete with all jointing materials, bolts and nuts necessary to make and complete all joints.

Welding (steel pipelines)
Unless otherwise approved, all welding done by hand shall be MSEAP welding, and done in accordance with API Std. 1104.

Pipes shall be manufactured by an approved automatic submerged-arc welding process or shall be electric resistance welded. Where automatic submerged-arc welding is employed, at least one pass shall be made on the inside and at least one pass on the outside.

The number of longitudinal weld seams shall not exceed one seam for pipes up to DN 1000. Field welding will not be permitted without the Engineer's prior approval, which will be granted only where the Contractor describes fully the method to be employed in making good the lining and coating at each weld. The Contractor shall guarantee that the quality of the repairs to the protective coating and linings is equal to the original protective system.

Field welding of steel pipelines shall comply with the relevant requirements of API Std. 1104. Each welder shall have a unique number with which he shall mark each joint welded by him, so that it can be identified. Before welding, all foreign matter shall be removed from the pipe ends. If any of the pipe ends are damaged to the extent that satisfactory welding contact cannot be obtained, the damaged pipe ends shall be cut and bevelled with an approved bevelling machine to the Engineer's approval. Should laminations, split ends, or other defects in the pipe be discovered, the joint containing such defects shall be cropped, repaired or

removed from the pipeline as ordered by the Engineer. All repairs shall be done at the Contractor's expense.

The space between abutting pipe-ends, when aligned for welding, shall be such as to ensure complete penetration without burn-through. For pipes having the same dimensions, the spacing shall be approximately 1.5 mm. The alignment of the abutting pipe-ends shall be such as to minimise the offset between pipe surfaces. Internal lineup clamps shall be used whenever practicable. External line-up clamps shall be used where it is impracticable to use internal line-up clamps.

At the discretion of the Engineer, roll welding will be permitted provided proper arrangements are made to maintain the alignment between adjacent pipes being welded.

Where spigot and socket joints are approved, field welding will be permitted. An approved epoxy mortar shall be applied to the inside of the socket in such a manner that the whole space between the spigot and socket is filled to prevent the ingress of water. The filler and finish weld beads shall be deposited by an acceptable method and each filler bead shall be approximately 3 mm in thickness. Completed welds shall have a reinforcing of 1,2 mm ±0,3 mm above the pipe surface around the entire perimeter of the weld, and the width of the finish bead shall not be more than 3 mm greater than the original groove. Each weld shall consist of at least three (3) beads. No two beads shall be started at the same point. In the case of spirally welded pipe the reinforcing may be increased to 2.5 mm ± 0.5 mm.

No mitre welds will be permitted on site (only at the manufacturer's works), and all welds shall be at ninety degrees (90º) to the axis of the pipe. All slag and scale shall be removed from each bead for visual inspection immediately after each bead has been run.

Welding will not be permitted when in the opinion of the Engineer the quality of the completed weld may be impaired by the prevailing weather conditions, including, but not limited to, air-borne moisture, blowing sand, or high winds. Where practicable, the Contractor will be permitted to erect approved screens to protect the welding operations.

Where ordered by the Engineer or specified in the Project Specification, welds shall be examined by radiographic inspection as stated in API Std. 1104.

All field welds shall be tested by a qualified inspector using the dye-penetrant test method.

Detachable couplings (FC, PVC-U and steel pipelines)
Each end of all pipes shall be thoroughly cleaned by brushing and wiping immediately prior to being jointed. All rubber rings and seals shall be carefully inspected after being placed in position, and before the joint is closed, to ensure that they have not suffered any cuts, tears, or other damage, and are not in any other way defective. Only the lubricant recommended by the manufacturer shall be used for sleeve-type couplings and rubber seal rings of FC pipes. Polyurethane joints for PVC-U pipes shall be lubricated with soft soap or similar material approved by the manufacturer. Grease derived from petroleum products shall not be used in PVC-U pipe joints. PVC-U and FC pipelines with Cl detachable couplings shall have a gap, after laying and jointing, of approximately 10 mm between the ends of the pipes and central to the collar, to allow for expansion when the pipes are filled and have absorbed moisture.

Design of specials
The Contractor shall be responsible for the design of all specials. He shall submit his design calculations to the Engineer for approval before manufacture commences. The Contractor shall ensure that all the necessary collars, Triforms and/or other forms of reinforcing required to prevent distortion or local over-stressing are an integral part of each special. Lifting eyes (lugs) shall be welded to all specials of DN 450 and larger to facilitate handling and minimise damage to the pipe coating.

All fabricated specials shall as far as practicable be constructed such that bends are formed to a radius three times the OD of the pipe (either by mitres of a maximum of 22,5° or hot bent) and all reducers (or expanders) shall have a maximum angle of divergence of 10°.

All specials and fittings shall be manufactured exclusively at the works of an approved manufacturer, and at one works only. No Site fabrication of specials will be permitted.

Setting of valves, specials and fittings
Unless otherwise shown on drawings or directed, gate and control valves shall be set upright, and butterfly valves shall be set with the main shafts horizontal. All valves, specials, and fittings shall be correctly set, supported, and placed in position as the work proceeds, and shall be properly jointed to their respective pipes.

4. TOLERANCES

General
No deviation that is visible to the naked eye will be permitted.

Control points
For the purposes of this clause, valves set on the centre line of the pipework and designated changes in gradient or direction shall be regarded as control points, and shall be located with a permissible vertical deviation of ±5 mm on the centre line. The same deviation will be permissible laterally. The maximum distance between control points shall be 100 m.

Alignment (plan and level)
Unless otherwise directed, the permissible deviation in alignment between control points from a straight line joining the control points, when measured on the top centre of the pipeline, shall be ± 5 mm.

The permissible deviation from the designated level at any point on the invert of the pipeline shall be ± 5 mm.

5. TESTING AND COMMISSIONING

General
The pipework valves and specials shall be tested by means of test equipment supplied by the Contractor.

In the case of steel pipelines butt-welded or fillet-welded in the field, joints shall be tested immediately after being made.

Each test shall be carried out in the presence of the Engineer or his representative. The Contractor shall be responsible for carrying out all tests and for all expenses incurred. When carrying out the hydraulic test, the Contractor shall ensure that all valves, tees, and bends are properly secured and shored to prevent movement of pipes and fittings and, should any such movement occur, the Contractor shall, at his own expense, reposition and, if necessary, repair the pipes and fittings and the securing means.

Until the pipework has been subjected to the pressure test, and has complied with the applicable requirement for the allowable leakage rate given, the pipework will not be accepted. The test shall be repeated until the Engineer is satisfied that the pipework under test complies with these requirements.

Initial tests on welded steel pipes

Dye-penetrant test
The inside and outside of every weld in steel pipes and specials shall be subjected to a dye-penetrant test carried out as specified below:

a) The Contractor shall obtain the approval of the Engineer for the group of the dye-penetrant and the developer he proposes to use for the test.

b) the clean and dry surface to be tested shall be thoroughly and uniformly coated with approved penetrant by immersion, flooding, brushing or spraying. The surface shall remain wetted for the period recommended by the penetrant manufacturer but in any case, this period shall not be less than 15 minutes, unless otherwise authorized by the Engineer. The excess penetrant shall be removed by wiping the surface with a suitable absorbent material dampened with penetrant remover or other approved methods.

After removal of excess penetrant, the test surface shall be dried by normal evaporation or forced air circulation as approved, at a temperature not exceeding 50°C and for a period not exceeding 10 minutes.

c) After drying of the test surface, the approved developer shall be uniformly applied in a thin coating by spraying or brushing. Thick coatings and pools of wet developer shall be avoided.

d) The test shall be applied to shop welding prior to despatch of pipes to the Site. Field welds shall be subjected to the test shortly after each weld is completed as pipe laying progresses.

e) In order to obtain a surface that is dry, clean, and free from scale, dirt, and grease, the Contractor may grind, but he shall not grit blast the surface.

f) The temperature of the surface to which the developer and the penetrant are applied shall not be below 16°C or above 52°C.

g) Observations for indications of penetrant on the opposite side of the metal to which the penetrant has been applied shall be made not less than 15 minutes and not more than 60 minutes after application of the penetrant.

h) Any surfaces on which non-relevant indications are observed shall be explored by visual methods and, if considered necessary by the Engineer, such surfaces shall be cleaned and retested.

i) Welds that show no relevant trace of dye on the developer will be accepted.

Radiographic examination
Joints shall be examined radiographically as and to the extent set out in the Project Specification when required.

Standard hydraulic pipe test

Test pressure and time of test
Unless otherwise ordered, hydraulic field testing shall be commenced only after permanent anchor blocks have attained their specified strength or after 28 days, whichever is the earlier.

The pipework shall be tested in sections between isolating valves and/or end caps, blank flanges, or other isolating devices, at the pressure given appropriate to the type and, when relevant, class of pipe in the pipeline under test.

The test pressure for field testing shall be 1,5 (or such other factor as is stated in the Project Specification) times the maximum working pressure laid down in the Project Specification.

The test pressure applied to the pipework under test shall be such that the pressure at any point is not greater than 1,5 times the maximum working pressure at these points.

The field test pressure shall not exceed the appropriate of the following values:

Type of pipe	Specification	Test pressure expressed as a percentage of the specified hydraulic test pressure
Mild steel	SANS 719	50% (3,5 MPa max.)
Cast iron	BS 2035	67% (or works test pressure)
Fibre-cement (COD) & (CID)	SANS 1223	75% of the test pressure for permeability test.
Black polyethylene	SANS 533	100%
uPVC	SANS 966	75%

Where circumstances permit, in the case of fibre cement pipes and cement mortar lined steel pipes, the pipework shall be filled at least 24 hours before the test pressure is applied, to ensure saturation of the pipework.

Care shall be taken to ensure that all air is expelled from the line to be tested after it has been filled and before the test commences.
All valves shall be successfully hydraulically tested in the manufacturer's works to at least twice their guaranteed working pressure.

Visible leaks
Except as allowed, the test pressure specified shall be maintained for a period of at least 3 hours (or such longer period as is necessary for inspection of the pipeline) by means of a suitable pump, during which period all pipes, specials, joints, and fittings shall be carefully inspected for leaks. All visible leaks shall be made good and any pipe, special, or fitting found to be defective shall be removed and replaced, at the expense of the Contractor, and such replacement material shall, after installation, be tested at the expense of the Contractor.

In the case of pipes of nominal diameter under 400 mm, the test period may be reduced proportionally to the nominal diameter of the pipe, provided that in no case shall the test period be less than 1 hour.

Permissible leakage rates
The test pressure shall be maintained for a further period of 1 hour after the completion of the procedure above, during which time the volume of water required to be pumped into the pipeline for maintenance of the pressure shall be measured. No additional water shall be required in the case of continuously welded steel pipes, and in other cases the volume shall not exceed the value, in litres, calculated from the applicable of the following formulae:

a) Jointed pipes in steel, cast iron, black polythene, and PVC-U:

0,01 x diameter of pipe in millimeters
x length of test section in kilometres
x square root of the test pressure in megapascals

b) Fibre cement pipes and concrete-lined steel pipes:

0,075 x diameter of pipe in millimetres
x length of test section in kilometres

x square root of the test pressure in megapascals

6. MEASUREMENT AND PAYMENT

Scheduled items

Supply and install complete suction and delivery pipework, valves, etc
Unit…….. Sum

Pipework will be measured by sum or as scheduled.

The sum shall cover the cost of the provision of the pipes, specials, valves, fittings and pressure gauges, complete with couplings, and the costs of the handling, inspecting, transporting, jointing, cutting, installing, testing and anchoring.
No extra payment over and above the rates will be made in respect of any additional cutting, turning, and jointing of pipes required for the location of valves exactly in the positions given on the drawings.

Unless specific provision is made in the schedule, no separate payment will be made for the supply and fitting of any additional joints and jointing materials which may be required for the connection of shortened pipe lengths.

Extra-over for excavation for bell-holes in rock
Unit…….. m3

No additional payment will be made for bell-holes, except where hard rock is encountered in the trench, in which case an extra over payment on trench excavation will be made for rock.

Extra-over for encasing joints
Unit……. No.

Where wrapping or protection of joints, etc., is ordered, payment will be made as an extra-over per joint.

The rate shall cover the cost of the material, plant, and labour necessary for the completion of the joint.

Temporary valves, etc
Unit ……..No. or Sum

Payment for the supply or loan of temporary valves, end caps, blank flanges, or other isolating devices ordered by the Engineer will be made at daywork rates or at a price to be agreed by the Engineer, unless the method of payment for the work has been dealt with in the Project Specification and a suitable item included in the schedule.

Special wrapping in corrosive soil (diameter and location stated)
Unit…….m
The rate shall cover the cost of the provision and fixing of the wrapping and the cost of any delay and inconvenience caused by the requirement to wrap.

Cold bending of pipes

An extra over payment on the sum tendered for cold bending of steel pipes will be made only where such bends are ordered by the Engineer in addition to those shown on the drawings.

Payment will be made at daywork rates or at a price agreed by the Engineer.

C3.4 Management

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C3.4 Management

C3.4 MANAGEMENT

C3.4.1 CONSTRUCTION PROGRAMME

C3.4.1.1 Format

The programme will be set up in collaboration with the Engineer:

In addition to the requirements of Sub-Clause 15 (3) of the General Conditions of Contract, the Contractors programme shall:

i) be in a bar chart form

ii) show the various activities related to a time-chart indicating the sequence of performing the works comprising the contract.

iii) indicate critical path activities

C3.4.1.2 Allowances

The Contractors programme shall take the following into consideration:

i) expected weather conditions

ii) special non-working days as stipulated in the Contract Data

C3.4.2 PROCEDURES DURING CONSTRUCTION

The Contractor to supply, keep up to date and keep the following documents on site on a daily basis:

C3.4.2.1 A full set of the latest construction drawings to be on site permanently for use by the Engineer and others.

C3.4.2.2 The Contractor to supply and keep on site and A4 triplicate site instruction book.

C3.4.2.3 The Contractor to supply an A4 duplicate diary on site. The Contractor to keep daily diary with at least the following information.

- Weather condition
- Record of any accidents and detail
- Record of construction activities of the day
- Information of any strikes
- Any other relevant information

C3.4.3 SITE FACILITIES AVAILABLE

C3.4.3.1 Source of Water Supply

The Contractor is to make his own arrangements for the supply of water. Water is available from the municipality's waternetwork. The Municipality does not guarantee the sufficiency or continuity of the supply and no claims will be considered in this regard. The Contractor will be held responsible for any wastage of water due to negligence.

C3.4.3.2 Source of Power Supply

The Contractor is to make his own arrangement for the supply of power.

C3.4.3.3 Location of Camp and Depot

The Contractor must make his own arrangements for a campsite. The Contractor shall make his own arrangements for the accommodation of labour.

C3.4.3.4 Spoil Sites

No indiscriminate spoiling of material will be allowed. All unsuitable surplus material shall be removed from the site and to a suitable spoil site indicated by the Engineer.

C3.4.4 ABNORMAL RAINFALL

Refer to Contract Data – C1.2

C3.4.5 TIME RELATED ITEMS (Sub-Clause 8.2.2)

An approved extension of time (other than an extension of time granted in terms of Clause 12(8) of the Special Conditions of Contract) will entitle the Contractor to submit a claim for additional payment. Any such approved additional payment will be made for proven additional costs for each relevant time related item but will be limited to a maximum amount determined form the sum tendered for such item and from the designated operation, the period stated for the completion of the item or the tendered contract period, as applicable.

C3.4.6 PROJECTBOARD (Sub-Clause 3.2.1)

The Contractor must make provision for one project board as per the drawing bound in document.

C3.4.7 PROTECTION FROM STORMS AND FLOODS

The sum allowed for in the Bills of Quantities shall be deemed to be full compensation for any damage to the Works due to storms, rain, floods, stormwater or subsurface water.

Under no circumstances shall the Contractor be entitled to any additional payment in this regard. The Contractor shall accept full responsibility and costs to handle water from any source on the Site.

C3.4.8 EXISTING SERVICES

The Engineer will provide information regarding the location of the existing pipeline and connections, but the:

Engineer does not accept responsibility for the accuracy of this information. The Contractor shall make further investigations to determine the exact locality, size and depth of existing connections before commencing construction to ensure that no damage is done to any existing pipes or fittings.

The Contractor shall take all reasonable precautions to protect existing pipeline/services during construction and during relocation of such services.

Any pipe, cable, conduit or other services of any nature whatsoever indicated to the Contractor and subsequently damaged as a result of the Contractor's operations shall be repaired and reinstated forthwith by the Contractor or by the authority concerned, all at the expense of the Contractor and to the satisfaction of the Engineer.

Whenever services are encountered which interfere with the execution of the Works and which require be moving and relocating, the Contractor shall advise the Engineer who will determine the extent of the work, if any, to be undertaken by the Contractor in removing, relocating, and reinstating such services.

Any work required to be undertaken by the Contractor in the moving and relocation of services for which no provision is made in the contract documents, or for which no applicable tender rates exist, will be classed and paid for as "Daywork" as prescribed in the General Conditions of Contract.

The Contractor shall work in close co-operation with personnel of the Municipality controlling services, which have to be protected, removed or relocated. No undertaking can be given as to the exact time of commencement or of completion of the relocation, removal or protection of services, which have to be carried out, by the Board or controlling authorities themselves. The Contractor is to make allowance in his programme for this contingency.

Where services have to be removed or relocated or protected the Engineer will at the request of the Contractor, notify or negotiate with the Municipality or authorities controlling those services, but the Employer does not accept liability for any costs resulting from delays in the relocation, removal or protection of any service, or delays as a result of delays in negotiations. The sum allowed for in the Schedule of Quantities shall be deemed to be full compensation for the location and protection of existing services.

C3.4.9 ACCOMMODATION OF TRAFFIC AND PUBLIC ACCESS

During all his operations and when using his machinery, plant and equipment, the Contractor shall at all times take the necessary care to protect the public and to facilitate the traffic flow.

C3.4.10 SETTING OUT OF WORKS

All setting out required to carry out the work shall be undertaken by the Contractor. Setting out of the Works to be priced for in the item provided.

C3.4.11 SANITARY CONDITIONS

The Contractor shall ensure that, during the period of construction, sanitary conditions prevail on the site and surrounding areas. Unhygienic behaviour that may cause contamination of the works or the surrounding area is strictly prohibited.

C3.4.12 CONSTRUCTION IN CONFINED AREAS

It may be necessary for the Contractor to work within confined areas and no additional payment will be made for work done in restricted areas. The method of construction in these confined areas will depend largely on the Contractor's construction plant. However, the Contractor shall note that measurement and payment will be only in accordance with the specified 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 during working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for additional payment be considered in such cases.

C3.4.13 DENSITY TESTS / CONCRETE CUBES

The Contractor shall carry out his own density tests on each compacted layer and these tests shall be submitted to the Engineer for scrutiny and approval before commencing with the construction of the following item.

The Contractor also needs to do his own concrete cube tests, which is to be handed to the Engineer for scrutiny and approval. The Engineer may order that further, control tests are to be taken.

The Engineer may order that control tests be taken by his own or another independent laboratory. A provisional sum is provided in the Bills of Quantities to allow for the cost of control tests.

The sum allowed shall, however, be under the control of the Engineers and payment shall only be made to the Contractor on receipt of proof of expenses incurred by the contractor for the tests, i.e. payments to be made to an independent laboratory.

Should these control tests indicate failure to obtain the required standards, the cost of the tests shall be for the Contractor’s account. Cub/Density tests carried out be the Contractor in the normal course of his work shall not be covered by this sum and shall be carried out at his own expense.
The tendered rates in the Bills of Quantities shall be deemed full compensation for the testing of materials.

C3.4. 14 PRESSURE TESTS

The Contractor shall carry out pressure tests under the supervision of the Engineer on sections of the pipeline. The Contractor must supply all the necessary equipment to execute the testing of the pipeline, joints, connections and fittings on site. Full payment for installation of pipelines will only be processed after completion of pressure tests. The maximum length of pipe line that must be tested is 1.0km. All pipe sections to be tested at a pressure of at least 1,5 X the working pressure of the pipeline.

C3.4. 15 COMMUNITY LIAISON OFFICER (CLO)

The CLO official shall be identified by the Employer to act as a liaison person between the Contractor and the persons to be employed. The liaison officer must be appointed by a process of appointment and the job description is available from the Employer or the Employers Agent which must be communicated with him after appointment.

C3.4. 16 LABOUR INTENSIVE ACTIVITIES

GENERIC LABOUR-INTENSIVE SPECIFICATION

The Contractor's attention is drawn to the fact that it is an objective of the contract to maximise the labour content of certain operations or portions thereof. In this regard, where the specified work allows for a choice between mechanical or labour-enhanced means, the former shall generally be kept to the practical minimum.

The Contractor shall submit on a monthly basis, daily labour reports to the Engineer indicating the numbers of temporary personnel employed on the works and the activities on which they were engaged. The reporting shall be on EPWP formats that will be provided at the site handover meeting. These reports must be submitted with Monthly Payment Certificate Claims, otherwise payment will not be processed.

The normal rules and regulations in terms of the Labour Act must be adhered to. Minimum wages for the region must be paid to the labourers and formal Labour-contract documentation must be in place during the construction period.

The following activities must be executed with local labour:

i) The normal handling, installation and testing of water pipes.
ii) Placing and preparation of bedding and blanket materials in pipe trenches.
iii) Compaction of bedding and blanket materials.
iv) Building of all manholes and concrete structures.
v) Final site clearance.

C3.4. 17 CONCRETE MARKERS

Concrete markers will be placed by the contractor along the pipelines at 500m intervals and at direction deviations. The markers must be precast or on site casted clearly in scripted with the letter 'w' (for water pipeline) at the top. The concrete must be reinforced with a minimum strength of 25 MPa and the marker must be installed at least 400mm underground and 600mm above ground.

C3.4. 18 EXCAVATIONS OF TRENCHES

The following rules must apply for the excavation of trenches:

- The pipe line route will be set out 4.0m from the existing pipe line where necessary.
- Excavations must be done without damaging the existing pipeline.
- The maximum allowable open trench length is 500m.
- The trenches must be excavated according to the prescribed grade line with deviations of not more than 3.5%.

C3.4.19 CLASSES OF EXCAVATION (Sub clause 3.1.2**)**

All material encountered in any excavations for any purpose including restricted excavation will be classified as follows:

i) **Hard rock excavation**
Hard rock excavation shall be excavation in material (including boulders exceeding 0.15 cubic metres in individual volume) that cannot be efficiently removed without blasting or without wedging and splitting or be in material, which cannot be excavated by a loader/backhoe or by a scraper without prior ripping.

ii) **Intermediate excavation**
This class of excavation will not be applicable or measured in this contract.

iii) **Soft excavation**
Soft excavation shall be all material not falling into the category of hard rock or intermediate excavation.

C3.4.20 MANHOLES

The rates for both chambers and manholes shall be measured as a unit and shall cover the cost of all items excluding pipe work. Included would be excavation, concrete work, brickwork (190mm bricks) and precast concrete slabs with manhole cover and frame.

C3.4.21 QUALITY CONTROLL BY THE ENGINEER

Except for the quality control measures that must be implied by the Contractor, the Engineer can arrange and executed his own quality control inspections. Invoices will be forwarded to Contractor for payment and to claim with a 7, 5% mark-up.

C3.4.22 HEALTH AND SAFETY PLAN

In compliance with the Construction Regulations the Contractor shall, after performing a risk assessment, prepare a health and safety plan for approval by the Employer.

The health and safety plan shall include, but not be limited to, the following:

- The safety management structure including the names of all designated persons such as the construction supervisor and any other competent persons;
- Safety method statements and procedures to be adopted to ensure compliance with the OHSA. Aspects to be dealt with shall include:
  - Public vehicular and pedestrian traffic accommodation measures;
  - Control of the movement of construction vehicles;
  - The storage and use of materials;
  - The use of tools, vehicles and plant;
  - Temporary support structures;
  - Dealing with working at height;
  - Environmental conditions and safety requirements in working hazardous materials including asbestos cement products;
  - Security, access, control and the exclusion of unauthorised persons.
- The provision and use of temporary services;
- Compliance with wayleaves, permissions and permits;
- Safety equipment, devices and protective clothing to be employed;
- Emergency procedures;
- Provision of welfare facilities;
- Induction and training;
- Provision and maintenance of the health and safety file and other documentation;

Arrangements for monitoring and control to ensure compliance with the safety plan.

C3.5 Annexes

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TENDER DRAWINGS

Part C4: Site information

C4 Site Information

C4.1. Available Information

C4.1.1.Disclaimer

This document sets out the results and conclusions derived from various investigations and tests done on natural materials encountered along the route.
The results of these investigations are given in good faith and there is no guarantee that these results are entirely representative of all the materials and conditions that may be encountered, the intention being to give an indication of the materials and conditions most likely to be encountered.

The results of various tests carried out on materials taken from possible material sources are given in good faith and there is no guarantee that the results are entirely representative of all the materials available nor that the estimated quantities of materials are correct, the intention being to give an indication of the materials most likely to be obtained from the source.

No responsibility for any consequence arising from variations between the actual material properties and those indicated in this document will be accepted.
The specifications and contract drawings shall always overrule this part of the contract documents.

C4.1.2. Climate

Nababeep has a typical semi-desert climate. The daytime temperatures are warm to hot, while it can also be cold at night. The area is located in a predominantly winter rainfall area, but the occasional summer thunder showers do occur sporadically.

The average annual temperature for Nababeep is 25° degrees and the average rainfall is about 72 mm of rain in a year. It is dry for 298 days a year with an average humidity of 45% and an UV-index of 5.

C4.1.3. Geology

Within the Okiep district the country rock of Namaqualand Metamorphic Complex comprises the Okiep Group (quartz-feldspar-biotite granulite and gneiss, pelitic schist, quartzite, amphibolite and calc-silicates), cut by the Gladkop Suite (two phases of fine to medium grained quartz-microcline granite gneiss), the Klein Namaqualand Suite (two phases of quartz-microcline-biotite granite gneiss, dated at 1210 Ma), the Spektakel Suite (three phases of quartz-microcline granite, dated at 1170 Ma) and finally the Koperberg Suite (1070 Ma).

The Koperberg Suite comprises mainly diorite, anorthosite and norite in order of decreasing abundance.

Other rock types include lesser syenite, shonkinite, quartz anorthosite, quartz diorite, biotite diorite, glimmerite, hypersthene diorite and hypersthenite. Many of the Koperberg Suite bodies are entirely uniform, while others are composite. There is some evidence for initial anorthosite, followed by progressively more basic types. Magnetite is a ubiquitous component and in places volumetrically important.

The hardness of the excavated material will vary with depth. On the surface soft material can be expected, however solid granite and dolerite can occur beneath the surface which is sometimes difficult to remove.

Abovementioned description should give you a clear indication as to what to expect, but the Contractor must under no circumstances be oblivious to his/her responsibilities in terms of the Contract Requirements.

Groundwater will not be a problem, but can be problematic during winter months due to higher rainfall in winter months.

Contractor to liaise with local authorities for potential borrow pits and/or previous approved spoil areas.

C4.1.4. Traffic Information

Currently no vehicle traffic exists on the site with the exception of the municipal O&M personnel performing routine operation and maintenance.