DR JS MOROKA LOCAL MUNICIPALITY

CONTRACT NUMBER: JSM/W02/22-23/W8

BID DOCUMENT

REPLACEMENT OF ASBESTOS BULK LINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR

EXPANDED PUBLIC WORKS PROGRAMME
Creating opportunities towards human fulfilment

PREPARED BY:	PREPARED FOR:
Fubu Africa (PTY) Ltd. FUBU AFRICA (PTY) LTD STAND 2437 MHLUZI 1055 Mr. OL. Kgopa Tel: 010 833 7337 Fax: 086 267 7586	THE MUNICIPAL MANAGER DR JS MOROKA MUNICIPALITY P/BAG X 4012 SIYABUSWA 0472 Ms MM Mathebela Tel: (013) 973 9126/7 Fax: (013) 973 9312/3

NAME OF BIDDER (BIDDING ENTITY) (FULL NAME, i.e. (CC, (PTY) LTD, LTD, JV, SOLE PROPRIETOR etc.) : .....

TEL NUMBER : .....

FAX NUMBER : .....

E-MAIL : .....

CELL NO. : .....

CIDB NO. : .....

THE OFFERED TOTAL OF THE PRICES INCLUDING VALUE ADDED TAX IS: R..... ……(In figures)

DESCRIPTION		**COLOUR**
PORTION 1: TENDER		
PART T1	**BIDDING PROCEDURES**	
	T1.1 BID NOTICE AND INVITATION TO BID	White
	T1.2 BID DATA	Pink
PART T2	**RETURNABLE SCHEDULES**	Yellow
	T2.1: LIST OF RETURNABLE DOCUMENTS	Yellow
	T2.2 RETURNABLE SCHEDULES	Yellow
PORTION 2: CONTRACT		
PART C1	**AGREEMENTS AND CONTRACT DATA**	
	C1.1 FORM OF OFFER AND ACCEPTANCE	Yellow
	C1.2 CONTRACT DATA	Yellow
	C1.3 FORM OF GUARANTEE	Yellow
	C1.4 AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT,1993	Yellow
PART C2	**PRICING DATA**	
	C2.1 PRICE INSTRUCTIONS	Yellow
	C2.2 BILL OF QUANTITIES	Yellow
PART C3	**SCOPE OF WORK**	
	C3.1 DESCRIPTION OF WORKS	Blue
	C3.2 ENGINEERING	Blue
	C3.3 PROCUREMENT	Blue
	C3.4 CONSTRUCTION	Blue
	C3.5 MANAGEMENT OF WORKS	Blue
	C3.6 HEALTH AND SAFETY	Blue
PART C4	**SITE INFORMATION**	
	C4.1 SITE INFORMATION	Green
	C4.2 LOCALITY PLAN	Green
PART C5	**ANNEXURES**	
	C5.1 PROFORMA DOCUMENTS	White
	C5.2 CONTRACT DRAWINGS	White
	C5.3 GEOTECHNICAL INVESTIGATION REPORT	White

TENDER DETAILS						
TENDER NUMBER	JSM/W02/22-23/W8					
TENDER TITLE	***REPLACEMENT OF ASBESTOS BULK LINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR***					
CLOSING DATE	19/09/2022		CLOSING TIME		11H00	
BRIEFING MEETING	DATE	08/09/2022	TIME	11h30	COMPULSORY	YES
BRIEFING MEETING ADDRESS	DR JS Moroka Municipality Main Entrance Technical Service					
CIDB GRADING REQUIRED	YES		LEVEL AND CATEGORY		5CEPE/6CE	
TENDER DOCUMENT FEE	R 3 058.06		PREFERENCE POINT SYSTEM		80/20	
BID BOX SITUATED AT	Dr. JS Moroka Local Municipality Head Quarters Building Entrance					
OPERATING HOURS	The bid box is open during office hours, Monday to Fridays from 09h00 to 15h00.					
OFFER TO BE VALID FOR	**90**	DAYS FROM THE CLOSING DATE OF TENDER.				

The following conditions must be complied with:

Failure to comply with the following will render the tenderer liable to rejection:

- All pages must be completed, and all pages form part of the tender document, therefore no page removal is allowed.
- Scratching out / painting over rates / use of correcting fluid is not allowed.
- Failure to attend compulsory site inspections / compulsory briefing session.
- Failure to submit documents required in this document
- Form of tender not filled and signed and all pages of bid documents not initialed.
- Enterprise particulars not provided.
- The bid has been submitted after the closing date and time.

Compulsory returnable Documents: failure to return documents below is an automatic disqualification with the exception of the BBBEE Status Certificate

- Copy of Tax Clearance Certificate
- Company Registration (CK)
- A certified BBBEE Status certificate must be attached for the tenderer to claim the Preferential points
- All declarations and authorisations must be duly signed.
- All returnable schedules must be completed
- Copy of Authority for signatory

Every bid will be scored and awarded points out of a maximum of 100 points.
A fixed 20 points of the maximum of 100 points is allocated to calculate preference in terms of the BBBEE status.

A bidder must not be awarded the points claimed for BBBEE status level of contribution if it is indicated in the bid documents that such a bidder intends sub-contacting more than 25% of the contract value to any other enterprise that does not qualify for a least the same number of points that the bidder qualifies for, unless the intended sub- contractor is an EME that has the capacity and ability to execute the sub-contract.

A contractor is not allowed to sub-contract more than 25% of the contract value to another enterprise that does not have equal or higher B-BBEE status level, unless the intended sub-contractor is an EME that has the capacity and ability to execute the sub-contract

In relation to a designated sector, a contractor must not allow to sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

Any contract awarded on false information furnished by the bidder, may, without derogating from other remedies available to Dr JS Moroka Local Municipality, be cancelled at the sole discretion of Dr JS Moroka Local Municipality

PLEASE NOTE:

1. Prospective suppliers must be registered on CSD prior to submitting bids (open bids)
2. Tenders that are deposited in the incorrect box will not be considered.
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.
4. Mailed, telegraphic, telex, or faxed tenders will not be accepted.
5. No late bids after closing date and time will be accepted.
6. Bids not clearly marked and unamend will not be accepted.
7. Bids may only be submitted on the bid documentation provided by the municipality.
8. No awards will be made to a person:
   i. Who is in the service of the state,
   ii. If that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state
   iii. Who is an advisor or consultant contracted with the municipality or municipal entity

VERY IMPORTANT NOTICE ON DISQUALIFICATIONS:

A bid not complying with the peremptory requirements stated hereunder will be regarded as not being an "Acceptable bid", and as such will be rejected.

"Acceptable bid" means any bid which, in all respects, complies with the conditions of bid and specifications as setout in the bid documents, including conditions as specified in the Preferential Procurement Policy Framework Act(Act 5 of 2000) and related legislation as published in Government Gazette number 22549, dated 10 August 2001, in terms of which provision is made for this policy.

1. If an original and valid tax clearance certificate (or in the case of a joint venture, of all the partners in the joint venture) has not been submitted with the bid document on closing date of the bid.
2. If any pages have been removed from the bid document, and have therefore not been submitted, or a copy of the original bid document has been submitted.
3. Failure to complete the schedule of quantities as required, i.e only lump sums provided.
4. Scratching out without initialling next to the amended rates or information, writing over or painting out rates affecting the evaluation of the bid.
5. The use of correction fluid (i.e. tippex) or any erasable ink, eg. Pencil.
6. Non-attendance of mandatory/compulsory:
   Site inspections or;
   Information/Clarification meetings
7. The Bid has not been properly signed by a party having the authority to do so, according to the *example* of "Authority for Signatory"
8. No authority for signatory submitted – See example, where it is stated that a duly signed and dated original or certified copy of the company's relevant resolution (for each specific bid) of their members or their board of directors, must be submitted.
9. Particulars required in respect of the bid have not been completed, except if information required on Preferencing Schedule in respect of BBB- EE, is not attached, the bid will not be disqualified but no preference points will be awarded.
10. The bidder attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract
11. The bid has been submitted either in the wrong bid box or after the relevant closing date and time
12. Failure to provide a valid certificate from the Department of Labour, *or* a declaration (Specific goals – "Equity ownership") by a designated employer that it complies with the Employment Equity Act 55 of 1998.
13. If any municipal rates and taxes or municipal service charges owed by the bidder or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months, attach proof of municipal rates account for both company and company.
14. If any bidder who during the last five years has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after written notice was given to that bidder that performance was unsatisfactory.
15. The accounting officer must ensure that irrespective of the procurement process followed, no award may be given to a person –
    (a) who is in the service of the state, or;
    (b) if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder, is a person in the service of the state; or;
    who is an advisor or consultant contracted with the municipality in respect of contract that would cause a conflict of interest.
16. Failure to provide:
    (a) written proof of **registration** with the CIDB, in an appropriate contractor grading designation (category), as required in the bid documentation (if applicable); or
    (b) written proof of **application** to the CIDB **for registration** as a contractor in an appropriate designation (category), as required in the bid documentation (if applicable).
17. Bid offers will be rejected if the bidder or any of his directors is listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector.
18. Bid offers will be rejected if the bidder has abused the DR. JSMLM's Supply Chain Management System.
19. Failure to attach a copy of a valid signed Joint Venture/Consortium agreement (if applicable) to the bid document.
20. Form of offer not completed and signed by the authorised signatory.
21. Not signing all pages on the space provided

22. Attach CV of Contracts Manager, Site Agent and Safety Officer
23. Certified Qualification of Contracts Manager (Minimum qualification in Civil / Building related projects), Site Agent and Safety Officer (Relevant Certificate)
24. Proof 0f Foreign Qualification approved from SAQA (if applicable)
25. Proof of Employment, letter confirming employment (Contracts Manager, Site Agent and Safety Officer)
26. Proof of relevant experience (copies of appointment letter and completion certificate)
27. Proof of Purchase of the tender document must be attached; failure to do that will lead to disqualification
28. A letter from the accounting officer (in case of a close cooperation or cooperative) or accounting firm (in case of a Private company, stating that the business is going concern.
29. In case where the bidder fails to prove beyond reasonable double that the project will be completed with the amount stated on the form offer. The bidder in the latter case will be given an opportunity to present the facts for risk mitigation purposes.
30. The municipality also reserves the right not to appoint the lowest bidder and to appoint the bid in whole or in parts. The municipality also reserves the right to appoint the bid based on its risk assessment.
31. Attach proof of registration with Central Supplier Database CSD.
32. If any municipal rates and taxes or municipal service charges owed by the bidder or director to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months, thus the bidder must attached municipal accounts for the company or any form of payment done by the company.

NOTE:

IN THIS DOCUMENT AND OTHER DOCUMENTS REFERRED TO BUT NOT ATTACHED, THE FOLLOWING WORDS ARE SYNONYMOUS WITH EACH OTHER.

1. CLIENT, EMPLOYER, DR. JS MOROKA LOCAL MUNICIPALITY (DR. JSMLM).

2. BID, TENDER AND VARIATIONS THEREOFF

3. JOINT VENTURE / CONSORTIUM

FORM 7.1 YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE **Dr J.S. MOROKA LOCAL MUNICIPALITY**

BID NUMBER: … ……. CLOSING DATE: ……..

CLOSING TIME: **...**11:00am**.....**

The successful bidder will be required to fill in and sign a written Contract Form (SBD 7).

DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS)*
…**Dr. J.S. Moroka Local Municipality**……
…**2601/3 Bongifundo Street Siyabuswa**……

Bidders should ensure that bids are delivered timeously to the correct address. If the bid is late, it will not be accepted for consideration.

The bid box is generally open 24 hours a day, 7 days a week.

FORM 7.2 ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS – (NOT TO BE RE-TYPED)

THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2011, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT

THE FOLLOWING PARTICULARS MUST BE FURNISHED
(FAILURE TO DO SO MAY RESULT IN YOUR BID BEING DISQUALIFIED)

NAME OF BIDDER ……

POSTAL ADDRESS ……

STREET ADDRESS ……

TELEPHONE NUMBER CODE……NUMBER……

.1 CELLPHONE NUMBER**……**

FACSIMILE NUMBER CODE ……NUMBER……

E-MAIL ADDRESS……

VAT REGISTRATION NUMBER……

HAS AN ORIGINAL AND VALID TAX CLEARANCE CERTIFICATE BEEN SUBMITTED? (SBD 2) YES or NO

HAS A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE BEEN SUBMITTED? (SBD 6.1) YES or NO

IF YES, WHO WAS THE CERTIFICATE ISSUED BY?

AN ACCOUNTING OFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA)…… ☐
A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN ACCREDITATION SYSTEM (SANAS); …… ☐
A REGISTERED AUDITOR …… ☐
[TICK APPLICABLE BOX]

(A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE)

1.1 ARE YOU THE ACCREDITED REPRESENTATIVE
IN SOUTH AFRICA FOR THE GOODS / SERVICES / WORKS OFFERED? YES or NO

[IF YES ENCLOSE PROOF]

SIGNATURE OF BIDDER ……..

DATE……..

CAPACITY UNDER WHICH THIS BID IS
SIGNED……

TOTAL BID PRICE ……

TOTAL NUMBER OF ITEMS OFFERED ……

ANY ENQUIRIES REGARDING THE BIDDING PROCEDURE MAY BE DIRECTED TO:

Contact Person: Mr. A Masilela

Tel: 013 973 9126
Fax: 013 973 2463
E-mail address: masilelaa@moroka.gov.za

ANY ENQUIRIES REGARDING TECHNICAL INFORMATION MAY BE DIRECTED TO:

Contact Person: Mr M Z Skosana

Tel: 013 973 1101
Fax: 013 973 2463
E-mail address: skosanaz@moroka.gov.za

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES:

CONTRACT NO: JSM/W02/22-23/W8

FOR

REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR

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DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES:

CONTRACT NO: JSM/W02/22-23/W8

FOR

REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR

PART T1 BIDDING PROCEDURES PAGE(S)
THE BID

T1.1 BID NOTICE AND INVITATION TO BID 11

T1.2 BID DATA 12

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

T1.1 BID NOTICE AND INVITATION TO BID

DR JS MOROKA MUNICIPALITY

TENDER NO JSM/W02/22-23/W8

CLOSING DATE: 19 SEPTEMBER AT 11H00

REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR

CIDB GRADING REQUIRED 5CEPE/6CE

INVITATION TO CONTRACTORS

Tenders are hereby invited from Contractors with necessary experience and compliance documents, have an active **CIDB grading of a minimum -5CEPE/6CE** and are in good standing with the South African Revenue Services.

Tender documents will only be available from 08 September 2022 on Thursday and may be obtained from Dr JS Moroka Municipal Head Quarters at the cashier offices situated 2601/3 Bongimfundo Street, Siyabuswa during working hours 09h00 to 15h00 (Monday to Friday), upon payment of a non-refundable fee of **R3 058.06 per document**. Only cash or bank guaranteed cheques will be accepted and cheques are to be made payable to Dr JS Moroka Municipality. No tender documents will be sold beyond these dates.

A Compulsory Site meeting and Inspection will be held on **Thursday** ***08 September 2022 at 11h30 atthe Technical Offices outside the Gate*****,** after which Tenderers will be taken to site(s) where project's construction will be taking place. Only tenders from Tenderers who attend the above tender meeting and have signed attendance register shall be considered.

All tenders and supporting documents shall be sealed in an envelope or package clearly marked **"Contract *JSM/W02/22-23W8"***

Duly completed tenders shall be placed in the tender box situated at the main entrance of Dr JS Moroka Local Municipality at 2601/3 Bongimfundo Street, Siyabuswa. No Fax or Late tenders will be accepted. Tenders will be evaluated on a 80/20 point system in terms of Dr JS Moroka Municipality's Supply Chain Management Policy in line with Preferential Procurement Framework Act 5 of 2000.

All Technical enquiries are to be directed to Mr. MZ Skosana at (013) 973 1101 (skosanaz@moroka.gov.za) while document procurement related enquiries are to be directed to Mr A Masilela at (013) 973 1101

In all cases Tenders shall reach the stipulated address not later than on Monday 19 September 2022 at 11:00 when tenders shall be opened and read in public.
Ms M.M. Mathebela
Municipal Manager

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

T1.2 BID DATA

The **Standard Conditions of Bid** for Procurements make several references to the bid data for details that apply specifically to this bid. The bid data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of bid.

Clause number	Data
F.1.1 ACTIONS	The Employer is: The Acting Municipal Manager Dr. JS Moroka Local Municipality 2601/3 Bongimfundo Street Private Bag X4012 Siyabuswa 0472
F.1.2 TENDER DOCUMENTS	The bid documents issued by the Employer comprise: **THE BID** **Part T1 Bidding procedures** Part T1.1 Bid notice and invitation to bid Part T1.2 Bid data **Part T2 Returnable documents** Part T2.1 List of returnable documents Part 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 Agreement in terms of Occupational Health and Safety Act, 1993 **Part C2 Pricing Data** C2.1 Pricing Instructions C2.2 Bill of Quantity **Part C3 Scope of Works** C3 Scope of Works **Part C4 Site Information** C4 Site Information
F.1.4 COMMUNICATION AND EMPLOYER'S AGENT	The employer's agent is: Name: FUBU AFRICA (PTY) LTD Address: No. 2437 Mhluzi Middleburg 1055 Telephone: 010 820 7337 Fax: 086 267 7586 E-mail info@fubuafrica.co.za

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

<table>
<tr><th>Clause number</th><th>Data</th></tr>
<tr><td>F.2.1
ELIGIBILITY</td><td>
Only those bidders who have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit bids.

Only those bidders 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 for a 6CE class of construction work, or by a contractor who is registered as a potential emerging enterprise in terms of these regulations at a contractor grading designation one level lower than the required class as specified above are eligible to submit bids, provided that the employer:

(a) is satisfied that such a contractor has the potential to develop and qualify to be registered in that higher grade; and

(b) ensures that financial, management or other support is provided to that contractor to enable the contractor to successfully execute that contract.

Joint Ventures are eligible to submit bids provided that:

1. each member of the joint venture is registered with the CIDB and valid copy/ies of registration of each member is submitted with this bid;

2. the lead partner has a contractor grading designation in the 6CE/5CEPE class of construction work; and

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 -6CE-class of construction work, are eligible to submit bids.

Municipal Supply Chain Management Policy will be used for evaluation of Prospective Service Provider as per the approved scoring system by the specification committee.

The evaluation will be done as per Preferential Procurement Regulations, 2011 issued in terms of section 5 of PPPFA, Act No. 5 of 2000.

Only those tenderers who score a minimum score of 60 points in respect of the following functionality criteria will proceed to the price and preference goals.

The Construction Firm's tender responsiveness in relation to points is therefore summarized as follows:
<table>
<tr><th>Description of Quality Criteria</th><th>Maximum number of tender evaluation points</th></tr>
<tr><td>Organizing and Staffing</td><td>25</td></tr>
<tr><td>Plant</td><td>15</td></tr>
<tr><td>Experience of Firm</td><td>40</td></tr>
<tr><td>Programme and Cash Flow</td><td>10</td></tr>
<tr><td>Bank Ratings</td><td>10</td></tr>
<tr><td>Maximum total evaluation points for quality</td><td>100</td></tr>
</table>
</td></tr>
</table>

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Clause number	Data
F.2.7 CLARIFICATION MEETING	The arrangements for a compulsory clarification meeting are: Location: Municipal Technical Offices outside the gate Date and time: Thursday 08 September at 11h30 Enquiries and confirmation of attendance at least one full working day in advance regarding the meeting and site inspection may be directed to: Name : Mr. A Masilela Telephone No. : 013 973 9126/7/8 Email. : masilelaa@moroka.gov.za Tenderers must sign the attendance register using the name of the tendering entity. Addenda will be issued, and tenders will be received only from those tendering entities appearing on the attendance list.
F.2.12 ALTERNATIVE TENDER OFFERS	*No alternative bid is to be accepted!*
F.2.13.1 SUBMITTING A TENDER OFFER	Bidders may offer to provide any of the parts, or combinations thereof, of the works, services or supply identified in the contract data.
F.2.13.3 SUBMITTING A TENDER OFFER	The ***whole original*** bid document, ***as issued by the DR. JSMLM***, shall be submitted***. No copies will be accepted.*** Bids may only be submitted on the Bid documentation issued by the DR. JSMLM.
F.2.13.5 SUBMITTING A TENDER OFFER	The Employer's address for delivery of bid offers and identification details to be shown on each bid offer package are: Location of bid box: Main Gate Physical address: Dr. JS Moroka Local Municipality 2601/3 Bongimfundo Street Private Bag X4012 Siyabuswa 0472 ***BID NO: JSM/W02/22-23/W8***
F.2.15 CLOSING TIME	The closing time for submission of bid offers is: 19 September 2022 at 11:00 Telephonic, telegraphic, telex, facsimile or e-mailed bid offers will **not** be accepted.
F.2.16 TENDER OFFER VALIDITY	The bid offer validity period is **90 days**
F.2.18 PROVIDE OTHER MATERIAL	The bidder shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Clause number	Data
F.2.19 INSPECTIONS, TESTS AND ANALYSIS	Access must be provided for the following inspections, tests and analysis: concrete tests, compaction strength and ball penetration and Access must be provided for the inspection of the tenderer's offices if required.
F.2.23 CERTIFICATES	The bidder is required to ***submit with his bid.*** 1. A copy of the valid Certificate of Contractor Registration issued by the Construction Industry Development Board in terms of the Construction Industry Development Board Act (Form F006); and 2. An original Tax Clearance Certificate , issued by the South African Revenue Services 3. A copy of the valid Certificate of Competency for Contractor's Safety Officer in terms of OH/S Act (85/1993) section 16(2)
F.3.4 OPENING OF BID SUBMISSIONS	The time and location for opening of the bid offers are: Time : 19/09/2022 on 11h00am Immediately after the closing time for submission of bid. Location: Dr. JS Moroka Local Municipality 2601/3 Bongimfundo Street Private Bag X4012 Siyabuswa 0472
F.3.5 TWO-ENVELOPE SYSTEM	A two-envelope procedure will **not** be followed.
F.3.11 EVALUATION OF BID OFFERS	The preference procedure for evaluation of responsive bid offers shall be the **80/20** point preference system, in full compliance with Form 2.3.3. Technical and general criteria will be evaluated in terms of paragraph 2.3.3.10
F.3.13.1 ACCEPTANCE OF BID OFFER	Bids containing any one or more of the errors or omissions, or bids not having complied with any one of the peremptory bid conditions as detailed on page 2 of this bid document, shall not be considered and shall automatically be rejected.
F.3.18 PROVIDE COPIES OF THE CONTRACTS	The number of paper copies of the signed contract to be provided by the Employer is **one.**

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Clause number	Data
ADDITIONAL CONDITIONS APPLICABLE TO THIS BID	The additional conditions of bid are: 1 The Employer may also request that the bidder provide written evidence that his financial, labour and other resources are adequate for carrying out the contract. 2 The Employer reserves the right to appoint a firm of chartered accountants and auditors and/or execute any other financial investigations on the financial resources of any bidder. The bidder shall provide all reasonable assistance in such investigations. 3 The bidder shall be required to complete the Form of Offer and Acceptance (C1.1) and Bills of Quantity for all the document for which they intend to bid for 4 The bid document shall be submitted as a whole and shall **not** be taken apart . 5 **List of returnable documents (PART T2) must be completed in full.** (A bidder's company profile **will not** be used by the DR. JSMLM to complete PART T2 on behalf of the bidder) **NB: If PART T2 is not completed in full by the bidder, this offer will be rejected.**

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Annex F
(Normative)

Standard Conditions of Tender

Note: 1 These Standard Conditions of Tender are identical to that contained In Annex F of *SANS* 294: *2004, Construction Procurement Processes, Procedures and Methods.*

2 Annex E of *SANS* 294, *Construction Procurement Processes, Procedures and Methods,* and SAICE's Practice Manual #1, *The use of South African National Standards in Construction Procurement* , provide guidance on referencing these Standard Conditions of Tender in procurement documents.

F.1 General

F.1.1 Actions

The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently.

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 for the calling for expressions of interest, the following definitions apply:

a) Comparative offer means the tenderer's financial offer after the factors of non-firm prices, all unconditional discounts and any other tendered parameters that will affect the value of the financial offer have been taken into consideration

b) Corrupt practice means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and

c) 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 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 read, copied and recorded. Writing shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a 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.2 Tenderer's obligations

F.2.1 Eligibility

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.2.2 Cost of tendering

Accept that 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 satisfy 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@) 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.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

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.

F2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

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

F.2.12 Alternative tender offers

F.2.12.1 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 a tender offer to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the 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 in Black 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.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

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 will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.14 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. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept tender offers submitted bytelegraph, telex, facsimile or e-mail, unless stated otherwise in the tender data.

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.

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.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

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 clarification

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.3.2 Issue Addenda

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

F.3.3 Return late tender offers

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

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

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, the total of his prices, preferences claimed and time for completion, if any, 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 advice 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 Nondisclosure

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

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

identified in the Scope of Work,

b) 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.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

F.3.9 Arithmetical errors

F.3.9.1 Check responsive tender offers for arithmetical errors, correcting them in the following manner:

a) Where there is a discrepancy between the amounts in figures and in words, the amount in figures shall govern.

b) If bills of quantities (or schedule of quantities or schedule of rates) apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.

c) 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.3.9.2 Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of his arithmetical errors in the manner described in F.3.9.1.

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 it using the tender evaluation method that is indicated in the Tender Data and described below:

Method 1 : Financial offer	1. Rank tender offers from the most favourable to the least favourable comparative offer. 2. Recommend highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 2 : Financial offer and preferences	1. Score tender evaluation points for financial offer. 2. Confirm that tenderers are eligible for the preferences claimed and if so, score tender evaluation points for preferencing. 3. Calculate total tender evaluation points. 4. Rank tender offers from the highest number of tender evaluation points to the lowest. 5. 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.
Method 3 : Financial offer and quality	1. Score quality, rejecting all tender offers that fail to score the minimum number of points for quality stated in the Tender data. 2. Score tender evaluation points for financial offer. 3. Calculate total tender evaluation points. 4. Rank tender offers from the highest number of tender evaluation points to the lowest. 5. 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.

Method 4 : Financial offer, quality and preferences	1. Score quality, rejecting all tender offers that fail to score the minimum number of points for quality stated in the Tender data. 2. Score tender evaluation points for financial offer. 3. Confirm that tenderers are eligible for the preferences claimed, and if so, score tender evaluation points for preferencing. 4. Calculate total tender evaluation points. 5. Rank tender offers from the highest number of tender evaluation points to the lowest. 6. 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.

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

F.3.11.2 Scoring Financial Offers

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

N_{FO}	= W, x A where:
N_{FO}	= the number of tender evaluation points awarded for the financial offer.
W_1	= the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
A	= a number calculated using either formulas 1 or 2 below as stated in the Tender Data.

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

where:

Pm = the comparative offer of the most favourable tender offer.
P = the comparative offer of tender offer under consideration.

F.3.11.3 Scoring quality (functionality)

Score quality in each of the categories in accordance with the Tender Data and calculate total score for quality.

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

F.3.13.1 Accept tender offer only if the tenderer complies with the legal requirements stated in the Tender Data.

F.3.13.2 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. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful tenderer as described in the form of offer and acceptance.

Notice to unsuccessful tenderers
After the successful tenderer has acknowledged the employer's notice Of acceptance, notify other tenderers that their tender offers have not been accepted.

F.3.14 Prepare contract documents
If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the 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, and

d) the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.15 Issue final contract
Prepare and issue the final draft of contract documents to the successful tenderer for acceptance as soon as possible after the date of the employer's signing of the form of Offer and acceptance (including the schedule of deviations, if any). Only those documents that the conditions of tender require the tenderer to submit, after acceptance by the employer, shall be included.

F.3.16 Complete adjudicator's contract
Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both patties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

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.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES:

CONTRACT NO: ***JSM/W02/22-23W8***

FOR

REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

PART T2 LIST OF RETURNABLE DOCUMENTS PAGE(S)
THE BID

The bidder must complete the following returnable documents.

T2.1 RETURNABLE SCHEDULES REQUIRED FOR BID EVALUATION PURPOSES 27

T2.2 OTHER DOCUMENTS REQUIRED FOR BID EVALUATION PURPOSES 41

T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT 78

NOTE:
Although the documents under Part T2 is headed "Returnable Documents" in line with the CIDB model, these are not the only documents to be returned together with the bid. **All** the documents indicated on Part T1, must be completed and signed where applicable and submitted as a **complete set of documents**.

T2.1 RETURNABLE SCHEDULES REQUIRED FOR BID EVALUATION PURPOSES

CONTENTS

PAGE(S)

PART T2 LIST OF RETURNABLE DOCUMENTS

The bidder must complete the following returnable documents.-

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FORM 2.1.2	SIZE OF ENTERPRISE AND CURRENT WORKLOAD……..... …..	29
FORM 2.1.3	STAFFING PROFILE	30
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FORM 2.1.1 SCHEDULE OF EQUIPMENTS REQUIRED FOR THE CONTRACT

The Bidder shall state below what Equipments will be available for the work should he be awarded the Contract.

DESCRIPTION, SIZE, CAPACITY	NUMBER

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.1.2 SIZE OF ENTERPRISE AND CURRENT WORKLOAD

What was your turnover in the previous financial year? R_____

What is the estimated turnover for your current financial year? R_____

Physical facilities:

Provide information on offices, factories, yards and warehouses occupied by your enterprise (attach details if the space provided is not enough)

Description	Address	Area (m²)

List your current contracts and obligations:

Description	Value (R)	Start date	Duration	Expected completed date

Do you have the capacity to supply the goods and services described in this bid, should the contract be awarded to you? ……

FORM 2.1.3 STAFFING PROFILE

Provide information on the staff that you have available to execute this contract (attach a separate list if the space provided is insufficient)

Own staff: gender and race	**Number of staff**
Staff to be employed for the project: gender and race	**Number of staff**

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.1.4 PROPOSED KEY PERSONNEL

The Bidder shall list below the key personnel (including first nominee and the second choice alternate), whom he proposes to employ on the project should his Bid be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their qualifications, experience, positions held and their nationalities.

DESIGNATION	NAME OF **(i) NOMINEE (ii) ALTERNATE**	NATIONALITY	SUMMARY OF **QUALIFICA-TIONS**	**EXPERIENCE AND PRESENT OCCUPATION**	**HDI Status Yes/No**	**NQF 7 Certified Yes/No**
HEADQUARTERS Partner/director						
Project Manager						
Other key staff (give designation)						
PROJECT MONITORING Site(s) Supervisors						
Other key staff (give designation)						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.1.5 SCHEDULE OF PREVIOUS WORK CARRIED OUT BY BIDDER

Provide the following information on **relevant previous experience.** Indicate comparable projects of similar or larger size. This information is material to the award of the Contract.
No points will be awarded if reference cannot be reached or if it refuses to supply information. Give at least two(2) names and telephone numbers and e-mail address per reference.

EMPLOYER (Name, tel no and fax no)	**CONSULTING ENGINEER** (Name, tel no and fax no)	**NATURE OF WORK CARRIED OUT PREVIOUSLY**	**VALUE OF WORK**	**YEAR OF COMPLETION**

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.1.6 FINANCIAL ABILITY TO EXECUTE THE PROJECT

Provide details on the surety you will provide if the bid is awarded to you

AMOUNT

Which of the following institutions will provide surety?

- Bank registered in terms of the Bank Act 1990 (Act 94 of 1990):
- Insurance Company registered in terms of the Short Term Insurance Act 1998 (Act 53 of 1998):

_____

- Cash:

Provide the estimated cash flow on the project in terms of submissions of payment certificates or payment schedules to the Employer

Month no	Amount (VAT included)			
	a **Received**	**b** **Payments made**	**a – b** **Net cash flow**	**Cumulative cash flow**
1			d	j=d
2			e	j+e=k
3			f	k+f=l
4			g	l+g=m
5			h	m+h=n
6			Etc.	Etc.
7				
8				
9				
10				
11				
12				
Maximum negative cash flow: Take the largest negative number in the last column and write it in here → → → → → → →				

Notes:
(i) Value added tax to be included in all amounts
(ii) Assume payment of certificates within 30 days of approval of certificate

From what sources will you fund the above amount (e.g. Funds internally available, bank overdraft, loan, etc)

_____

_____

_____

FORM 2.1.7 AUTHORITY FOR SIGNATORY

All signatories**, including sole proprietors**, shall confirm their authority by **attaching to the last page of this bid** a duly signed and ***dated original or certified copy*** of the relevant resolution of their members or their board of directors, as the case may be.

An *example* for *"COMPANIES / PARTNERSHIPS / CLOSE CORPORATIONS* is shown below:

"By resolution of the board of directors passed on *Date , Mr Name Surname* has been duly authorized to sign all documents in connection with the Bid for *Contract number* ***JSM/W02/22-23W8*** and any Contract, which mayarise there from on behalf of the Bidding Entity, namely, *Company Name* (PTY) LTD"

SIGNED ON BEHALF OF THE BIDDING ENTITY: *Name Surname*

IN HIS CAPACITY AS: *DIRECTOR / PARTNER / MEMBER*

DATE: *... September 2021*

AUTHORISED PERSON'S SIGNATURE: *Name Surname*

AS WITNESS: 1. *Name Surname*

An *example* for *"JOINT VENTURES"* is shown below:

We, the undersigned are submitting this bid offer in Joint Venture and hereby authorize Mr. B. BROOK, authorized signatory of the company "ABCD (PTY) LTD", acting in the capacity of lead partner, to sign all documents in connection with the bid for *Contract number 000/2011* and any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORIZED SIGNATORY
(Lead partner, i.e. "ABCD (PTY) LTD")	P.O. Box 111 Springs 1560	Signature:……..…… Name:……..... Designation:……
Name of 2nd Company	Address of 2nd Company	Signature:……..…… Name:……..... Designation:……
Name of 3rd Company	Address of 3rd Company	Signature:……..…… Name:……..... Designation:……

An *example* for *"SOLE PROPRIETOR"* is shown below:

"I hereby certify that I'm the sole proprietor of the Bidding Entity, namely, "*Company Name*" and therefore duly authorised to sign the bidding documents"

SIGNATURE OF SOLE PROPRIETOR: *Name Surname*

IN HIS CAPACITY AS: *SOLE PROPRIETOR*

DATE: .....*September 2021*

AUTHORISED PERSON'S SIGNATURE: *Name Surname*

AS WITNESS: 1. *Name Surname*

FORM 2.1.8 SCHEDULE OF PROPOSED SUBCONTRACTORS

Provide details on all sub-contractors you intend utilizing for this contract

Type of work to be used for	a % of contract	Name of sub-contractor	b % HDI owner-ship	c = a x b Total contribution to HDI ownership
Total % of contract sub-contracted		Total contribution of HDI ownership:		

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.1.9 FINANCIAL REFERENCES

FINANCIAL STATEMENTS

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

DETAILS OF BIDDING ENTITY'S BANK

If the bidder is a Joint Venture or partnership, the information requested below is required for each member / partner.

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

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO BIDDER
Name of bank	
Contact person	
Branch name	
Branch code	
Street address	
Postal address	
Telephone number	( )
Fax number	( )
Account number	
Type of account, (i.e. cheque account)	

BIDDER'S TAX DETAILS

Bidder's VAT vendor registration number: .....

Bidder's SARS tax reference number: .....

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO BIDDER
Name of bank	
Contact person	
Branch name	
Branch code	
Street address	
Postal address	
Telephone number	( )
Fax number	( )
Account number	
Type of account, (i.e. cheque account)	

BIDDER'S TAX DETAILS

Bidder's VAT vendor registration number: .....

Bidder's SARS tax reference number:

FORM 2.1.10 DETAILS OF ALTERNATIVE BIDS SUBMITTED

See condition of bid.

DESCRIPTION

FORM 2.1.11 AMENDMENTS AND QUALIFICATIONS BY BIDDER

See condition of bid

PAGE	DESCRIPTION

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.1.12 LABOUR-ENHANCED METHODS: PROPOSED PLANNED ACTIONS OF BIDDER RESULTING IN DEVIATIONS FROM SPECIFIED WORK

ACTIVITY OR PAY ITEM	DESCRIPTION OF PLANNED ACTION RESULTING IN DEVIATION FROM SPECIFIED WORK

Compliance with Employment Equity Act 55 of 1998

Attach a valid certificate from the Department of Labour, **or** a declaration (refer to "Form 2.3.5 – Specific goals") by the **designated employer**, that the employer complies with the relevant chapters of the Employment Equity Act.

Definitions in terms of the last mentioned Act.

"designated employer" means-

a) an employer who employs 50 or more employees;
b) an employer who employees fewer than 50 employees, but has a total annual turnover that is equal to or above the applicable annual turnover of a small business in terms of Schedule 4 to this Act."

"Schedule 4"
TURNOVER THRESHOLD APPLICABLE TO DESIGNATED EMPLOYERS

Sector or sub sector in accordance with the Standard Industrial Classification	Total annual turnover
Agriculture	R 2,00 m
Mining and Quarrying	R 7,50 m
Manufacturing	R 10,00 m
Electricity, Gas and Water	R 10,00 m
Construction	R 5,00 m
Retail and Motor Trade and Repair Services	R 15,00 m
Wholesale Trade, Commercial Agents and Allied Services	R 25,00 m
Catering, Accommodation and other Trade	R 5,00 m
Transport, Storage and Communications	R 10,00 m
Finance and Business Services	R 10,00 m
Community, Social and Personal Services	R 5,00 m

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES:

CONTRACT NO: *JSM/W02/22-23W8*

FOR

REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOR PHASE 1

T2.2 OTHER DOCUMENTS REQUIRED FOR BID EVALUATION PURPOSES

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FORM 2.2.1 COMPULSORY SITE INSPECTIONS / INFORMATION / CLARIFICATION MEETINGS

Where Compulsory Site Inspections and Compulsory Information, Briefing or Clarification Meetings are to be held, it shall be subject to the following conditions:

1. **Necessity for Compulsory Site Inspection and Compulsory Information / Briefing / Clarification Meetings**

   Compulsory Inspections / Meetings must only be held where the nature of the contract is such that it requires either an inspection of a site or a briefing session. The Bid Specification Committee should indicate to the Bid Office that such a compulsory inspection or briefing is regarded as a necessity.

2. **Attendance Register**

   An attendance register of potential bidders and the firms they represent shall be kept and signed by attendees. A copy of such Attendance Register shall immediately after the inspection/briefing be sent to the Bid Office.

3. **Confirmation Notes of Inspection/Briefing Sessions**

   Confirmation Notes of the Compulsory Inspection or Briefing Session shall be held by or on behalf of the contact person of the Department for whom the Bid is being advertised. A copy of the notes shall be sent to each firm that was represented at the inspection/meeting as soon as possible after the inspection or meeting and before the closing date of the bid. A copy of the notes shall also be sent to the Bid Office. The relevant Department will ensure that the notes are submitted to the Bid Evaluation Committee and to the Bid Adjudication Committee.

4. **Bid Documents**

   The bid documentation shall clearly state that where the inspection of a site or the attendance of a briefing session is compulsory, non-attendance thereof will lead to the disqualification of the bidder in question. The bid documentation shall further clearly state that if bid documents are obtained **after** the compulsory briefing session or site inspection, it will only be made available to firms that were represented at the meeting. The mere fact that a firm that was not represented at a compulsory site inspection/meeting, but nevertheless submitted to the municipality a set of bidding documents, should not be construed as creating any expectations that a bid will be considered by the Municipality.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.2.1 CERTIFICATE OF BIDDER'S ATTENDANCE AT THE COMPULSORY SITE/CLARIFICATION MEETING

This is to certify that I, ***(NAME IN PRINT)*****.....** ,

representative of (Bidder) .....

.....

of (address) .....

.....

.....

Telephone number .....

Fax number .....

visited and inspected the Site / Attended Clarification Meeting on (date) .....

in the company of (Engineer/Engineer's Representative) .....

SIGNATURE OF BIDDER'S REPRESENTATIVE: .....

FORM 2.2.2 TAX CLEARANCE CERTIFICATE

AN ORIGINAL TAX CLEARANCE CERTIFICATE, OBTAINED FROM SARS TO BE SUBMITTED WITH BID DOCUMENTS.

FORM 2.2.3 PROOF OF REGISTRATION WITH CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

The bidder is to affix to this page either:

- Written proof of his registration with the CIDB as a Category **5CEPE/6CE** or **Higher**

Or

- Written proof of his application to the CIDB for registration as a contractor in the category listed above.

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this bid not being further considered for the award of the contract.
2. Should this bid be considered for award of the contract, based on proof of submission of application for registration in the appropriate category with the CIDB, and should proof of such subsequent registration not be forthcoming to the employer before the end of business, at the last working day, prior to evaluation by the Tender Evaluation Committee of the contract, then this bid will no longer be considered for the award of the contract.

MBD 1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE Dr JS MOROKA LOCAL MUNICIPALITY					
BID NUMBER:	JSM/W02/22 -23W8	CLOSING DATE:	19 September 2022	CLOSING TIME:	11:00am
DESCRIPTION	REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOR				
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:

Main Entrance of Dr. JS Moroka Municipality Head Office Building Head Quarters at 2601/3 Bongimfundo Street

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 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	Supply Chain	CONTACT PERSON	Mr. M Z Skosana
CONTACT PERSON	Mr A Masilela	TELEPHONE NUMBER	013 973 1101
TELEPHONE NUMBER	013 973 1101	FACSIMILE NUMBER	013 973 2463/0974
FACSIMILE NUMBER	013 973 2463/0974	E-MAIL ADDRESS	skosanaz@moroka.gov.za
E-MAIL ADDRESS	masilelaa@moroka.gov.za		

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

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 Date

…….. ……
Position Name of bidder

DECLARATION OF INTEREST

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

   - the bidder is employed by the state; and/or

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

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

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

2.2 Identity Number: ……..

2.3 Position occupied in the Company (director, trustee, shareholder[2], member): ……

2.4 Registration number of company, enterprise, close corporation, partnership agreement or trust: ……

2.5 Tax Reference Number: ……

2.6 VAT Registration Number: ……....

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / PERSAL numbers must be indicated in paragraph 3 below.

[1]"State" means –
(a) Any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
(b) Any municipality or municipal entity;
(c) Provincial legislature;
(d) National Assembly or the national Council of provinces; or
(e) Parliament.

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

2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

2.7.1 If so, furnish the following particulars:

Name of person / director / trustee / shareholder/ member: ……...……..
Name of state institution at which you or the person connected to the bidder is employed: …….
Position occupied in the state institution: ……

Any other particulars:
……
……
……

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector? **YES / NO**

2.7.2.1 If yes, did you attach proof of such authority to the bid document? **YES / NO**

(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.2.2 If no, furnish reasons for non-submission of such proof:

…….
…….
…….

2.8 Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months? **YES / NO**

2.8.1 If so, furnish particulars:
……..
……..
……...

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.9.1 If so, furnish particulars.
……...
……..…
……

2.10 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid? **YES/NO**

2.10.1 If so, furnish particulars**.**

……
……
……

2.11 Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract? **YES/NO**

2.11.1 If so, furnish particulars:

……
……
……

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

Full Name	Identity Number	Personal Income Tax Reference Number	State Employee Number / Persal Number

4 DECLARATION

I, THE UNDERSIGNED (NAME)……

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

…….. ……
Signature Date

…….. ……
Position Name of bidder

SBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

---

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 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

b) The 80/20 preference point system will be applicable to this tender.

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) B-BBEE Status Level of Contributor.

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

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	**100**

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution 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 B-BBEE STATUS LEVEL OF CONTRIBUTOR

4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	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. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

6.1 B-BBEE Status Level of Contributor: . = ……(maximum of 10 or 20 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.

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 *audialteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution.

WITNESSES:

1. ……

……
SIGNATURE(S) OF BIDDER(S)

9. ……

DATE: ……..

ADDRESS: ……..
……

……

MBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Municipal Bidding Document (MBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specificationnumber SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content togetherwith the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (LocalContent Declaration: Supporting Schedule to Annex C)].

1. General Conditions

1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotionof local production and content.

1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.

1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

LC = [1 - x / y] * 100

Where
x is the imported content in Rand
y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1286:2011 is accessible on http:/www.thedti.gov.za/industrial development/ip.jsp at no cost.

1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation;

2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:

Description of services, works or goods	Stipulated minimum threshold
Valves	100 %
_____	_____%
_____	_____%

3. Does any portion of the goods or services offered have any imported content?
(***Tick applicable box***)

YES		NO	

3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on www.reservebank.co.za

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	**Rates of exchange**
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION
(REFER TO ANNEX B OF SATS 1286:2011)

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID NO. .....

ISSUED BY: (Procurement Authority / Name of Institution):
.....
NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thdti.gov.za/industrial_development/ip.jsp. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** DeclarationsD and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned,.....(full names), do hereby declare, in my capacity as …… ……..
of .....(name of bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that:

(i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.
The local content percentages for each product has been calculated using theformula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____ **DATE:** _____

WITNESS No. 1 _____ **DATE:** _____

WITNESS No. 2 _____ **DATE:** _____

Local Content Declaration - Summary Schedule

Annex C

Note: VAT to be excluded from all calculations

(C1)	**Tender No.**	
(C2)	**Tender description:**	
(C3)	**Designated product(s)**	
(C4)	**Tender Authority:**	
(C5)	**Tendering Entity name:**	
(C6)	**Tender Exchange Rate:**	**Pula** ____ **EU** ____ **GBP** ____
(C7)	**Specified local content %**	

Calculation of local content

Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	*(C9)*	*(C10)*	*(C11)*	*(C12)*	*(C13)*	*(C14)*	*(C15)*

Tender summary

Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C16)	*(C17)*	*(C18)*	*(C19)*

(C20) **Total tender value**	
(C21) **Total Exempt imported content**	
(C22) Total **Tender value net of exempt imported content**	
(C23) **Total Imported content**	
(C24) **Total local content**	
(C25) **Average local content % of tender**	

Signature of tenderer from Annex B

Date: _____

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Annex D

Imported Content Declaration – Supporting Schedule to Annex C

(D1) Tender No.	
(D2) Tender Description	
(D3) Designated Products	
(D4) Tender Authority	
(D5) Tendering Entity Name	
(D6) Tender Exchange Rate	***.1.2***

Note: VAT to be excluded from all calculations

Pula		**EU**		**GBP**		

A. Exempted imported content

				Calculation of imported content						Summary	
Tender item no's	**Description of imported content**	**Local supplier**	**Overseas Supplier**	**Foreign currency value as per Commercial Invoice**	**Tender Exchange Rate**	**Local value of imports**	**Freight costs to port of entry**	**All locally incurred landing costs & duties**	**Total landed cost excl VAT**	**Tender Qty**	**Exempted imported value**
(D7)	***(D8)***	***(D9)***	***(D10)***	***(D11)***	***(D12)***	***(D13)***	***(D14)***	***(D15)***	***(D16)***	***(D17)***	***(D18)***

This total must correspond with Annex C - C 21 **(D19) Total exempt imported value**

B. Imported directly by the Tenderer

				Calculation of imported content						Summary	
Tender item no's	**Description of imported content**	**Unit of measure**	**Overseas Supplier**	**Foreign currency value as per Commercial Invoice**	**Tender Exchange Rate**	**Local value of imports**	**Freight costs to port of entry**	**All locally incurred landing costs & duties**	**Total landed cost excl VAT**	**Tender Qty**	**Total imported value**
(D20)	***(D21)***	***(D22)***	***(D23)***	***(D24)***	***(D25)***	***(D26)***	***(D27)***	***(D28)***	***(D29)***	***(D30)***	***(D31)***

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

(D32)Total imported value by tenderer

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. …….

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

C. Imported by a 3rd party and supplied to the Tenderer				**Calculation of imported content**						**Summary**	
Description of imported content	**Unit of measure**	**Local supplier**	**Overseas Supplier**	**Foreign currency value as per Commercial Invoice**	**Tender Exchange Rate**	**Local value of imports**	**Freight costs to port of entry**	**All locally incurred landing costs & duties**	**Total landed cost excl VAT**	**Tender Qty**	**Total imported value**
(D33)	***(D34)***	***(D35)***	***(D36)***	***(D37)***	***(D38)***	***(D39)***	***(D40)***	***(D41)***	***(D42)***	***(D43)***	***(D44)***
								(D45) Total imported value by 3rd party			

B. Imported directly by the Tenderer			**Calculation of foreign currency payments**		**Summary of payments**
Type of payment	**Local supplier making the payment**	**Overseas beneficiary**	**Foreign currency value paid**	**Tender Rate of Exchange**	**Local value of payments**
(D46)	***(D47)***	***(D48)***	***(D49)***	***(D50)***	***(D51)***
				(D52) Total of foreign currency payments declared by tenderer and/or 3rd party	

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above

This total must correspond with Annex C - C 23

Signature of tenderer from Annex B

_____

Date: _____

SATS 1286.2011

Annex E

Local Content Declaration - Supporting Schedule to Annex C

Note: **VAT to be excluded from all calculations**

Tender description:	
Designated products:	
Tender Authority:	
Tendering Entity name:	

Local Products (Goods, Services and Works)	**Description of items purchased**	**Local suppliers**	**Value**
	(E6)	*(E7)*	*(E8)*
		***(E9)* Total local products (Goods, Services and Works)**	

Manpower costs	(E10)(Tenderer's manpower cost)	

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Factory overheads	(E11)(Rental, depreciation & amortisation, utility costs, consumables etc.)	
Administration overheads and mark-up	(E12)(Marketing, insurance, financing, interest etc.)	
	(E13) **Total local content**	

This total must correspond with Annex C - C24

Signature of tenderer from Annex B

Date:

The guidance document can be found at: www.dti.gov.za/industrial_development/docs/ip/guideline.pdf

SBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL BIDDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL BIDDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to …**Dr. JS Moroka Local Municipality**……. in accordance with the requirements and specifications stipulated in bid number… **JSM/W02/22-23W8**, at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and
   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfillment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) …….

CAPACITY …….

SIGNATURE …….

NAME OF FIRM …….

DATE ……..

WITNESSES

1 ……

2. ……

DATE: ……

CONTRACT FORM - PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I……. in my capacity as……..…..
accept your bid under reference number ……..……..……dated……for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.

3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	**PRICE (ALL APPLICABLE TAXES INCLUDED)**	**BRAND**	**DELIVERY PERIOD**	**B-BBEE STATUS LEVEL OF CONTRIBUTION**	**MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)**

4. I confirm that I am duly authorized to sign this contract.

SIGNED AT ……ON……..

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

WITNESSES

1. ……

2. ……

SBD 8

1 MBD 8 - DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

2 This Standard Bidding Document must form part of all bids invited.

3 It serves as a declaration to be used by institutions 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.

4 The bid of any bidder may be disregarded if that bidder, or any of its directors have-
a. abused the institution's supply chain management system;
b. committed fraud or any other improper conduct in relation to such system; or
c. failed to perform on any previous contract.

5 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 of Restricted Suppliers as companies or persons 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 Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied).** The Database of Restricted Suppliers now resides on the National Treasury's website (**www.treasury.gov.za**) and can be accessed by clicking on its link at the bottom of the home page.	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)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	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 outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐

4.4.1	If so, furnish particulars:

CERTIFICATION

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

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

……... **……**
Signature **Date**

……... **……**
Position **Name of Bidder**

SBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Standard Bidding Document (SBD) 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 concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding(or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:

a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.

b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the executionof that contract.

4 This SBD 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 (SBD 9) must be completed and submitted with the bid:

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

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

SBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Institution)

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

SBD 9

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or 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 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.

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

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

SBD 9

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation andor may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

…… ……

Signature Date

…… ……

Position Name of Bidder

FORM 2.2.6 DECLARATION FOR PROCUREMENT ABOVE R10 MILLION

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)

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

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

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

……

……

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

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

2.2 If yes, provide particulars.

……..

……...

…….…..

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

3.1 If yes, furnish particulars.

……..

……..

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

4.1 If yes, furnish particulars

……...

……...

CERTIFICATION

I, THE UNDERSIGNED (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*

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES : TECHNICAL SERVICES

CONTRACT NO: ***JSM/W02/22-23W8***

FOR

REPLACEMENT OF ASBESTOS BULKLINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT

CONTENTS

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FORM 2.3.3	GENERAL INFORMATION……	87
FORM 2.3.4	SPECIFIC GOALS…… ..... ……..	90

FORM 2.3.1 RECORD OF ADDENDA TO BID DOCUMENTS

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

	Date	**Title or Details**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Attach additional pages if more space is required.

…… ……
Signature of Authorized person: Date:

Name: ……..… Position: ……..

FORM 2.3.2 CONDITIONS PERTAINING TO TARGETED PROCUREMENT

2.3.2.1 PREAMBLE
2.3.2.2 DEFINITIONS
2.3.2.3 LEGISLATIVE BASE
2.3.2.4 SCOPE
2.3.2.5 PURPOSE
2.3.2.6 OBJECTIVES
2.3.2.7 GENERAL PRINCIPLES GOVERNING THE MUNICIPALITY IN ITS INTERACTION WITH BIDDERS
2.3.2.8 ADJUDICATION OF BIDS
2.3.2.9 ADJUDUCATION USING A POINT SYSTEM
2.3.2.10 IMPLEMENTATION FRAMEWORK
2.3.2.11 COMPLAINTS/DISQUALIFICATIONS
2.3.2.12 DISQUALIFICATIONS
2.3.2.13 DATABASE ON LOCAL SMME
2.3.2.14 ADDENDUM: DEFINITION OF A SMALL BUSINESS, SPECIFICALLY AN SMME

DR. JS MOROKA LOCAL MUNICIPALITY

BID DOCUMENT

2.3.2 CONDITIONS PERTAINING TO TARGETED PROCUREMENT

THE FOLLOWING IS AN EXTRACT FROM THE REVISED PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000: PREFERENTIAL PROCUREMENT REGULATIONS OF 2001

1. EVALUATION OF TENDERS

Evaluation Criteria

Municipal Supply Chain Management Policy will be used for evaluation of Prospective Service Provider as per the approved scoring system by the specification committee.

The evaluation will be done as per Preferential Procurement Regulations, 2011 issued in terms of section 5 of PPPFA, Act No. 5 of 2000.

The Construction Firm's tender responsiveness in relation to points is therefore summarized as follows:

Organizing and Staffing		25
Plant		15
Experience of Firm		40
Programme and cash flow		10
Bank Ratings		10
	Sub-Total	100

A firm must obtain a minimum of 60 points out of the 100 points above to be considered for price and BBB-EE evaluation/ The functionality points shall be distributed as follows below:

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Project Manager / Contracts Manager (Maximum points obtainable 10; minimum 2)

Name: ……

Evaluation Criteria	Minimum Required		Elimination Factor	Points obtainable	Points Claimed
Academic Qualifications	NQ7-Degree in Civil or equivalent		No	5	
Academic Qualifications	Diploma in Civil or equivalent		No	4	
Academic Qualifications	Diploma in Project Management or equivalent		No	4	
			Yes		
	Matric			2	
Sub-total				**5**	
Experience of Team Leader in similar projects			**Elimination Factor**		
Involvement in comparable projects (Technical)	0		Yes	0	
	1 – 2		No	1	
	3 – 4		No	3	
	5 upwards		No	5	
Sub-total				**5**	
Total				**10**	

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Site Agent: **(*Maximum Points obtainable 5, minimum 2)***

Name: …….

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable	Points Claimed
Academic Qualifications	Diploma in civil engineering or built environment	No	2	
Academic Qualifications	No formal Education in Construction	Yes	0	
Sub-total			**2**	
Years of experience in similar projects	0 - 4	Yes	0	
	5 - 9	No	1	
	10 and above	No	3	
Sub-total			**3**	
Total			**5**	

Note: Should the Site Agent be the same as Contractor Manager zero points will be allocated.

Site Foreman: **(*Maximum Points obtainable 5; minimum 2)***

Name: …….

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable	Points Claimed
Academic Qualifications (Note 10) Form L	N6 in Civil or equivalent	No	2	
Academic Qualifications	Matric	No	1	
Sub-total			**2**	
Years of experience after qualification	0-3	Yes	0	
	4 – 9	No	1	
	10 upwards	No	3	
Sub-total			**3**	
Total			**5**	

Note: Should the Site Foremen be the same Site Agent and Team leader zero points will be allocated

Safety Officer: ***(Maximum Points obtainable 5; minimum 2)***
Name: …….

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable	Points Claimed	
Academic Qualifications	Occupational Health and Safety Certificate or equivalent (SAMTRAC)	No	2		
Sub-total			**2**		
Years of experience after qualification	0-3	Yes	0		
	4-9	No	1		
	10 upwards	No	3		
Sub-total			**3**		
Total			**5**		

Note: Should the Safety Officer be the same as Team leader, Site Agent, Site Foreman zero points will be allocated.

ORGANISING AND STAFFING/PERSONNEL		
PERSONNEL	**TOTAL**	**SCORES**
Construction Manager/Team Leader	10	
Site Agent	5	
Health and Safety Officer	5	
Site Foreman	5	
TOTAL 25		

PLANT (Maximum Points obtainable 15)

It must be noted that total points of **15** are obtainable by the Construction Firm in relation to the requirements as mentioned on the table below, failure to submit evidential supporting documents is not an eliminating factor **BUT** a zero point will be scored. Letter of intent or quotation from the lessor must be attached.

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable (Own)	Points obtainable (leased)	Points Claimed
Firm's plant and equipment – **Note**: Proof of ownership of the firm's equipment must be attached and failure to do so will result in forfeiting the plant points	Excavator x 1	No	5	2.5	
	Tractor Backhoe Loader	No	5	2.5	
	Tipper Truck x1	No	2.5	1.5	
	Water pump	No	2.5	1.5	
Sub-total			**15**	8	
Total			**15**	8	

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

Programme and cashflow (Maximum Points obtainable 10)

It must be noted that total points of **10** are obtainable by the Construction Firm in relation to the requirements as mentioned on the table below, failure to submit evidential supporting documents is not an eliminating factor **BUT** a zero point will be scored.

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable (Own)	Points Claimed
Programme and cashflow	1 Cashflow linked to milestones	No	5	
	1.1 Cashflow not linked to programme and unbalanced	No	2	
	2 Programme with sub activities showing linkages and critical path	No	5	
	2.1 Programme without sub activities and linkages	No	2	
Sub-total			**10**	
Total			**10**	

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

EXPERIENCE OF FIRM (Maximum Points obtainable 40)
Note: Company's previous completed projects

It must be noted that the experience of the firm carries a maximum of **40 points** as indicated in the table below. If proof of testimonials and appointment letters, in reference to Form E not provided, then the bidder shall obtain zero points on the experience of the firm.
Provide proof of the company's previous completed projects which is in the form appointment letters and completion certificates. Verifiable references (**appointment letters and completion certificates**) with contact details must be attached.
Similar projects are for construction of water bulk pipelines works only. (including vat)

Evaluation Criteria	Evaluation Criteria	Elimination Factor	Points obtainable	Points Claimed
Company experience in terms of projects of a similar scope completed (Max 4 projects) undertaken in the last 10 years.	Project of similar scope (*Water Bulk pipelines)* with minimum value R0.5 to R3m- 5 points each	Yes	20(max)	
	Projects of similar scope with minimum value of R3.0 to R7 m- 8 points each.	Yes	32 (max)	
	Projects of similar scope with minimum value of R8m- 10 points each	Yes	40 (max)	
Sub-Total			**40**	
TOTAL(Max)			**40**	

Bank Ratings – Financial Performance	
10 point – Points are allocated for the cash flow management demonstrated by the tenderer from bank rating	
Rating	**Points**
A	**10**
B	**8**
C	**6**
D	**4**
E	**2**
F	**0**

TOTAL SCORE:_____/100

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

ITEM No.	DESCRIPTION	ALLOCATED POINTS
1.	**Price Competitiveness**	**80**

In relation to Tendered Price, the points allocated to the Tender Price will be calculated using the following formula:

$$N_p = 80 * \frac{[1 - (T_s - T_m)]}{T_m}$$

Where: N_P = number of tender adjudication points awarded in relation to price
T_s = Tender Sum
T_m = Lowest Tender Sum

20 – POINTS (FOR BBBEE):

BBBEE status Level of Contributor	**Number of points (80/20)**
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-Compliant contributor	0

In the event of a Joint Venture (JV) Tender:

A Joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate tender.

PLEASE REMEMBER:

- **TO ATTACH A VALID ORIGINAL TAX CLEARANCE CERTIFICATE**
- **IN CASE OF A JOINT VENTURE, THE VALID ORIGINAL TAX CLEARANCE CERTIFICATE OF EACH PARTNER, THIS MUST BE SUBMITTED WITH THE BID DOCUMENT**
- **TO ATTACH A B-BBEE CERTIFICATE**

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

FORM 2.3.3 GENERAL INFORMATION

1. Name of biding entity:

2. Contact details

   Contact name and number:

   Address of bidding entity:

   Postal code:

   Tel no: ( ) Fax no: ( )

   E-mail address:

3. Legal entity: Mark with an X.

Sole proprietor	
Partnership	
Close corporation	
Company (Pty) Ltd	
Joint venture	

In the case of a Joint venture, provide details on joint venture members:

Joint venture member	**Type of entity (as defined above)**

4. Income tax reference number:

   (In the case of a joint venture, provide for all joint venture members)

5. VAT registration number:

   (In the case of a joint venture, provide for all joint venture members)

6. Company or closed corporation registration number:
   (In the case of a joint venture, provide for all joint venture members)

7. Construction Industry Development Board (CIDB) registration number----------

8. Details of proprietor, partners, closed corporation members, or company directors, indicating technical qualifications where applicable (Form on the next page).

9. For joint ventures the following must be attached:

   - Written authority ***of each JV partner,*** for authorized signatory.
   - Written authority to be on the Letterhead of the created Joint Venture
   - The joint venture agreement.
   - The major partner to satisfy at least 40 percent of the turnover and credit amount criteria, and each other partner at least 25 percent of the criteria.

SIGNATURE OF AUTHORIZED PERSON **:** ……

DATE **:** ……

DETAILS OF PROPRIETOR, PARTNERS, CLOSED CORPORATION MEMBERS OR COMPANY DIRECTORS

.1.2.1 Name and Identity Number	.1.2.2 Relevant qualifications and experience	Years of relevant experience

FORM 2.3.4 SPECIFIC GOALS

1 Equity Ownership

List all partners, shareholders or members of bidding entity by name, identity number, citizenship, HDI status and ownership.

In the case of a JV, complete an Equity ownership for each JV member.

Name and Surname	Position Occupied in Enterprise	Identity Number	Citizen-ship	HDI Status (Yes/No)	Date of Ownership	% Owned by HDIs	% Owned by Women	% Owned by Disabled
Total						**A**	**B**	**C**

Note: Where owners are themselves a company or partnership, identify the ownership of the holding firm.

In the case of joint ventures equity ownership for each of the JV members are determined as above, and the combined HDI ownership is then calculated as follows:

Joint venture members	a % Contribution to the JV	b % HDI ownership	c = a * b ÷ 100 % HDI contribution
Total HDI contribution			

A COPY OF A VALID SIGNED JOINT VENTURE AGREEMENT MUST BE ATTACHED TO THE BID DOCUMENT.
FAILURE TO COMPLY WITH ABOVE-MENTIONED WILL RESULT IN REJECTION OF THIS BID

NOTE: See table in paragraph 2.3.3.10 for specific goals and points to be awarded.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

2 SMME Status

Provide details on the following (Refer to attached table):

Sector / Sub-Sector in which located: _____

Total Full-Time Equivalent of paid Employees: _____

Total Annual Turnover: _____

Total Gross Asset Value: _____

Size or Class (Medium, Small, Very Small, Micro): _____

Note: If all of the above does not adhere to the definition of a single class, use the Total Annual Turnover only to decide on the class.

3 Local Content (Defined as Dr JS Moroka Local Municipality)

10% of the goods or services of the bid will have local content?

Description	**a** **% of bid value**	**b** **% Local content**	**c = a x b ÷ 100** **Total % local content**
Management and other			
Materials, goods			
Plant and equipment			
Staff, labour			
Total	**100 %**		**%**

4 JOB CREATION

Provide details on the jobs that you envisage to create through this project:

A. New permanent employed staff, employed outside the staff component declared n Forms 2.3.1 & 2.3.4 to be allocated to this project for the intensification of labour absorption, (i.e. 5 persons for 5 months = 25 person-months).
B. Number of person-months of work to be created (i.e. 5 persons for 5 months = 25 person-months)

Description	**A** **No. of persons**	**B** **Period in months**	**C** **No. of person months created**
A. New permanent employed staff, employed outside the staff component declared n Forms 2.3.1& 2.3.4			**AxB=C**
B. Staff to be employed for the project (Temporary employed)			
Total			

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICE :

CONTRACT NO: ***JSM/W02/22-23W8***
FOR

REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

THE CONTRACT

PART C1 AGREEMENT AND CONTRACT DATA

PART C2 PRICING DATA

PART C3 SCOPE OF WORKS

PART C4 SITE INFORMATION

PART C5 ANNEXURES

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES :

CONTRACT NO: ***JSM/W02/22-23W8***

FOR

REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

PART C1 AGREEMENT AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE

C1.2 CONTRACT DATA

C1.3 FORM OF GUARANTEE

C1.4 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

C1.1 FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

(AGREEMENT)

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works: ***REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1***

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

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

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

_____

rand (in words);
R (in figures),

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

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

FOR THE BIDDER:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____
(Name and address of organisation)

Name and signature of Witness _____

Date _____

ACCEPTANCE

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

The terms of the contract, are contained in

Part C1Agreements and Contract Data, (which includes this Agreement)

Part C2Pricing Data

Part C3Scope of Work

Part C4Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the Bid Data and any addenda thereto listed in the Bid Schedules as well as any changes to the terms of the Offer agreed by the Bidder and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

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

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

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

FOR THE CLIENT:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

DR. JS MOROKA LOCAL MUNICIPALITY
(Name and address of organisation)

Name and signature of witness _____

Date _____

SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the bid documents issued by the Employer prior to the bid closing date is limited to those permitted in terms of the Conditions of Bid.

2. A Bidder'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 bid 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 bid documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject _____

Details _____

2 Subject _____

Details _____

3 Subject _____

Details _____

4 Subject _____

Details _____

5 Subject _____

Details _____

6 Subject _____

Details _____

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

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

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

FOR THE BIDDER:

Signature(s) _____

Name(s) _____

Capacity _____

_____
(Name and address of organisation)

Name and signature of witness

_____ Date _____

FOR THE EMPLOYER:

Signature(s) _____

Name(s) _____

Capacity _____

DR. JS MOROKA LOCAL MUNICIPALITY
(Name and address of organisation)

Name and signature of witness

_____ Date _____

C1.2 CONTRACT DATA
CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works (2015) 3rd Edition, published by the South African Institution of Civil Engineering, is applicable to this Contract and is incorporated herein by reference.
Copies of these Conditions of Contract may be obtained from the South African Institution of Civil Engineering, Tel. No. (011) 805-5947/48/53.

PART 1: DATA PROVIDED BY THE EMPLOYER
The following contract specific data are applicable to this Contract:

Clause	
1.1.1.15 1.2.1.2	The Employer is the Dr. JS Moroka Local Municipality The Employer's address for receipt of communications is: Physical address: Postal address: Dr. JS Moroka Local Municipality Private Bag X 4012 2603/1 Bongimfundo Street Siyabuswa Siyabuswa 0472 0472 Telephone: (013) 973 1101/1390 Fax: (013) 973 2463/0974
	The Engineer is FUBU AFRICA (PTY) LTD The Engineer's address for receipt of communications is: Physical (street address) address: Postal address: No. 2437 Newtown 2437 Newtown Mhluzi Mhluzi, Middleburg 1055 1055 Telephone: 010 820 7337 Fax: 086 267 7586 E-mail: info@fubuafrica.co.za
1.1.1.12 5.1.1	Special non-working days are Sundays and the following statutory public holidays as declared by National or Regional Government: New Year's Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers day, Youth Day, National Women's Day, Heritage Day, Day of Reconciliation, Christmas Day and the Day of Goodwill including the annual year-end shutdown periods as recommended by the South African Federation of Civil Engineering Contractors, and which commence before the Completion Date.
5.12.2.2	Extension of time due to abnormal rainfall will be determined in accordance with the principles as set out in item B1215 to the Scope of Works: Extension of time due to abnormal rainfall
3.1.3	The Engineer is required in terms of his appointment with the Employer to obtain the following specific approvals from the Employer: - Certify additional costs/expenditure - Taking over of the Works - Determining extension of Time for Completion
5.3.1	The Contractor shall commence executing the Works within twenty-eight (28) days of the Commencement Date or immediately after such time as the Documents Required Before Commencement have been approved and the initial requirements have been complied with.
	The documents required before commencement are the following: a) Contractor's health and safety plan (Clause 4.3), b) Programme of Works (Clause 5.6), c) Security (Clause 6.2), and Insurance (Clause 8.6)
5.3.2	The documents required before commencement are to be delivered within 14 (Fourteen) days after the Commencement Date
6.2	The Form of Guarantee must substantially contain the wording of the document included as "Form of Guarantee" – See Form C1.3.
6.2	The liability of the Guarantee shall be in accordance with paragraph 21 (1)(f) of the DR. JSMLM's Supply Chain Management Policy, which reads as follows: (f) where surety is required it shall be in the form of cash, a certified cheque, or a bank guarantee from a banking institution registered in terms of the Banks Act, 1990 (Act No. 94 of 1990) or from an insurer registered in terms of the Insurance Act, 1943 (Act No. 27 of 1943). Where bidders in Category A cannot raise the required surety of 2,5%, and it is feasible to deduct the amount from the first payment certificate, such concessions may be granted;

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

<table>
<tr><td>Clause</td><td></td></tr>
<tr><td></td><td>Guarantees will be required as follows:
<table>
<tr><th>CATEGORY</th><th>PROJECT VALUE</th><th>GUARANTEE</th></tr>
<tr><td>A</td><td>< R500 000</td><td>2,5%</td></tr>
<tr><td>B</td><td>R500 001 – R1 000 000</td><td>5%</td></tr>
<tr><td>C</td><td>R1 000 001 – R2 000 000</td><td>7,5%</td></tr>
<tr><td>D</td><td>>R2 000 000</td><td>10%</td></tr>
</table></td></tr>
<tr><td>7</td><td>The Form of Guarantee is to be delivered within 14 (Fourteen) days after the Commencement Date</td></tr>
<tr><td>8.6.1.1.2</td><td>The value of materials supplied by the Employer to be included in the insurance sum is R 0.00</td></tr>
<tr><td>8.6.1.1.3</td><td>The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is R 0.00</td></tr>
<tr><td>8.6.1.2</td><td>A Coupon Policy for Special Risks is to be issued. (To be approved by the Employer's Claims Management Services Provider)</td></tr>
<tr><td>8.6.1.3</td><td>The limit of the liability insurance is R10 000 000,00 for any single claim – the number of claims to be unlimited during the construction and Defects Liability period. (To be approved by the Employer's Claims Management Services Provider)</td></tr>
<tr><td>8.6.1.5</td><td>The following additional and varied insurances are required:
Not applicable</td></tr>
<tr><td>6.5.1.2.3</td><td>The percentage allowances to cover all charges for the Contractor's and subcontractor's profits, timekeeping, clerical work, insurance, establishment, superintendence and the use of hand tools is 10%</td></tr>
<tr><td>5.5.1</td><td>The whole of the Works shall be completed within 5 Months with effect from date of appointment</td></tr>
<tr><td>5.13.1</td><td>The penalty for failing to complete the Works is R5000,00 per day or part thereof, beyond the stated completion date, for each individual work order or instruction</td></tr>
<tr><td>6.8.2</td><td>Contract Price Adjustment: Is applicable
Price adjustment shall be in accordance with the Contract Price Adjustment Schedule included in the General Conditions of Contract.
The value of "x" is 0,15
The values of the coefficients are:
a = 0,3
b = 0,3
c = 0,35
d = 0,05
The urban area nearest the Site is Marble Hall
The base month is Appointment Month</td></tr>
<tr><td>6.8.3</td><td>The following are special materials:
<table>
<tr><th>Special Material</th><th>Unit</th><th>Rate or Price for the base month</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
The basis for price adjustment for special materials is as follows:
*Indicate whether the material shall be delivered in bulk or in containers.
When called upon to do so, the Contractor shall substantiate the above or price with acceptable documentary evidence</td></tr>
<tr><td>6.10.1.5</td><td>The percentage advance on materials not yet built into the Permanent Works but delivered is eighty percent (80%)</td></tr>
<tr><td>6.10.3</td><td>The percentage retention on the amounts due to the Contractor is 10%</td></tr>
<tr><td>6.10.3</td><td>A Retention Money Guarantee is not permitted.</td></tr>
<tr><td>7.8</td><td>The Defects Liability Period is twelve (12) calendar months per work completed.</td></tr>
<tr><td>10.3</td><td>Disputes are be settled in terms of paragraph 50 of the SCM Policy, which reads as follows:
Resolution of disputes, objections, complaints and queries
(1) The accounting officer must appoint an independent and impartial person, not directly involved in the supply chain management processes –
(a) to assist in the resolution of disputes between the municipality and other persons regarding -
(i) any decisions or actions taken in the implementation of the supply chain management system; or
(ii) any matter arising from a contract awarded in the course of the supply chain management system; or
(b) to deal with objections, complaints or queries regarding any such decisions or actions or any matters arising from such contract.
(2) The accounting officer, or another official designated by the accounting officer, is responsible for assisting the appointed person to perform his or her functions effectively.
(3) The person appointed must –
(a) strive to resolve promptly all disputes, objections, complaints or queries received; and
(b) submit monthly reports to the accounting officer on all disputes, objections, complaints or queries received, attended to</td></tr>
</table>

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

Clause	
	or resolved. (4) A dispute, objection, complaint or query may be referred to the relevant provincial treasury if – (a) the dispute, objection, complaint or query is not resolved within 60 days; or (b) no response is forthcoming within 60 days. (5) If the provincial treasury does not or cannot resolve the matter, the dispute, objection, complaint or query may be referred to the National Treasury for resolution. (6) This paragraph must not be read as affecting a person's rights to approach a court at any time
10.3	Disputes are to be settled in terms of paragraph 50 of the SCM Policy, as set out above, under 58.2.

PART 2: DATA PROVIDED BY THE CONTRACTOR

Clause	
1(1)(h) 1(2)	The Contractor is …… The Contractor's address for receipt of communications is: Physical address: Postal address: …… …… …… …… …… …… …… …… Telephone: …….. Fax: …….. E-mail: ……..
1(1)(m)	The time for completing the works is …… days
37(2)(b)	The percentage allowances to cover all charges for the Contractor's and subcontractor's profits, timekeeping, clerical work, insurance, establishment, superintendence and the use of hand tools is ……%
46(3)	The rate for special materials, exclusive of value-added tax (VAT) are: ……

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……..

Witness: ……..

C1.3 FORM OF GUARANTEE

PRO FORMA

PERFORMANCE GUARANTEE

For use with the General Condition for Contract for Construction Works, Third Edition, 2015

GUARANTOR DETAILS AND DEFINITIONS

''Guarantor'' means: .....

Physical address: .....

''Employer'' means: .....

''Contractor'' means: .....

''Engineer'' means: .....

''Works'' means: .....

''Site'' means: .....

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

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

Amount in words: .....

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

Amount in words: .....

''Expiry Date'' means: .....

.2 CONTRACT DETAILS

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

.3 PERFOMANCE GUARANTEE

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

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

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

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……..

Witness: …….

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……..

Witness: …….

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

Signed at.....

Date.....

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

Capacity.....

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

Capacity.....

Witness signatory (1).....

Witness signatory (2).....

PRO FORMA

ADJUDICATION BOARD MEMBER AGREEMENT

Please note that words in italics within brackets are items which should be stated.

This Agreement is entered into between:

Adjudication Board Member: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

Contractor: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number).*

Employer: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number).*

The Contractor and the Employer will hereinafter be collectively referred to as the Parties.

The Parties entered into a Contract for *(name of project)* which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Third Edition, 2015, must be referred to *(ad-hoc adjudication/standing adjudication)*.

The undersigned natural person has been appointed to serve as Adjudication Board Member and together with the undersigned Parties agree as follows:

1. The Adjudication Board Member accepts to perform his duties in accordance with the terms of the Contract, the General Conditions of Contract for Construction Works Adjudication Board Rules and this Agreement.

2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Engineer for the duration of the Adjudication Board proceedings.

3. The Adjudication Board Member agrees to serve for the duration of the Adjudication Board proceedings.

4. The Parties may at any time, without cause and with immediate effect, jointly terminate this Agreement.

5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No Party may call the Adjudication Board Member as a witness in any such subsequent proceedings.

6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.

7. The Adjudication Board Member shall be paid in respect of time spent upon or in connection with the adjudication including time spent traveling :

   a. A monthly retainer of *(amount)* for *(number)* of months, and/or

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……..

Witness: ……..

b. A daily fee of *(amount)* based on a *(number)* hour day, and/or

c. A hourly fee of *(amount)*, and/or

d. A non-recurrent appointment fee of *(amount)* which shall be accounted for in the final sums payable.

8. The Adjudication Board Member's expenses incurred in adjudication work shall be reimbursed at cost.

Upon submission of an invoice for fees and expenses to the Parties, the *(Contractor/Employer*)* shall pay the full amount within 28 days of receipt of the invoice and he shall be reimbursed by the other party by half the amount so that the fees and expenses are borne equally by the Parties. Late payment of such invoice shall attract interest at prime plus 3 % points compounded monthly at the prime rate charged by the Adjudication Board Member's bank.

This Agreement is entered into by:

Contractor's signature: _____

Contractor's name: _____

Place: _____

Date: _____

Employer's signature : _____

Employer's name: _____

Place: _____

Date: _____

Adjudication Board Member's signature: _____

Adjudication Board Member's name: _____

Place: _____

Date: _____

***** *Delete the inapplicable party*

C1.4 AGREEMENT IN TERMS OF THE OCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

THIS AGREEMENT made at _____

on this the _____ day of _____ in the year _____

between **THE DR. JS MOROKA LOCAL MUNICIPALITY** (hereinafter called "the **Employer**") of the one part, herein represented by

in his capacity as _____

and

_____

(hereinafter called "the Mandatory") of the other part, herein represented by

_____

in his capacity as _____

WHEREAS the Employer is desirous that certain works be constructed, viz **CONTRACT NO.** ***JSM/W02/22-23W8 REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1***

and has accepted a Bid by the Mandatory for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

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

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

(a) the date of the Final Approval Certificate issued in terms of Clause 52.1 of the General Conditions of Contract (hereinafter referred to as "the GCC"),

(b) the date of termination of the Contract in terms of Clauses 54, 55 or 56 of the GCC.

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

(a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act:

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

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

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……..

Witness: …….

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

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

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

4 In addition to the requirements of Clause 33 of the GCC and all relevant requirements of the above-mentioned Volume 3, the Mandatory agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

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

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

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

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

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

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

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:

WITNESS 1 .....

NAME 1 .....
(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATORY:

WITNESS 1 ..... .

NAME 1 .....
(IN CAPITALS)

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

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

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on_____20……, Mr/Ms

_____whose signature

appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 of 1993) on behalf of _____

_____

SIGNED ON BEHALF OF THE COMPANY: _____

IN HIS/HER CAPACITY AS : _____

DATE : _____

SIGNATURE OF SIGNATORY : _____

WITNESS 1 .....……

NAME *1 .....…….* .
(IN CAPITALS)

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES

CONTRACT NO: ***JSM/W02/22-23W8***

FOR

REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

PART C2 PRICING DATA

C2.1 PRICING INSTRUCTIONS

C2.2 BILL OF QUANTITY

C2.1 PRICING INSTRUCTIONS

1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.

2 The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

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

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

3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Contractor submitted on such a basis. The Bill has been drawn up generally in accordance with the latest issue of Civil Engineering Quantities [1]. Should any requirement of the measurement and payment clause of the appropriate Standardized or Project Specification(s) be contrary to the terms of the Bill or, when relevant, to the Civil Engineering Quantities, the requirement of the appropriate Standardized, Project, or Particular Specification as the case may be, shall prevail.

4 Unless stated to the contrary, items are measured net in accordance with the Drawings without any allowance having been made for waste.

5 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Bid is based.

6 The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the schedule of quantities, will be used to determine payments to the contractor.

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

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

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

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

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……..

Witness: …….

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

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

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

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

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

Quantity : The number of units of work for each item

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

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

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

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

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

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

NB: PLEASE STATE THE FOLLOWING:

- **ARE/IS BID PRICE/S FIRM:**

YES	NO

- **IF THE BID PRICE(S) ARE NOT FIRM, SUPPLY THE INFORMATION REGARDING ESCALATION APPLICABLE TO THIS BID:**

…….

…….

CONTRACT NO: ***JSM/W02/22-23W8***

FOR

REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

C2.2 BILL OF QUANTITY

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1	**1200A**	**SECTION 1: PRELIMINARY AND GENERAL**				
1.1	8.3	**FIXED - CHARGE ITEMS AND VALE RELATED**				
1.1.1	8.3.1	Contractual requirements	Sum	1		
	8.3.2	Establishment of Facilities on the Site :				
	8.3.2.1	a) Facilities for Engineer				
1.1.2		(i) Name Boards (PSAB 3.1)	No	2		
1.1.3		(ii) Communication (PSAB 4.1)	Sum	1		
1.1.4		(iii) Offices facilities (furnished office and meeting	No	1		
1.1.3		(v) Parking facilities	No	2		
	8.3.2.2	b) Facilities for Contractor				
1.1.4		(i) Offices and storage sheds	Sum	1		
1.1.5		(ii) Water supply-connection by Council, Electric Power supply - connection by Council and Communications	Sum	1		
1.1.6		(iii) Dealing with water	Sum	1		
1.1.7		(iv) Portable latrines	Sum	1		
1.1.8		(v) Tools and equipment	Sum	1		
1.1.9		(vi) Workshops	Sum	1		
1.1.10		(vii) Security of Works	Sum	1		
1.1.11		(viii) Access to works	Sum	1		
1.1.12		(ix) Plant	Sum	1		
1.1.13	8.3.3	Other fixed-charge obligations (To be specified…..... .....by the Tenderer)	Sum	1		
1.1.14	8.3.4	Remove Engineer's and Contractor's Site establishment on completion of construction	Sum	1		
TOTAL CARRIED FORWARD						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BROUGHT FORWARD						
	OH& S specifications	Occupational Health Safety and Environment				
1.1.15	C4.1	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations including Submission of the Health and Safety File	Sum	1		
1.1.16	C4.1	Allow for compliance with all aspects of the Environment Management specifications including Submission of the Environmental Management Plan	Sum	1		
1.2	**PSA 8.2.2**	**TIME-RELATED ITEMS**				
1.2.1	8.4.1	Contractual Requirements	Sum	1		
1.2.2		Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum	1		
		Operation and maintenance of facilities on the Site for duration of construction, except where otherwise stated:				
	PSA 8.2.2	a) Facilities for Engineer for duration of construction (SANS 1200 AB)				
1.2.3		(i) Name Boards	Months	5		
1.2.4		(ii) Communication	Months	1		
1.2.5		(iii) Offices facilities (office including meeting room)	Months	1		
1.2.7		(v) Parking facilities	Months	1		
1.2.8		(vi) Survey assistants and materials	Months	1		
1.2.9	4.1	Implementation of the OHS plan for the duration of the contract	Month	1		
1.2.10	C4.1	Provision of full-time environmental officer for the duration of the contract	Month	5		
1.2.11		Compliance with the specified environmental requirements for the duration of the contract	Month	5		
1.2.12	C4.1	Provision of full-time construction safety officer for the duration of the contract	Month	5		
	PSA 8.2.2	b) Facilities for Contractor for duration of construction, except where otherwise stated				
TOTAL CARRIED FORWARD						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BROUGHT FORWARD						
1.2.13		(i) Offices and storage sheds	Months	5		
1.2.14		(ii) Water supply-connection by Council, Electric Power supply - connection by Council and Communication	Months	5		
1.2.15	PSA 8.8	(iii) Dealing with water	Months	5		
1.2.16		(iv) Portable latrines- maintenance	Months	5		
1.2.17		(v) Tools and equipment	Months	5		
1.2.18		(vi) Workshops	Sum	1		
1.2.19		(vii) Security of Works	Sum	1		
1.2.20		(viii) Access to the works	Sum	1		
1.2.21		(ix) Plant	Sum	1		
1.2.22	8.4.3	Supervision for duration of construction	Months	5		
1.2.23	8.4.4	Company and Head Office overhead cost	Months	5		
1.2.24	8.4.5	Other time related obligations (To be specified …..... by the Tenderer)	Months	5		
1.30	**SANS 1200 A**	**SUMS STATED PROVISIONALLY BY ENGINEER**				
1.3.1	8.5.b.1	a)Acceptance testing of material and workmanship called for by the Engineer at a nominated laboratory	Prov. Sum	1	60,000.00	60,000.00
		b) Overheads, charges and profit on item 1.4.1	%	60,000.00		
1.3.2	8.5.b.1	Alterations and connections to Municipal Services and repair of damage to services where approved by the engineer.	Prov. Sum	1	20,000.00	20,000.00
		Overheads, charges and profit	%	20,000.00		
1.3.3	8.5.b.1	Training of targeted labour accredited with CETA	Prov. Sum	1	80,000.00	80,000.00
		Overheads, charges and profit on Training item above	%	80,000.00		
TOTAL CARRIED FORWARD						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BROUGHT FORWARD						-
1.3.4	8.5.b.1	Remuneration of Community Liason Officer (CLO)	Prov. Sum	1	30,000.00	30,000.00
		Overheads, charges and profit on Training item above	%	30,000.00		
1.3.5	8.5.b.1	Provision of Specilaised Training for the Installation, Repair and Maintenance to DrJS Moroka Operations Team	Prov. Sum	1	80,000.00	80,000.00
		Overheads, charges and profit on Training item above	%	80,000.00		
1.3.6	8.5.b.1	Telemetery installation	Prov. Sum	1	-	-
		Overheads, charges and profit on Training item above	%	-		-
1.3.7	8.5.b.1	Provision of fittings and labour for leak repairs not covered by the pipe replacement	Prov. Sum	1	150,000.00	150,000.00
		Overheads, charges and profit on Training item above	%	150,000.00		
TOTAL CARRIED FORWARD						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 1: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BROUGHT FORWARD						
	SANS 1200 A					
1.4	8.8	**TEMPORARY WORKS**				
1.4.1	8.8.1	Construct and maintain main access road to works	Sum	1		
1.4.2	8.8.2	Dealing with traffic (or accommodation thre of)	Sum	1		
1.4.3	8.8.3	Protection of adjacent structures until construction in the vicinity is complete	Sum	1		
	8.8.4	**Existing Services**				
1.4.6		a) Supply or hire of specialist equipment for the detection of particular services	Sum	1		
1.4.7		b) The use of equipment referred to in item (a) above	Day	5		
1.4.8		c) Excavation by hand in soft material to expose existing services in the proposed diversion pipeline way.	m^3	40		
1.4.9		d) Temporary protection of existing services as required	Sum	1		
1.4.11		e) Demolish existing boundary walls and gates and reinstate after construction (prov)	m	40		
1.4.12		e) Protection of Survey beacons/stand pegs and submission of certificate from a registered land surveyor confirming non-disturbance of pegs	Sum	1		
1.4.13		Compensation in terms of sub clause 9.1.4 for delays due to the circumstances described in sub clauses 9.1.1 and 9.1.2 of the general conditions of contract of construction works	Work Day	40		
TOTAL CARRIED TO SUMMARY						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 2: DAYWORKS

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	**1200A**	**SECTION 2: DAYWORKS**				
2.1		Labour				
2.1.1		Foreman	hr	10		
2.1.2		Steel Fixer	hr	10		
2.1.5		Artisan (Welder, Plumber, etc)	hr	10		
2.1.6		Pipe layer	hr	5		
2.1.7		Skilled Labourer	hr	10		
2.1.8		Unskilled Labour	hr	10		
2.1.9		Security guard (armed)	hr	10		
2.2		Materials				
2.2.1		Allow for Materials	Prov Sum	1	10,000.00	10,000.00
2.2.2		Overheads, charges and profit on item 2.2.1	%	10,000.00		
2.3		Plant (rates include establishments)				
2.3.1		Front-end Loader, approx. flywheel power 145 kW	hr	10		
2.3.2		Back acting excavator, approx. flywheel power 100 kW	hr	10		
2.3.3		Hand vibrating compactor, static mass	hr	10		
2.3.4		Mobile Crane, 5 tonne at 3m radius	hr	10		
2.3.5		Compressor, 10.3 m^3/min including tools and hoses	hr	10		
2.3.6		Poker vibrator	hr	10		
2.3.7		Concrete Mixer 0.3 m^3 dry mix capacity	hr	10		
2.3.8		50 mm Water Pump including hoses	hr	10		
2.3.9		Tipper, 10 m^3 capacity	hr	10		
2.3.10		Flat bed, 7 tonne capacity	hr	10		
2.3.11		1 tonne LDV	hr	10		
TOTAL CARRIED FORWARD TO SUMMARY						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: …….

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 3: SITE CLEARANCE

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
3		**SECTION 3: SITE CLEARANCE**				
3.1	**1200 C**	**SITE CLEARANCE**				
3.1.1	8.2.1	Clear and grub the working space and provide a pipe laying platform, an access road, pipe storage strip and pipe storage mounds alongside the trench for pipe laying operations	ha	0.45		
	8.2.2	Remove and grub large trees and tree stumps of girth:				
3.1.2		a) over 1m and up to and including 2m	No	2		
3.1.3		b) over 2m and up to and including 3m	No	3		
3.1.4	PSC 8.2.12	Take down existing fences	m	0.0		
3.1.5	PSC 8.2.13	Dismantle and remove pipelines electricity transmission line, cables, etc	m	50		
3.1.6	PSC 8.2.13	Demolish and remove structures/buildings and dismantle steelwork.	Sum	1		
3.1.7	8.2.10	Remove topsoil to nominal depth of 150mm and stockpile on pipeline route only	m^3	450		
TOTAL CARRIED FORWARD TO SUMMARY						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
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4.0	**1200 DB**	**SECTION 4: EARTHWORKS (PIPE TRENCHES)**				
4.1	8.3.1	Excavation				
		a) Excavate by machine in all materials for trenches, backfill, compact and dispose of surplus or unsuitable material for pipes up to 400 mm diameter for dephts:				
		Over and up to				
4.1.1		(a) 0,0 m 1,0 m	m^3	200		
4.1.2		(b) 1,0 m 2,0 m	m^3	2000		
4.1.3		(c) 2,0 m 3,0 m	m^3	40		
		Extra-over items for excavation for items above:				
4.1.4		(a) Intermediate material	m^3	600		
4.1.5		(b) Hard rock material	m^3	640		
4.1.6		c) Excavate unsuitable material from trench bottom and	m^3	600		
4.2	8.3.3	EXCAVATION ANCILLARIES				
		Make up deficiency in backfill material				
4.2.1		i) from other necessary excavations on site	m^3	570		
4.2.2		ii) by importation from commercial or of-site sources selected	m^3	900		
4.3		Finishing				
		Reinstate surfaces of trenched areas with:				
4.3.1		a) Asphalt up to 50 mm thick	m^3	1		
4.3.2		b) Concrete: 25 MPa/ 19 mm 100 mm thick, wood floated finish to match existing	m^3	10		
TOTAL CARRIED FORWARD						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 4: EARTHWORKS (PIPE TRENCHES)

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BROUGHT FORWARD						
4.3.3		c) Brick paving previously removed	m^3	1		
4.3.4		d) Lawn or grass	m^3	1		
4.4	8.3.4	PARTICULAR ITEMS				
		a) Shore trench opposite structure or service for depth				
4.4.1		i) 0m to 1m	m	400		
4.4.2		ii) 1m to 2m	m	500		
4.4.3		iii) 2m to 3m	m	500		
4.5	8.3.5	EXISTING SERVICES THAT INTERSECT OR ADJOIN PIPE				
4.5.1		a) Services that intersect a trench	No	70		
4.5.2		b) Services that adjoin a trench	m	2000		
TOTAL CARRIED TO SUMMARY						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 5: BEDDING

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
5.0	**1200 LB** 8.2.2	**SECTION 5: BEDDING**				
5.1	PSLB	Provision of bedding from trench excavation				
5.1.1		a) Selected granular material	m^3	200		
5.1.2		b) Selected fill material	m^3	200		
5.1.3		c) Extra over item above(a) and (b) for sieving where ordered by Engineer	m^3	400		
5.2	PSLB 8.2.2	Provision of bedding imported from commercial sources (Provisional)				
5.2.1		a) Selected granular material	m^3	1400		
5.2.2		b) Selected fill material	m^3	600		
5.2.3		Supply and install Geotextile membrane (U14) and wrap with 19mm stones for bedding	m^2	1200		
5.2.4		Supply and install 19mm nominal diameter crushed aggregate stone for bedding preparation	m^3	300		
5.2.5		100mm to 300mm dump rock compacted as per the subsoil drainage standard drawings for bed	m^3	100		
TOTAL CARRIED TO SUMMARY						

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

SECTION 6: MEDIUM PRESSURE PIPELINES

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6.0	**1200 L**	**SECTION 6: MEDIUM PRESSURE PIPELINES**				
6.2		Supply, joining, placing, installling and testing of HDPE PE 100 SDR 11 Class 16 pipes including valves, couplings and specials as shown on relevant drawing and detailed on pipe schedule, flanges drilled to Table 16:				
6.2.1		(a) 300mm diameter	m	100		
6.2.2		(b) 400mm diameter	m	1000		
6.2.3		(c) Fittings, Specials, etc	m	1000		
6.2.4		i) 11,25 deg bend	No	3		
6.2.5		ii) 22,5 deg bend	No	6		
6.2.6		ii) 45 deg bend	No	8		
6.2.7		iv) 90 deg bend	No	8		
6.2.8		v) Cast iron 300mm x 300mm Equal Tee to suit uPVC pipes	No	3		
6.2.9		v) Cast iron 300mm x 200mm unequal Tee to suit uPVC pipes	No	3		
6.3	PSL	Tying into existing water line. Supply all fittings to suit pipe size				
		a) New 400mm uPVC/HDPE/ Steel pipes into the following existing AC/ uPVC/HDPE pipe sizes as per the drawing…..				
6.3.1		i) 300mm	No	2		
	8.2.2	Supply and fit GMS bracket pipeline inside the culvert as per the detail drawing 001-12 at road crossing.				
6.3.2		i) 400mm	m	80		
	8.2.2	Supply and install GMS pipe 6mm wal thickness as per the detail drawing 010-01 at stream/ valley crossing.				
6.3.3		i) 400mm GMS flanged with 2 flanged adptor to 315mm uPVC pipe	m	30		
6.3.4	PSL 8.2.17	Pipeline markers: Supply and install pipeline markers as per drawing 010-7	No	10		
TOTAL CARRIED FORWARD						

Bidder:
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2. ……..

Witness: …….

DR. JSMLM:
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SECTION 6: MEDIUM PRESSURE PIPELINES

ITEM NO	PAYMENT SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BROUGHT FORWARD						
	8.2.3	Extra over for the supply, fixing and bedding of Air valves as per **drawing**…... See below the fittings and specials required				
6.3.5		i) Item No. 1 - 50mm RBX 1601 Double Orifice (Small & Large Orifice) with Anti-Shock Orifice Mechanism.	No	3		
6.3.6		ii) Item No. 1 - 80mm RBX 1601 Double Orifice (Small & Large Orifice) with Anti-Shock Orifice Mechanism.	No	3		
6.3.7		iii) Item No. 2 -RSV Gate valve Class 16 to SANS 664 approved	No	3		
6.3.8		iv) Item No. 3 - G.M.S straight steel pipe, 4,5mm wall thickness	No	3		
6.3.9		v) Item No. 4 - 300mm Equal tee flanged both sides G.M.S wall thickness 4,5mm or Cast Iron	No	3		
6.3.10		vi) Item No. 5 - 300mm Straight pipe flanged both sides G.M.S wall thickness 4,5mm 300mm long	No	3		
6.3.11		vii) Item No. 6 - Flange adaptor to suit 3,15mm uPVC pipe	No	8		
	8.2.3	Extra over for the supply, fixing and bedding of Scour valves as per **drawing**…... See below the fittings and specials required				
6.3.12		i) Item No. 1 - 100mm GMS straight pipe, flanged both ends, 1500mm long, 4,5mm wall thickness. Length to be verified on site	No	6		
6.3.13		ii) Item No. 2 - 45 degree GMS elbow, flanged both sides, 4,5mm wall thickness	No	6		
6.3.14		iii) Item No. 3 - 100mm GMS straight pipe, flanged both ends, 1000mm long, 4,5mm wall thickness. Length to be verified on site	No	6		
6.3.15		iv) Item No. 4 - RSV gate valve to SANS 664, Class 16	No	6		
6.3.16		v) Item No. 5 - 100mm GMS straight pipe, flanged both ends, 1150mm long, 4,5mm wall thickness. Length to be verified on site	No	6		
6.3.17		vi) Item No. 6 - Equal tee piece flanged both sides G.M.S wall thickness 4,5mm as per detail	No	6		
6.3.18		vii) Item No. 7 - Tee piece with 100mm branch as shown on the drawings (510mm long), all ends flanged	No	6		
6.3.18		viii) Item No. 8 - Flange adaptor to suit 400mm HDPE pipe	No	4		
	8.2.3	Supply and install complete waterworks type, SANS 664 approved. non-rising spindle, right hand closing, handwheel and ball thrust collar, cast iron, flanged valve of nominal diameter.All valves in and outside coated with epoxy Coupon EP2300 as per the standard drawing no..... including all the fittings				
6.3.19		i) 300mm				
	8.2.13	Construction of valve chambers and structures. Rates to include for the supply of materials, labour for the installation and testing complete as shown on gthe drawings. Rates to exclude Valves, Fittings and specials.				
6.3.20		i) Isolation valve chamber as per standard drawing…...	No	2		
6.3.21		ii) Scour valve chamber as per standard drawing …...	No	1		
6.3.22		ii) Air valve chamber as per standard drawing …..	No	3		
	PSL	Anchor/ Thrust block and pedestal				
6.3.23		a) Concrete Class 20/19 thrust blocks as per standard drawing…..	m^3	20		
TOTAL CARRIED TO SUMMARY						

Bidder:
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2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

SCHEDULE OF SUMMARY

DESCRIPTION	AMOUNT
SECTION 1: PRELIMINARY AND GENERAL	R -
SECTION 2: DAYWORKS	R -
SECTION 3: SITE CLEARANCE	R -
SECTION 4: EARTHWORKS (PIPE TRENCHES)	R -
SECTION 5: BEDDING	R -
SECTION 6: MEDIUM PRESSURE PIPELINES	R -
TOTAL SCHEDULE A	R -
SUB-TOTAL	R -
Add VAT (15%)	R -
TOTAL CARRIED TO FORM OF OFFER AND ACCEPTANCE	**R -**

Bidder:
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2. ……..

Witness: ……..

DR. JSMLM:
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DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: TECHNICAL SERVICES

CONTRACT NO: ***JSM/W02/22-23W8***

FOR

REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1

PART C3 SCOPE OF WORKS

CONTENTS

C3.1 DESCRIPTION OF WORKS
C3.1.1 Employer's objectives
C3.1.2 Overview of the Works
C3.1.3 Extent of Works
C3.1.4 Location of the Works
C3.1.5 Temporary Works

C3.2 ENGINEERING
C3.2.1 Design
C3.2.2 Employer's Design
C3.2.3 Contractor's Design
C3.2.4 Drawings
C3.2.5 Design procedure

C3.3 PROCUREMENT
C3.3.1 Preferential Procurement
C3.3.2 Subcontracting

C3.4 CONSTRUCTION
C3.4.1 Project specifications
C3.4.2 Plant & Material
C3.4.3 Particular Specifications: Additional
C3.4.4 Construction equipment
C3.4.5 Existing services
C3.4.6 Site Establishment
C3.4.7 Site Usage
C3.4.8 Permit & Wayleaves
C3.4.9 Alterations, Additions, Extensions and Modifications to Existing work
C3.4.10 Inspection of Adjoining Properties
C3.4.11 Water for Construction Purposes

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

C3.4.12 Survey Control and Setting Out of the works

C3.5 MANAGEMENT OF THE WORKS

C3.5.1 Generic Specification

C3.6 HEALTH AND SAFETY

C3.6.1 Health and Safety requirements and procedures

C3.6.2 Protection of the Public

C3.6.3 Barricades and lighting

C3.6.4 Traffic control on roads

C3.6.5 Measures against disease and epidemics

C3.6.6 Aids awareness

STATUS

In the event of any discrepancy between the Scope of Works and a part or parts of the Sewer Standard Specifications, the Bill of Quantities or the Drawings, the Project Specifications shall take precedence and prevail in the Contract.

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The employer's objectives are to deliver public infrastructure using labour-intensive methods where possible.

Labour-intensive works comprise the activities described in SANS 1921-5/Earthworks activities which are to be performed by hand/Labour-Intensive Specification(1) and its associated specification data. Such works shall be constructed using local workers who are temporarily employed in terms of this scope of work.

C3.1.2 OVERVIEW OF THE WORKS

The project entails REPLACEMENT OF ASBESTOS BULK PIPELINE FROM WATER TREATMENT PLANT TO KUILEN RESERVOIR PHASE 1. The worksentails the construction of isolation valve, scour and air valve chambers, installation of 1000m long of 400mm diameter HDPE PE100 SDR11 stub and flanged jointed, tie into existing 300mm diameter AC pipeline.
Activities to be performed by Hands to include:

- Soft Excavation and Backfilling
- Formwork
- Placing of Concrete
- Pipe Laying

C3.1.3 EXTENT OF WORKS

- Site Clearing
- Locating, Exposing and protection of Existing Services
- Excavation, trench preparation and compaction
- Supply, Bedding and Laying HDPE pipes
- Backfilling of trenches and testing of installation of pipes
- Concrete Works
- Connection to existing infrastructure
- Installation of Valves and build chambers
- Installation of 400mm diameter galvanized mild steel pipes stream crossing
- Demolition or removal and disposal of replaced chambers
- Repairing of existing leaking AC pipelines

The tenderer 's obligations include strict compliance with any Environmental requirements and/or reports deemed to form part of this Contract as well as any Occupational Health and Safety requirements.

Bidder: **DR. JSMLM:**
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Witness: ……..

This description of the works is not necessarily complete and shall not limit the work to be carried out by the Tenderer under the Contract. Approximate quantities of each type of work are given in the Schedule of Quantities.

C3.1.4 LOCATION OF THE WORKS

The project is in Siyabuswa under Dr. JS Moroka Local Municipality in the Nkangala District of Mpumalanga province. The GPS co-ordinates are as follows:

Start Co-ordinates	:	Latitude -25.115 & Longitude 28.987
End Co-ordinates	:	Latitude -25.086 & Longitude 29.010

C3.1.5 TEMPORARY WORKS

The Contractor for this project is considered aware of that he will be working on an existing water infrastructure, the pricing by the tenderer are considered to include all costs for temporal works for ensuring that there is minimal effect to the conveyance of the water during construction. This include all possible option for the Contractor which will be approved by the Project Engineer and the Client which might include temporal water tanks more especially during the tie in period.

The Tenderer shall, as relevant:

a) Provide temporary drainage works, temporary pumps and other equipment as might be necessary for the protection, draining and dewatering of the works; and

b) Construct and maintain haulage, temporary access and construction roads, subject to the approval of the Engineer, and permit by the Employer, other the Tenderer's statutory bodies or any other person who might require legitimate access to or through the site for executing legitimate business, free and unhindered usage of such roads.

c) Temporary water connections, the Tenderer's offices, storage sheds, latrines, barricading of works shall be in an approved position and subject to the approval of all authorities concerned.

d) Safety and security of the Tenderer's temporary works shall be at the Tenderer's discretion, but always in accordance with stipulated Occupational Health and Safety requirements.

e) The camp shall be adequately guarded during or outside working hours

f) Include the works required to locate, verify and protect existing services within the works area;

g) Be such to ensure no or limited interruption to vehicular and pedestrian traffic; and

h) Be such that existing storm water flow shall not be impeded during survey and construction activities.

Further, The Tender shall note that no stockpiling of materials, plant, excavated materials or any other construction related infrastructure shall be allowed in locations that may interfere with the operations of the Employer and the public in general.

C3.2 ENGINEERING

C3.2.1 DESIGN

Works designed by, per design stage:	
Concept, feasibility and overall process	Employer
Basic engineering and detail layouts to bid stage	Employer
Final design to approved for construction stage	Employer
Temporary works	Contractor
Preparation of as-built drawings	Contractor

(a) The Employer is responsible for the design of the permanent Works as reflected in the Contract Documents unless otherwise stated.
(b) The Contractor is responsible for the design of the temporary Works and their compatibility with the permanent Works.
(c) The Contractor shall supply all details necessary to assist the Engineer in the compilation of the as-built drawings.

C3.2.2 EMPLOYER'S DESIGN

(a) The Tenderer undertakes only construction based on designs issued by the Employer. The Tenderer is to follow the specifications, the design and construction drawings as laid out by the Employer.

C3.2.3 CONTRACTOR'S DESIGN

Where contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional engineer's design certificate.

C3.2.4 DRAWINGS

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimensions shall not be scaled from the Drawings, unless required by the Engineer. The Engineer will, on the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

All information in possession of the Contractor, required by the Engineer and/or the Engineer's Representative to complete the as-built/record drawings, must be submitted to the Engineer's Representative before a Certificate of Completion will be issued.

Bidder: **DR. JSMLM:**
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Witness: ……..

The Drawings prepared by the Employer for the permanent Works are listed below. The Employer reserves the right to issue amended and/or additional drawings during the Contract.

Drawing are included in this Contract Document based on current available information. Such drawings may be updated (based on actual site situation uncovered during execution of the works) and re-issued during the Contract Period as required.

DRAWING NO.	REV	DRAWING DESCRIPTION
FUB/JSM/22/23/DR01	0.00	Drawing Register
FUB/JSM/22/23/KP01	0.00	Key Plan and List of Drawings
FUB/JSM/22/23/LC01	0.00	Locality and overall plan
FUB/JSM/22/23/LS01	0.00	Layout Plan and Long Section Km 0.000 - Km 0.500
FUB/JSM/22/23/LS02	0.00	Layout Plan and Long Section Km 0.500 - Km 1.000
FUB/JSM/22/23/LS03	0.00	Layout Plan and Long Section Km 1.000 - Km 1.500
FUB/JSM/22/23/CR01	0.00	River Crossing 1 (Stream Crossing)
FUB-JSM-22-23-SD07	0.00	TYPICAL DETAILS OF PIPE THRUST BLOCKS
FUB/JSM/22/23/SD08	0.00	CONTRACT NAME BOARD
FUB/JSM/22/23/SD01	0.00	ISOLATING VALVE BOX AND TYPES
FUB/JSM/22/23/SD03	0.00	AIR VALVE CHAMBER
FUB/JSM/22/23/SD04	0.00	SCOUR VALVE CHAMBER
FUB/JSM/22/23/SD05	0.00	PIPE BEDDING CLASS
FUB/JSM/22/23/SD06	0.00	TYPICAL DETAILS OF LOCKABLE CIRCULAR COVER

Additional construction drawings will, in terms of Clause 5.9 of the General Conditions of Contract (2015) 3rd Edition, be issued to the Contractor by the Engineer/Employer on the commencement date and from time to time as required.

C3.2.5 DESIGN PROCEDURES

- *interfaces with existing structures, plant etc;*
- *any temporary works requirements, if any, e.g. specialized items of equipment;*
- *design integration before and during construction;*
- *procedures for all necessary approvals;*
- *special procedures e.g. environmental;*
- *design change procedures, and*
- *record keeping and tracking of documents.*

C3.3 PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT

C3.3.1.1 Requirements

The preferential procurement will be in accordance with the ***Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000***) and the ***Preferential Procurement Regulations 2001.***

Preference points will be awarded for the targeting of local resources in accordance with the resource specification for the Implementation of Targeted Construction Procurement ***SOUTH AFRICA NATIONAL STANDARDS (SANS)***

C3.3.1.2 Resource standard pertaining to targeted procurement

1914-4: 2002: Participation of Targeted Enterprises and Targeted Labour, issued by the South African Bureau of Standards.

Tender evaluation points for preferences is scored in relation to the extent to which the tenderer commits himself/herself to the employment of targeted labour or engaging targeted enterprises in the execution of the contract as reflected in the tendered Contract Participation Goal.

C3.3.2 SUBCONTRACTING

C3.3.2.1 Scope of mandatory subcontract works and specialized works

Mandatory

- The reallocation of specialized services such as Telkom, Eskom cables

Typical Works that can be subcontracted are:

- Building of chambers
- Excavation and Backfilling of Pipelines

The Main Contractor will be required to:

- Sign off on work completed
- Attend progress meetings
- Prepare Method Statement and programme of work
- Draft progress reports; and
- Liaise with the community during construction phase

C3.3.2.2 Preferred subcontractors/suppliers

The will be no preferred specific supplier/subcontractor on this project.

C3.3.2.3 Subcontracting procedures

The names of all proposed Sub-contractors to be employed by the Contractor must be submitted to the Engineer and the client for approval before they are engaged in any activities on site. Approved subcontractors shall not further subcontract work subcontracted to them. Subcontractors should not communicate directly to the Engineer but via the main Contractor. The sub-contractor and contractor shall make use of CLO for sourcing local labour from the local community.

C3.3.2.4 Attendance on subcontractors

Experience Local Contractors will be engaged for the implementation of this project. The Local Sub contractors will be developed without sacrificing the quality of work.

C3.3.2.5 MINIMUM WAGE

C3.3.2.5.1 Requirements

The minimum requirements wage rate for an unskilled Labourer should be R23.19 /hour.

Bidder: **DR. JSMLM:**
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2. …….

Witness: ……..

C3.4 CONSTRUCTION

C3.4.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are the SANS 1200 Standardized specification for civil engineering construction.

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

SANS 10396: 2003	:	Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures
SANS 1914-1 to 6 (2002)	:	Targeted Construction Procurement
SANS 1921 – 1 (2004)	:	Construction and Management Requirements for Works Contracts Part 1: General Contracting and Construction Works where accommodation of traffic is involved:
SANS 1921-2 (2004)	:	Construction and Management Requirements for Works Contracts Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

C3.4.2 VARIATIONS AND ADDITIONS TO REQUIREMENTS OF SPECIFICATIONS

SECTION PSA: GENERAL (Applicable to SABS 1200 A - 1986)

PSA2 DEFINITIONS (Clause 2.3)

"Task" - a quantified activity or operation

"Daily task" - a task that is required to be completed within a given time

"Task work" - work paid by the completed task or job

"Daily rate" - the remuneration of a day's work regardless of output

"Daily wage" - see Daily rate

"Task rate" - the remuneration for a completed Task

"Daily task rate" -the remuneration for a completed daily Task

"Labour intensive construction" - the economically efficient employment of as great a portion of labour as is technically feasible to produce as high a standard of construction as demanded by the specifications and allowed by the funding available, thus the effective substitution of labour for equipment

"Labour based construction" see labour intensive construction

PSA 3 MATERIALS

PSA 3.1 Quality and Samples

Add to the Sub-Clause:

No used or recycled material may be used in the Works unless expressly authorized by the Engineer.

Materials specified as being to the approval of a Standards Bureau shall bear the official mark of the Bureau concerned.

Samples of concrete aggregates and pipe bedding material are to be delivered to an approved laboratory.

Unless otherwise specified, all proprietary material shall be used and placed in strict accordance with the published instructions of the relevant manufacturer

PSA 4 PLANT

PSA 4.2 Contractor's Office and Stores (Refer SANS 1921-1 Clause 4.14)

Add to the Sub-Clause:

Neither housing nor shelters are available for the Contractor's employees, and the Contractor shall make his own arrangements to house his employees and transport them to site.

The Employer will place an area of ground at the disposal of the Contractor at construction site to enable him to erect his site offices, workshops and stores. The temporary facilities and ablution facilities shall comply with the requirements of the Local Authority.

On completion of the Works or as soon as the Contractor's facilities are no longer required the Contractor shall remove such facilities and clear away all surface indications of their presence. The site is to be rehabilitated as described elsewhere.

PSA 5 CONSTRUCTION

PSA 5.1.2 Preservation and Replacement of Pegs subject to Land Survey Act
(Refer SANS 1921 - 1 Clause 4.15)

Add to the Sub-Clause:

Before the commencement of construction work in the vicinity of boundaries, the Contractor, under the direction of the Engineer, shall search for plot pegs where boundaries have not been established by the erection of walls or fences and the Contractor shall compile a list of such pegs that are apparently in their correct positions. At the completion of the contract, the Contractor shall expose the pegs that were listed at the commencement of the construction and the Engineer will arrange for any such pegs that are missing to be replaced at the Contractor's expense.

All plot boundary pegs shall be marked with fencing droppers which shall be painted.

All survey reference marks shall be clearly marked and protected by the erection of three fencing standards.

PSA 5.7 Safety (Refer SANS 1921-1 Clause 4.18)

Add to the Sub-Clause:
All work and particularly work carried out in the proximity of buildings, bridges, tanks or other structures shall be carried out in conformance with the regulations framed under the Occupational Health and Safety Act, 1993 (as amended) and the Minerals Act, Act 50 of 1991 (as amended), including shoring where necessary, to ensure the safety of structures that are at risk.

The Contractor shall make available for the duration of the contract safety helmets, gumboots and any other necessary safety equipment for sole use by the Engineer and his representative(s).

PSA 6 TOLERANCES

PSA 6.2 Degrees of Accuracy

Add to the Sub-Clauses:
Generally, Degree of Accuracy II shall be applicable to the whole of the Works, unless specified otherwise.

PSA 7 CHECKING

PSA 7.1.1 Amend this Sub-Clause as follows:

"The Contractor shall carry out sufficient checks to satisfy himself that the materials used and the workmanship (i.e. the quality of construction, adherence to tolerances and, when applicable, the strength attained) comply consistently with the specified requirements and the results of those checks shall, if so ordered, be made available to the Engineer. The Engineer may carry out such checks as he deems necessary at. any point or at any depth or on any layer, as applicable, and the results of the Engineer's checks shall be made available to the Contractor.

Every completed section of the Works shall be subject to check testing by the Contractor at the minimum frequency specified in the Contract. Once the Contractor has satisfied himself with the standard of his Works, the Engineer will be requested at least 48 hours in advance to perform inspections and/or acceptance testing for the particular section. When giving notice, the Contractor shall provide the Engineer with the results of his check testing indicating that the work complies with the Contract, or advise the Engineer in writing that, although no tests have been performed, he is confident that the requirements of the Contract have been met.

Failure by the Contractor to notify the Engineer or to provide the required information or, where specified, to perform the required test, will be grounds for the Engineer not to certify the associated work as being complete as well as all subsequent work which would be affected by the failure of the work to be tested.

The Engineer will be under no obligation to the Contractor to perform the inspections and/or acceptance tests. The Contractor shall obtain the approval of the Engineer based on the acceptance test results of any specified test before proceeding with subsequent work. If the Engineer elects not to perform a particular inspection and/or test after notification by the Contractor, he will issue the Contractor with a written instruction to proceed with the relevant Works without the inspection and/or acceptance test being performed.

Nothing contained in this Sub-Clause will relieve the Contractor of his responsibilities under the Contract or in any way limit the inspections and/or tests that the Engineer may call for or perform in terms of the Specification. The Contractor shall make due allowance for testing procedures in his construction programme.

Where applicable a Provisional Sum will be provided in Section 1 of the Bill of Quantities to allow for the cost of the Engineer's acceptance tests that meet the requirements of the Contract. The cost of all other testing shall be borne by the Contractor.

The procedure for payment of the Engineer's acceptance testing will be as follows:

The Engineer's laboratory will invoice the Contractor with all acceptance-testing costs including unsuccessful tests. If payment to the Engineer's laboratory is not made within 35 days of the date of invoice the Engineer will subtract an amount equal to twice the amount payable from the subsequent payment certificates until such time as the amounts plus interest at the ruling prime lending rate plus 2% are made.

The Contractor shall be reimbursed for all acceptance tests that meet the requirements of the Specification via the interim Payment Certificates. The Engineer requires 48 hours notice from the Contractor when each stage listed below is reached in order to perform the relevant inspection and/or acceptance test:

Pipe trenches

The Engineer will visually inspect excavations before placement of bedding material. The Engineer will perform density acceptance tests in pipe trenches on the bedding layers, selected backfill and backfill at 300 mm intervals. The Contractor shall notify the Engineer when the pipe trench has been excavated and when each 300 mm increment of backfill has been completed.

Pipework

The Engineer will visually inspect all anchor blocks and pipework before covering up. The Contractor shall notify the Engineer when the pipeworks are ready, before covering up. The Contractor shall perform pressure tests in the presence of the Engineer after the trench has been partially backfilled. Joints and fittings are to remain exposed. The Contractor shall retest the completed pipelines in the presence of the Engineer on completion of all the Works."

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1.2.4 Payments to Service Authorities

Insert the following new Sub-Clause 8.1.2.4:

Where applicable, the Contractor shall make necessary payments to the relevant Services Authorities before commencing work on such services, or for work to be carried out by such Service Authorities.

PSA 8.2.2 Time-related Items

Re-word the third and fourth lines to read:

"Incremental amounts (calculated by the division of the remainder of the tendered sum by the number of remaining months of the duration of construction or as a percentage of construction progress for on the given month as assessed by the Engineer) will be"

PSA 8.8 Temporary Works – Dealing with Water on Works

The tendered sum(s) shall cover the cost of providing, operating and maintaining the necessary equipment and other temporary works for dealing with groundwater in trenches and excavations.

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

SECTION PSAB: ENGINEER'S OFFICE (Applicable to SABS 1200 AB - 1986)

PSAB 2 INTERPRETATIONS

PSAB 2.1(b) Supporting Specifications

Delete the Sub-Clause and substitute the following:

(b) SABS 1200 A

PSAB 2.3 Definitions

Delete the first two lines and substitute the following:

For the purposes of this specification the definitions given in SABS 1200 A shall apply:

PSAB 3 MATERIALS

PSAB 3.1 Nameboards

Delete the first sentence and substitute the following:

The name board shall be of either tempered hardboard at least 12mm thick or steel sheeting so braced on the reverse side as to prevent warping or buckling and shall be mounted on two or more firmly planted poles as necessary. The quality of the paint shall conform to SANS Standard Specification CKS 193. The colour of the paint shall conform to SANS 1091-1975 colour F11, strong blue. The Employer's logo shall be in colour. The height of the larger name board shall be 2400mm and the width 4800mm, whilst the height of the smaller name board shall be 800mm and the width 1600mm".

PSAB 3.2 Office Building(s)

Delete the first sentence and substitute the following:
The Contractor shall supply and furnish three air-conditioned "Kwikjack" (6 m x 3 m) offices, (One for use of the Engineer and his/her staff and one for the Employers' inspectors) and two air-conditioned "Kwikjack" (9 m x 3.4 m each) conference facility for conducting meetings. Minimum size of each air conditioner shall be 12000 BTU.

Add to the Sub-clause:
In addition to the furnishings listed under sub-items (a) to (i), the following shall be provided and properly maintained:

- electrical installation to include a light and two 15A plug points, two pin plugs plus adequately sized air conditioning units (for heating and cooling) for each unit
- one refrigerator of at least 100 litre capacity
- one kettle of at least 2 litre capacity
- one tea set comprising six cups and saucers, six teaspoons, one teapot, one sugar bowl and one milk jug
- covered parking for six vehicles
- un-covered parking space for two vehicles
- two "Barhold" or similar wall mounted racks each with 6 clamps suitable for hanging A0 sized drawings
- two large meeting tables (For meeting room only)
- ten additional chairs (For meeting room only)

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

PSAB 4 PLANT

PSAB 4.1 Telephone

Delete the Sub-Clause and substitute the following:

The Contractor shall provide a cellular phone (Smart) and minimum of 5GB data (per month) for the sole use of the Engineer or his Representative

PSAB 4.2 Survey Equipment (New Sub-Clause)

Add new Sub-Clause:

The Contractor shall provide the following survey equipment on the Site from the commencement to the completion of the Works:

- One tacheometer capable of reading to twenty seconds of arc plus tripod
- One automatic reading Engineer's level plus tripod
- One levelling staff (5 m long, 1 cm graduations)
- One staff angle bubble
- One metal change-point for levelling
- One separate plumb-bob
- One spirit level (one metre long)
- One hammer (2 kg) with steel or wooden pegs as necessary
- One 50 m steel or glass fibre tape
- One 5,0 m (or longer) retractable steel tape

The equipment may be shared by arrangement between the Contractor and the Engineer or his representative on Site. The Contractor shall keep the equipment continuously insured against any loss, damage, or breakage and he shall indemnify the Engineer and the Employer against any claims in this regard. Upon completion of the Works the survey equipment as listed above shall revert to the Contractor.

The Contractor shall maintain the equipment in good working order and keep it clean until the completion of the Works.

PSAB 5 CONSTRUCTION

PSAB 5.2 Engineer's Office (Refer SANS 1921-1 Clause 4.14)

Add to the Sub-Clause:

The two toilet facilities (Female and Male) provided for the sole use of the Engineer or his representative(s), the Employer's inspectors, CLO and PSC shall be maintained in a hygienic and sanitary condition and shall be removed on completion of the Works. The facilities provided shall conform to the local health authority's requirements as applicable and the Contractor shall pay all sanitary fees and charges.

PSAB 5.5 Survey Assistants

Delete the first sentence and substitute the following:

The Contractor shall make available to the Engineer two suitably educated labourers for use on and about the site on survey and other work directed by the Engineer at all reasonable times.

PSAB 8 MEASUREMENT AND PAYMENT

PSAB 8.1 Scheduled Items

Delete the 1st sentence and substitute the following:

Items will be scheduled in terms of Sub-Clauses 8.3.2 & 8.4.2 of SABS1200 A.

PSAB 8.2.1 Fixed and Time-related Charges

Delete the 1st sentence and substitute the following:

The terms of Sub-Clause 8.2 of SABS 1200 A shall apply.

PSA 4.5 Occupational Health and Safety

Add the following new pay items:

Provision for the cost related to the Occupational Health and Safety Act, 85 of 1993, and the relevant Regulations:

a)	Preparation of a Health & Safety Plan.	Unit: Sum
b)	Compilation of a Risk Assessment prior to Construction.	Unit: Sum
c)	Health & Safety induction Training of employees.	Unit: Sum
d)	Compilation and keeping up to date the Health & Safety file which shall include all documentation required in terms of the act.	Unit: Sum
e)	Implementation of the Health and Safety Plan over the entire construction period.	Unit: Sum

The tendered sum shall include full compensation for providing the above services as required from the Occupational Health & Safety Act. The rate shall include all related costs incurred by the Act, remuneration of personnel, trainers, etc. and equipment required for the execution of the required services as depicted by the Act. The tendered amount for items a, b, c and d shall only be paid on the successful completion of the task as approved by the client. The tendered amount for item shall be paid on a monthly basis.

SECTION PSC: SITE CLEARANCE (Applicable SABS 1200 C - 1980 As Amended 1982)

PSC 3 MATERIALS

PSC 3.1 Disposal of Material

Add to this Sub-clause:

Material obtained from clearing shall be disposed of offsite by the Contractor at his expense. Disposal of combustible material by burning will not be permitted. The Contractor will be held responsible for observing the by-laws and regulations of the local authority.

PSC 5 CONSTRUCTION

PSC 5.2.3.2 Individual Trees

Delete the second sentence of the Sub-Clause and substitute the following:

The amount of the penalty payable by the Contractor for the removal or damage by him of a tree designated for preservation shall be R5 000.00 for each tree having a girth of less than 1 000 mm and R10 000.00 for each tree having a girth of 1 000 mm or more.

PSC 5.3 Clearing

Add the following new Sub-Clauses:

PSC 5.3.1 Restoration of Fences onto Servitude Boundary (Sub-Clause 5.3.1)

Where existing fencing is encroaching on the water treatment works servitude, such fencing shall be removed prior to construction and re-erected to a condition no worse than that pertaining prior to the removal, on the formal cadastral boundary all as indicated on the respective land plans. For the period that the fence or wall is dismantled and not yet re-erected, the Contractor shall erect, at the end of each day's operations, a temporary fence to close the gap in the existing fence or wall and shall maintain security adequate to prevent use of the temporary fence as a point of access by unauthorised persons.

PSC 5.3.2 Temporary Fencing Closures (Sub-Clause 5.3.2)

Where the treated water pipeline route crosses an existing fence or wall, a section of fencing or wall not exceeding 10,0 m in length may be removed temporarily during construction and thereafter reinstated to a condition no worse than the original condition as soon as the pipeline has been installed and backfilled in the immediate vicinity of the crossing. For the period while the existing fence or wall is dismantled, the Contractor shall erect, at the end of each day's operations, a temporary fence to close the gap in the existing fence or wall and shall maintain security adequate to prevent use of the temporary fence as a point of access by unauthorised persons.

PSC 5.3.3 Demarcation Fencing (Sub-Clause 5.3.3)

The Contractor shall supply, install and maintain temporary fencing on around the working area (servitude) and around the perimeter of all agreed additional working areas during construction for prevention of unauthorised access and shall remove the fencing on completion of the works.

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

The fencing shall comprise 2m high Bonnox 4 x 4 Mesh fencing, Bonnox pattern 1972/4, with straining posts and straining wires as required and according to supplier's directions and with mesh spacing not exceeding 100mm in both the vertical and horizontal directions. Chevron tape shall be interwoven in a zig zag pattern from the top to the bottom of the fence thereby clearly marking off the working area.

Gates shall be provided by the Contractor at all points as required for construction access purposes. The Contractor shall be held responsible for the control of access at these gates at all times as well as to the worksite during removal and re-erection of fencing. No other opening in the fence shall be permitted and the Contractor shall be responsible for monitoring the fencing on a daily basis and repairing any such opening within the same day that it is detected. Notices in four official languages (English, iSiswati, North Sotho and Afrikaans) shall be attached to the fence where appropriate to indicate that the site is for personnel employed on the Contract only and that unauthorized entry is forbidden.

PSC 5.6 Conservation of Topsoil and 8.2.10

Add to the Sub-Clause:

All topsoil shall be conserved for later use by stockpiling clear of the working area.

PSC 5.8 Demolition of Structures

Add the following new Sub-Clauses:

PSC 5.8.1 Removal and Re-Erection of Structures

Where the Contractor is directed to dismantle structures to facilitate construction and thereafter to re-erect the same structures, the structures shall be erected at the same locations, or such other locations as may be required by the owner within the same property, using the same or similar materials as those set aside when removing the structure. The acceptance of the work by the Engineer and certification for payment shall be subject to the Contractor submitting to the Engineer documentary evidence of the owner's satisfaction with the re-erected structure the over-riding consideration being that it shall be in a condition no worse than that pertaining prior to its removal.

The tendered rates shall include for the provision of a detailed photographic and written record of the structures before dismantling commences and following re-erection.

PSC 5.8.2 Demolition of Building Structures

Where the Contractor is directed to demolish structures, the Contractor shall provide a Method Statement for the approval of the Engineer. Entering upon the premises for the purpose of the demolition shall not commence before the Contractor has received a release form, duly authorized by representatives of the Employer and the Engineer, in which any special conditions applicable to the demolition are documented.

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.2 Scheduled Items

PSC 8.2.12 Temporary Fencing Closures (New Sub-Clause)

Separate payment will be made for dealing with fences in the manner specified in PSC 5.3.2 above including re-instatement as scheduled.

PSC 8.2.13 Removal and Re-Erection of Structures (New Sub-Clause)

Separate payment will be made for removing and re-erecting structures in the manner specified in PSC 5.8.1 above as scheduled and including for the costs of photographic and written records.

PSC 8.2.14 Demarcation Fencing (New Sub-Clause)

Payment will be made per linear metre of temporary fencing installed in the manner specified in PSC 5.3.3 above, and the rate shall include for maintaining such fencing in good condition, including daily surveillance and repair, throughout the duration of construction and removal on completion of the works.

SECTION PSD: EARTHWORKS (Applicable to SABS 1200 D - 1988)

PSD 3 MATERIALS

PSD 3.1.2 Classes of excavation

Notwithstanding the provisions of Sub-Clause 3.1.2, the materials excavated, other than hard rock, will not be classified for the purposes of measurement and payment. The unit rate for excavation shall cover the cost of excavation in all materials with the only extra-over items payable being those for excavation in hard rock.

PSD 4 PLANT

PSD 4.5 Restriction on use of Plant

Add new Sub-Clause:

Where the Contractor finds it impractical to use mechanical plant for excavation or to complete portions of the work due to restrictions caused by difficult access or the presence of existing structures, pipelines or services shown on tender drawings, the Contractor will be deemed to have satisfied himself as to the alternative requirements when entering rates against the appropriate items in the Bill of Quantities as no claim for extra payment based on the inability to use plant in such circumstances will be considered.

PSD 4.6 Vibration loadings from use of Plant

Add new Sub-Clause:

The onus will be on the Contractor, when proposing to use heavy plant or equipment to complete work in close proximity to existing structures, pipelines or services, to determine the effect of the vibration loading from the plant or equipment on the supporting ground or foundation and the structure, pipeline or service and take all necessary steps to ensure that the stability or integrity of the element concerned is not compromised by the particular selection and use of plant or equipment.

Any damages caused to existing elements directly or indirectly arising out of the use of plant and equipment in close proximity shall be made good, to the satisfaction of the Engineer by the Contractor at his own expense.

PSD 5 CONSTRUCTION

PSD 5.1.1.1 Barricading and Lighting (Refer SANS 1921-1 Clause 4.18.2 and 4.18.3)

Delete the Sub-Clause and substitute:

Without limiting any obligation which the Contractor may have in terms of any Act, Ordinance or other legislation, the Contractor shall ensure that all excavations which are accessible to the public or which are adjacent to a public road or thoroughfare, or by which the safety of persons may be endangered are protected as set out in Clause 13 of the General Safety Regulations of the Occupational Health and Safety Act, 1993 (as amended) and that watchmen are employed to ensure that barricades, barriers and lights are effective at all times.

Trench excavations shall be protected by means of at least two horizontal double sided ‘red/white; chevron tapes approved by the Engineer. The tapes shall be stretched tightly between supports along both sides and ends of the excavation at levels approximately 0.45m and 1.12 m above the ground. The supports shall consist of poles or iron standards securely planted in solid ground at not more than 10 m centres so as to enclose the spoil and the excavations

Bridges for vehicles and/or pedestrians shall be provided along the route of the work as and where may be considered necessary by the Engineer. They shall consist of a number of suitably sized steel plates laid across open excavated trenches. They shall be protected on each side by a stout two rail timber safety barrier, at least 1m high, consisting of 150 x 75 mm timber verticals set firmly into the ground and, 75 mm x 50 mm rails securely fastened to them. At least 4 lamps or reflective markers shall be provided at each crossing.

Where construction is in, or across, public roads the barricades or barriers and temporary road signs that are erected shall comply with the requirement of the relevant authority. All such signs and positioning thereof shall comply with the requirements set out in Road Note 13 read in conjunction with the SA Road Traffic Signs Manual.

PSD 5.1.4.3 Disposal (Sub-Clause 5.1.4.3 and 5.2.2.3)

Amend this Sub-Clause as follows:

"The Contractor shall not spoil, stockpile or waste any material without approval. He shall dispose of surplus and unsuitable material in areas designated on the drawings or in the project specification. Unsuitable material from stockpiles or excess material shall be removed from site and transported to a suitable disposal site approved by the Engineer. Spoil heaps shall be flattened to present a neat level or graded surface."

Dumping shall proceed in an orderly manner with coarse material placed at the bottom and covered with finer material, where possible. Upon completion of dumping the material shall be shaped to provide free-draining surfaces and slopes and finished off to the satisfaction of the Engineer.

PSD 5.1.6 Road Traffic Control

In the 4th line of Sub-Clause 5.1.6 amend "South African road traffic signs manual1)" to read: "Southern African Development Community: Road Traffic Signs Manual1) and Chapter 13: [Road works Signing] of the South African Road Traffic Signs Manual1) ", and amend the footnote to read:
"1) Published by the Department of Transport, Pretoria."
Where traffic signals are required, they shall be provided and operated in accordance with the applicable requirements of the South African Road Traffic Signs Manual.

Where work is to be carried out while half of the roadway is closed to traffic, flagmen shall be provided and temporary road signs shall be erected, maintained and operated
PSD 5.2.3.2 Backfilling of Trenches and backfilling or filling against Structures

Add this paragraph under this Sub-Clause:

"(a) General.
Where ordered by the Engineer, the Contractor shall bench the foundations of the structures using cement-stabilized G5 gravel from commercial sources compacted to 98% Mod AASHTO density. The saturated UCS value shall not be less than 3 MPa.

After construction, backfilling and compaction of material shall commence as follows:

General backfill material shall be placed in layers of maximum thickness 250 mm and each layer compacted to 90% Mod AASHTO
Restricted backfill material shall be placed in layers of maximum thickness of 250 mm and each layer compacted to 90% Mod AASHTO
Topsoiling: Topsoil material shall be spread over areas designated for topsoiling to a layer thickness of 150 mm.

PSD 5.2.1.1 Clearing or clearing and stripping of site

Delete the last sentence and substitute:

"Material so removed shall be disposed of by the Contractor to the designated landfill identified by the Contractor and approved by the Engineer".

PSD 5.2.2.1 Excavation (Refer SANS 1921-1 Clause 4.10)

Add the following to sub-clause (d)

In order to minimize potential differential settlement of the shallow foundations for the proposed new works in relation to existing or new valve chambers or undermining of the existing structures, it may be necessary to carry out ground improvement.

Once excavation to the base of the existing structure has taken place, a Dynamic Cone Penetration Test (DCP) shall be carried out to a minimum depth of 1m to ascertain the necessity or otherwise to carry out the ground improvement. DCP results of ≥5 blows per 100 mm are deemed to indicate the presence of stiff clays.

Where stiff clays are encountered in the 1m zone below the existing structure, it is recommended that the clay is immediately blinded with a lean mix of concrete and construction proceed on the basis of a “raft” type foundation / base slab supporting the sidewalls of the new structure.

If the clays are soft or loose sand is encountered, vertical lightweight trench sheeting is to be vibrated or driven down as close as possible to the existing foundations for a distance of at least 1,0 to 1,2 m below founding level.

The base area shall then be over-excavated, both vertically and horizontally, and the material shall be replaced with well compacted granular material (G6 minimum). The surface shall be blinded with a lean concrete mix after removal of the trench sheeting, following which the base slab to support the sidewalls shall be cast.

Add the following to the Sub-Clause:

Where outside shuttering is ordered by the Engineer, the excavations shall be carried out for an extra width of not more than 600 mm all around the structure, measured from the base of the face to be shuttered, to allow for the shuttering to be fixed, this extra excavation and refilling where necessary is to be measured and paid for under quantities allowed for this purpose in the Bills of Quantities. Outside shuttering shall be used for the construction of all major structures unless ordered otherwise by the Engineer.
Where permanent concrete is to be placed against an excavated face, the excavation shall be trimmed to ensure that there is no projection greater than 20 mm protruding into the excavation profile.
The Contractor shall not spoil, waste or stockpile excavated material without approval.

PSD 5.2.3.1 Embankments

In the fourteenth line delete “600 mm” and substitute “300 mm”

In the seventeenth line delete “300 mm” and substitute “150 mm”

Delete the twentieth line and substitute the following:

Each layer shall be compacted to achieve 90% modified AASHTO density except where indicated otherwise on the Drawings

PSD 5.2.5 Transport of Earthworks

Delete the wording of Sub-Clause 5.2.5 and replace with the following:

All haul will be regarded as freehaul. No overhaul will be paid under this contract.

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.1.3 Restricted excavation

The provision of working space (see Sub-Clause 8.3.5) will not be measured for payment. Notwithstanding the provisions of Sub-Clause 8.1.3, the Contractor shall make his own allowance for the excavation of any working space required for formwork or other purposes. The rates for restricted excavation shall also cover the costs of providing working space. All restricted excavation will be measured to the net dimensions of concrete floor slabs or other dimensions ordered by the Engineer

SECTION PSDB: EARTHWORKS (Pipe Trenches) (Applicable to SABS 1200 DB - 1989)

PSDB 3 MATERIALS

PSDB 3.4 Selected Fill Material

Not required. All material up to the underside of backfill shall be measured as selected granular.

PSDB 3.5(a) Backfill Material

In the third line delete "150 mm" and substitute "100 mm".

PSDB 3.5(b) Backfill Material

In the second line delete “PI not exceeding 12” and substitute “PI not exceeding 6”.

PSDB 3.5(c) Cement Stabilized Backfill

Add the following new Sub-Clause:

Where scheduled, or directed by the Engineer, backfill shall be stabilized with 4% cement by mass. The backfill material shall have a plasticity index not exceeding 10 and all material shall pass through a sieve of aperture size not exceeding that specified in SABS 1200 LB, Sub-Clause 3.2, as amended.

The dry materials shall first be mixed in a concrete mixer thereafter sufficient water is to be added to produce the stiffest consistency available for placing and compacting with vibrators.

PSDB 3.6 Materials for Reinstatement of Roads and Paved Areas

Delete the Sub-Clause and substitute:

Material used in the reinstatement of roadways shall fall into the following relevant categories:

(a) Foundation material recovered from the excavation of trenches across existing roadways which, if so instructed by the Engineer, shall be set aside and re-used as sub-base material.

(b) New material which shall conform to the requirements of:
Clause 3.2.1 of SABS 1200 ME for the Subbase
Clauses 3.2 and 3.3 of SABS 1200 MF for the Basecourse
Clause 3.2.2 of SABS 1200 ME for the Gravel Wearing Course
Clause 3 of SABS 1200 MH for the asphalt surfacing

PSDB 3.7 Selection

Delete the second sentence and substitute the following:

The Contractor is not required to use selective methods of excavating but shall, if so instructed by the Engineer, screen or otherwise treat excavated material in order to produce material suitable for the bedding cradle or the bedding blanket.

PSDB 4 PLANT

PSDB 4.1 Excavation Equipment

In the first line delete “The Contractor” and substitute: “In sections deemed to be excavated by mechanical means, the Contractor”

Add to the Sub-Clause:

Should any portion of a pipe trench exceed the specified depth, the Contractor will be held responsible for any additional costs which may arise as a result of such over-excavation. Concrete filling or imported compacted fill may be ordered by the Engineer to be placed below the bottom of the trench.

PSDB 5 CONSTRUCTION

PSDB 5.1.2.3 Sloping Ground

Delete the Sub-Clause and substitute:

The Contractor shall be responsible throughout the duration of the Contract, inclusive of the Defects Liability Period, for the provision of all soil erosion preventative measures necessary to protect the trenches, pipeline(s) and land utilised by the Contractor during the Contract from any adverse effects of soil erosion, settlement, scour, etc., resulting from the construction of the Works.

Cross embankments, generally extending across the full width of the working strip, consisting of low earth mounds shaped to rounded form and so oriented as to have a fall of 1% along their length, shall be constructed with compacted material having a minimum density of 90% modified AASHTO density and minimum dimensions and maximum spacings dependent on the slope of the ground along the length of the pipeline, as indicated in the following table:

Slope of Ground	Minimum Height	Minimum Base Width	Maximum Spacing
0% - 5%	No cross-embankments required		
5% - 10%	300 mm	1,2 m	40 m
10% - 15%	375 mm	1,5 m	30 m
Greater than 15%	450 mm	1,7 m	20 m

The height of the cross-embankments for a distance of 1 metre on either side of the trench centreline shall be raised 150 mm above the remainder of the cross-embankment to allow for settlement. In order to form a satisfactory drainage channel upstream of each cross-embankment (at a slope of 1%) the crown over the backfilled trench shall be removed for a distance of 0,5 m upstream of the cross-embankment.

Cross-embankments shall be constructed to the same minimum standards and dimensions indicated above wherever artificial slopes have been formed on the working strip or other areas used during construction and, with the approval of the Engineer, are permitted to be so left.

Payment will be made for the construction of cross-embankments in accordance with Sub-Clause 8.3.4(c), provided construction thereof has been either ordered or approved by the Engineer prior to the commencement of such construction.

PSDB 5.1.2.4 Cross-Walls in Trenches (New Sub-Clause)

In steeply sloping trenches (longitudinal slope > 15 %) and where otherwise ordered by the Engineer, the Contractor shall place sacks of earth as sack breakers or cross walls around and above the pipe up to ground level, prior to backfilling, as a soil erosion measure. Such sacks shall be filled with selected material free of stones in excess of 50 mm maximum dimension. One sack breaker shall consist of these sacks packed tightly against the trench bottom, pipe and actual trench sides, and against each other to form a solid cross wall at least 0,5 m thick from the bottom of the trench to the surface.

PSDB 5.2 Minimum Base Widths

Add to the Sub-Clause:

Trench sides shall be as near vertical as possible in order to minimise the quantity of backfill material required and to avoid possible difficulties where pipelines have to be installed parallel to existing services, fences, hedges, etc and to minimise the loading on the pipe.

The base width for trenches for cables, ducts and unbedded flexible continuous piping, of external diameter less than 125 mm laid at a depth not exceeding 1,5 m, shall be equal to the external diameter of the cable, duct or pipe, plus a side allowance of 200 mm on either side.

PSDB 5.4 Excavation

Add to the Sub-Clause:

Where the pipe trench crosses surfaced roads the Contractor shall neatly cut two parallel grooves into and through the "black top" before excavating between the grooves. The grooves are to be set back at least 200 mm from the edge of the excavation face to prevent ravelling of the cut edge. The cost of this operation, where not scheduled separately, will be held to be covered in the general rates for excavation.

PSDB 5.5 Trench Bottom

Add to the Sub-Clause:
In waterlogged conditions and/or where so instructed by the Engineer a 150 mm thick layer (See PSLB 5.2.5) of imported single sized stone (19 mm size unless otherwise instructed by the Engineer) with a geofabric filter surround (“Bidim” Grade A4 or similar approved) shall be constructed under the bedding layer specified for the pipes.

PSDB 5.5.1 Jointing Holes (New Sub-Clause)

Jointing holes shall be cut of sufficient length and depth to allow for the proper making or bolting of pipe joints and to ensure that joint collars or sleeves do not rest on the trench bottoms. After the pipework has been inspected, tested and approved by the Engineer, the jointing holes shall be refilled with selected soft material free from stone and then rammed to provide a continuous uniform support for the pipework. No specific payment will be made for forming and refilling holes, the cost of which will be deemed to be included in the tendered rates.

PSDB 5.6.1 Backfilling – General

Add to the Sub-Clause:
Notwithstanding the requirements of Sub-Clauses 5.6.1 and 5.6.6, no pipe joint or pipe fitting shall be covered by either blanket or backfill material prior to the successful completion of the visual inspection and pressure testing of the relevant section of the pipeline.
All backfilling shall be carried out by hand and the Contractor shall price his tender accordingly. No mechanical plant shall be used in backfilling without prior written consent of the Engineer.

PSDB 5.6.2 Material for Backfilling

Delete fourth, fifth and sixth lines and substitute the following:
Hard rock material shall not be used for, or incorporated into, the backfill above the bedding layers without the Engineer's approval.

PSDB 5.6.3 Disposal of Soft Excavation Material

Add to the Sub-Clause:
Surplus material or unsuitable material shall be disposed of offsite by the Contractor.

PSDB 5.6.4 Disposal of Intermediate and Hard Rock Material

Add to the Sub-Clause:

Surplus intermediate and hard rock material from trench excavations shall be disposed of offsite by the Contractor.

PSDB 5.6.8 Transport for Earthworks for Trenches

Delete the Sub-Clause and substitute:

The requirements of Sub-Clause 5.2.6 of SABS 1200 DA as amended and as applicable shall apply.

PSDB 5.7.2 Areas subject to Traffic Loads

Add to the Sub-Clause:

for an extent of 2 m on either side of the carriage-way at each crossing.

PSDB 5.9.4 Bitumen Roads, Sub-Base and Base

Each Tenderer shall include in his tender allowances to cover the costs of reinstating all surfaces and inclusive of all layers to their conditions pertaining before the commencement of construction.

Items have been included in the Bill of Quantities to cover the reinstatement of certain surfaces (grassed lawns, concrete and/or asphalted/gravel driveways and/or roads) and for payment purposes, the area of those specific surfaces shall be calculated from the product of the length of the trench and the specified trench width plus 400 mm (refer PSDB 5.4).

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1.4 Basic Principles

Delete Sub-Clause and substitute:

Except that the volume will be computed as specified in 8.2.3, the requirements of Sub-Clause 5.2.6.1 (Freehaul) of SABS 1200 D as amended and as relevant, shall apply to freehaul.

No additional payment will be made for excavating and backfilling bell (fox) holes as the cost of that work will be deemed to be included in the rates for trenching.

PSDB 8.3.2 Excavation

Add the following sub-items to Sub-Clause 8.3.2.(b):

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

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

(5) Boulder excavation Class A Unit : m³

(6) Boulder excavation Class B Unit : m³"

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

The tendered rates for (4) above shall include full compensation for selecting, mixing, backfilling and compacting of the stabilised material to 90% of modified AASHTO density.

Measurement of Extra Over for (5) and (6) above will not apply to any length of trench in soft material more than 2 m long. Surplus boulder material from trench excavation shall where applicable, be disposed of to the designated spoil areas situated within the freehaul distance from the source of such material except where shown otherwise on the drawings.

PSDB 8.3.3.1 Deficiency in Backfill Materials

Payment for imported, graded stone laid under pipelines in accordance with PSDB 5.5 shall be paid for under either Sub-Clause 8.3.3.1(c) or as scheduled.

PSDB 8.3.3.4 Overhaul

Delete the Sub-clause and substitute:

All haul will be regarded as free haul.

PSDB 8.3.4(c)Cross Embankments

Add new Sub-Clause:

Payment for cross embankments will be by volume of embankment constructed in accordance with the specification. Unit : m3

PSDB 8.3.5 Existing Services that Intersect or Adjoin a Pipe Trench

Add to the end of the Sub-Clause:

(v) all work involved in locating the service by hand excavation
(vi) notifying and attending upon the owner of the service
(vii) supporting and protecting the service while the pipeline is installed, inspected, tested and backfilled.

PSG CONCRETE (STRUCTURAL) (SANS 1200 G)

PSG 2: INTERPRETATIONS

PSG 2.4.2 Strength concrete

Add the following to this Sub-clause:

With the exception of mixes weaker than 15 MPa, all concrete for the Works shall be considered to be strength concrete.

Unless otherwise specified on the drawings or in the Schedule of Quantities, all structural concrete shall be Grade 35 MPa/19.

PSG 3: MATERIALS

PSG 3.2 Cement

Add the following to this Sub-clause:

CEM1 42.5 as specified in SABS EN 197-1 common cements, a 75% CEM1 42.5 and 25% PFA blend or 50% slagment and 50% CEM1 shall be used as specified in the relevant sections of SANS 1491 and SANS EN 197-1. Any variations to these are subject to the Engineer's approval.

For non-structural concrete CEMI 32.5 is acceptable.

PSG 3.2.3 Storage

Add the following to this Sub-clause:

Cement shall be used in the order in which it is received (first in, first out basis)

Cement kept in storage for longer than 6 weeks shall be removed from site and not used in the Works.

Any cement that shows signs of hydration, such as the formation of lumps, may not be used and is to be immediately removed from site.

PSG 3.3 Water

Replace the contents of this clause with the following:

Only potable quality water from an approved source may be used for mixing concrete. Water from a river or stream may only be used for curing.

PSG 3.4 Aggregates

PSG 3.4.1 Applicable Specification

Add the following to this Sub-clause:

The maximum aggregate size shall be 25 mm. Any aggregate may be used provided the free sodium alkali content in the concrete mix does not cause an alkali-aggregate reaction.

Coarse aggregate may be obtained from the nearest available commercial sources, and shall be subject to the Engineer's approval.

Fine aggregate may be obtained from local sources subject to testing of its suitability by an approved laboratory and approval by the Engineer.

Aggregates shall be tested periodically for reactivity, the costs of which shall be deemed included in the rate tendered for concrete. A design mix will have to be made and the results submitted to the Engineer for approval before construction begins.

Coarse and fine dolomitic aggregate may be used. When tested in accordance with the method specified in Appendix C of SANS 677, not more than 25% by mass of the dolomitic aggregate shall be insoluble in hydrochloric acid.

At least one month before commencement of concrete work the Contractor shall supply at his own 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.

Aggregates for grouting

Notwithstanding the requirements of Sub-clause 3.4.1, the grading of the fine aggregate (sand) and coarse aggregate (stone or pea gravel) to be used for grouting shall conform to the grading given in Tables 1 and 2 respectively, below.

TABLE 1 - SAND	
Test sieve nominal aperture size, mm	% Passing (by mass)
9,5	100
4,75	95 - 100
1,18	45 - 65
0,3	5 - 15
0,15	0 - 5

TABLE 2 - STONE OR PEA GRAVEL	
Test sieve nominal aperture size, mm	% Passing (by mass)
9,5	100
4,74	95 - 100
2,36	0 - 5

Dolomitic Aggregate

Coarse and fine dolomitic aggregate may be used. When tested in accordance with the method specified in Appendix C of SANS 677, not more than 25% by mass of the dolomitic aggregate shall be insoluble in hydrochloric acid.

PSG 3.5 Admixtures

Add the following Sub-clause to clause 3.5:

PSG 3.5.3 Pulverized fly ash (PFA)

PSG 3.5.3.1 General

Concrete containing a percentage of FA shall be termed FA concrete. Pulverized fly ash (PFA) shall conform to the requirement of SANS 1491-2.

All concrete used shall consist of FA in the concrete unless otherwise shown on the drawings or ordered by the Engineer.

FA concrete shall conform to the requirements of SANS 1200 G for concrete and the additional requirements specified below.

PSG 3.5.3.2 Source and quality

Fly Ash shall be procured from an approved source and shall be of a consistent quality conforming to SANS 1491-2. In particular it shall be tested for and shall conform to the following:

the loss on ignition shall not exceed 5%
the percentage by mass retained on 45 micron screen shall not exceed 12.5%

PSG 3.5.3.3 Cementitious material

The cementitious material used for FA concrete shall consist of a mixture of between 75% and 80% by mass of ordinary Portland cement and of between 25% and 20% by mass of FA.

Add the following Clauses:

PSG 3.9 Granolithic screed

Granolithic screed shall consist of:

Cement	1 part by mass
Sand	1,25 parts by mass
Coarse aggregate	2 parts by mass

The coarse aggregate shall consist of granite or other approved chips which shall pass a 10 mm sieve and be retained on a 5 mm sieve.

The cement/water ratio of the mix shall be at least 2,0.

PSG 3.10 Bond breaker

The bond breaker between the top of the blinding layer or dry packed mortar screed and the underside of the floor slabs for civil structures shall be either a double coat of a spray grade bitumen emulsion complying with SANS 309 applied at a rate of 1,0 ℓ/m2 of net bitumen or a (minimum) 250 micrometre or 500 micrometre (as per the detail on the drawing) polythene sheet complying with SANS 952, Type D.

Where bitumen-impregnated resilient fibreboard is specified, it shall comply with American Federal Specification HH-F-341a for Type 1, Class B.

PSG 3.11 Materials for movement joints

PSG 3.11.1 General

The various jointing materials, the manufacturers of the materials and the methods of application shall be as approved by the Engineer. Materials shall be stored and protected to avoid damage, degradation, distortion or contamination.

The joint materials shall be resistant to ultraviolet light and to biological degradation.

PSG 3.11.2 Waterstops

Waterstops shall be of approved manufacture and of the pattern and the material and widths scheduled and specified and shown on the drawings. They shall comply with the tolerances specified in clause 6.1 of SANS 1200G. They shall conform to Specifications CKS 388 or 389, for natural rubber or PVC respectively, and have the appropriate physical properties as set out below:

	PVC	Rubber
Tensile strength (@ 25oC)	12,2 MPa	20,7 MPa
Elongation at break (@ 25oC)	250%	500%
Hardness BS degrees (IRHD @ 25oC)	-	60 to 65o
Softness (BS)	28 to 52o	-

All intersections between waterstops shall be prepared by mitring and welding/vulcanising intersection pieces in the factory in accordance with the manufacturer's instructions and to approval of the Engineer. Only straight lengths of waterstop may be field welded using the appropriate jigs and tools.

Where required, waterstops shall have eyelets so that they may be tied securely to the adjacent reinforcement. "Rearguard"-type waterstops shall have flanges or cleats that grip effectively.

PSG 3.11.3 Fillers

Closed cell expanded polyethylene fillers shall comply with the following:

Property	Unit	Value Test Method
Density	kg/m3 110	DIN 53420
Compression Stress at compression strains of 10% 25% 50%	 kPa 175 kPa 210 kPa 340	 DIN 53577 DIN 53577 DIN 53577
Compression set after 24 hours recovery	% 14	
Tensile Strength	kPa 680	DIN 53571
Elongation at Break	% 49	DIN 53571
Max. water absorption after 24 hours by volume	% 0,1	ASTM C-177

Fillers shall be pre-cut to suit the application with a tear-out strip for forming the specified recess for the sealant. If so required the filler shall be glued into position with approved epoxy glue.

PSG 3.11.4 Bond breakers, primers and sealants

The bond breaker (if specified) shall be self-adhesive PVC tape (or equal, approved material) with a width the same as the joint recess into which it is to be applied.

The primer, if required for the sealant, shall be fully compatible with the sealing compound that is to be used.

The elastomeric sealant shall be either a two-component polysulphide liquid polymer base complying with the requirements of SANS 110 or a polyethylene based polyurethane "pouring grade" for horizontal or near horizontal joints or "gun grade" for vertical/overhead joints and joints steeper than 1 in 10 to the horizontal. All elastomeric sealants shall comply with BS 4254 Type A1 and shall have a movement tolerance of 25%.

PSG 3.12 Precast paving slabs

The paving slabs shall comply with the requirements of SANS 541, shall be as scheduled and with patterned surface, or equal approved. Samples of the types which the Contractor proposes to use shall be submitted for approval prior to construction.

PSG 4: PLANT

PSG 4.3 Mixing plant

PSG 4.3.1 General Requirement for Mixing Plant

Add the following to this Sub-clause:

Stand-by mixers of adequate capacity and with an independent power unit shall be maintained on site for immediate use in the event of breakdown of the regular mixers failure of the power supply.

PSG 4.4 Vibrators

Add the following to this Sub-clause:

Stand-by vibrators of adequate capacity and with an independent power unit shall be maintained on site for immediate use in the event of breakdown of the regular vibrator failure of the power supply.

Vibrators for in-situ concrete shall be of the internal or immersion type.

PSG 4.5 Formwork

PSG 4.5.3 Ties

Add the following to this Sub-clause:

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 and some form of water bar to restrict seepage along the tie.

For Watertight concrete structures the shutters shall be fastened using an approved imbedded fastening system. Open ferrules will not be permitted.

Add the following Clause:

PSG 4.6 Water-bath

A temperature-controlled water-bath with a capacity to cure two hundred cubes shall be provided on site. The water-bath shall be located under cover.

PSG 5 CONSTRUCTION

PSG 5.1 Reinforcing

PSG 5.1.2 Fixing

Add the following to this Sub-clause:

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

Fixing blocks for the attachment of fixtures may be embedded in concrete provided that the strength or any other desirable feature (such as appearance of the member) is not, in the opinion of the Engineer, impaired thereby.

Supports shall be of approved precast concrete blocks properly shaped to maintain position or proprietary supports of an approved type. Concrete blocks shall be adequately cured as specified. Wooden supports shall not be used nor shall bars be placed in succeeding layers of fresh concrete nor shall bars be adjusted during the placing of concrete. Tie-wire shall point away from the nearest formwork face.

Where clips, stools and other supports are not shown on the drawings and are structurally not required, the Contractor shall provide those supports he deems necessary to ensure the correct positioning of the reinforcement, to the satisfaction of the Engineer. The cost of such steel, labour, and other fixing materials shall be inclusive in the rate for the scheduled reinforcement and no additional payment shall be made.

PSG 5.2 Formwork

PSG 5.2.1 Classification of finishes

Add the following to this Sub-clause:

Rough formwork Degree of Accuracy III may be used on the outside faces where the concrete is more than 500 mm below the final ground level.

Smooth formwork Degree of Accuracy II will be used elsewhere.

Where specified special finishes shall be to Degree of Accuracy I

All honeycombing shall be repaired by cutting back to sound concrete and patching with a suitable epoxy mix to the approval of the Engineer.

Concrete for manholes shall be finished with a steel float or against a steel shutter which has been cleaned and oiled before use.

PSG 5.2.2 Preparation of formwork

Add the following to this Sub-clause:

All 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.

PSG 5.5 Concrete (Watertight)

PSG 5.5.1 Concrete (Quality)

Add the following to this clause:

35 MPa concrete with the minimum and maximum cement contents of 325 kg/m3 and 450 kg/m3 respectively shall be used. For concrete containing extenders the maximum cement content shall be 450 kg/m3. The water to cement ratio shall not exceed 0.50. All concrete mix designs shall be approved by the Engineer in advance.

The mix design and casting procedure shall be approved by the Engineer prior to casting.

All Water Retaining structures and all manholes shall be constructed using watertight concrete. The Contractor shall abide by all conditions set out in sub-clause 5.5.11 as amended of SABS 1200 G, and pay particular attention to this aspect of the works.

Cubes shall be taken on all pours in accordance with SABS 1200 G. Payment shall be included in the rate tendered for the supply of concrete. No payment shall be made for concrete pours on which no cube tests have been performed. A single cube test comprises the mean crushing strength of 3 cubes taken from the same batch of concrete and cubes must be taken at the frequency specified SANS 1200 G

The concrete shall be tested for water sorptivity, oxygen permeability, chloride conductivity, depth of cover and shrinkage; the details of the tests are given on the specification.

PSG 5.5.1.4 Chloride content

Add the following to this Sub-clause:

Efflorescence will not be acceptable on any exposed concrete surface

PSG 5.5.1.5 Durability

Add to this Sub-clause the following:

The water/cement ratio, as specified in Table 5, but shall not exceeding 0.5.

PSG 5.5.1.6 Prescribed mix concrete

Add the following to this Sub-clause:

Notwithstanding the requirements of Sub-clause 5.5.1.6, samples of aggregates will not be made available by the Engineer. The Contractor shall supply aggregates from commercial sources located by him, complying with the requirements of Sub-clause 3.4.1, as amended, for the production of prescribed mix concrete.

"No-fines" concrete:

A nominal aggregate size of 19 mm shall be used in the manufacture of "no-fines" concrete.

No-fines concrete shall be laid under where specified and shall consist of coarse aggregate, cement and water only. No fine aggregate shall be used. Sandwiching or layering of pours will not be permitted. The Contractor shall cast to the profile depth in one pour.

The mixing of the cement and water paste shall have the consistency of paint capable of coating each coarse aggregate particle uniformly and sufficiently to form a small fillet at all the contact points of each stone in the aggregate.

Between 24 and 48 hours after the no-fines layer has been laid it shall be covered with 1:4 cement: sand mortar layer 20 mm thick. The mix shall be comparatively dry to ensure that it does not penetrate and block the cavities in the no-fines concrete. The surface shall be steel floated to form a plane surface.

The mortar skim shall be cured in the same manner as concrete for a period of not less than 2 days.
Payment shall be per cubic metre of no-fines concrete placed. The rate shall include compaction and skimming to the approval of the Engineer.

PSG 5.5.1.7 Strength Concrete

Add the following to this Sub-clause:

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 must provide a very dense and impervious concrete.

The Contractor shall submit details of the proposed concrete aggregates and design mix to the Engineer for approval, after which he shall be required to make a trial mix and obtain cube test results to validate the proposed mix. Only after receipt of satisfactory cube test results, the Contractor shall be permitted to use the mix in the construction of water retaining structures. The cost of designing and proving the proposed concrete mix shall be deemed to be included in the tendered rates.

The Engineer may call for revised mix designs at any stage during the Contract.

Where blinding layers are specified, the concrete shall be grade 15 MPa/19 placed and finished off to the final level.

In order to facilitate or increase the workability of concrete in the fresh/plastic state, to ensure watertightness without increasing the water/cement ratio, the Engineer may approve the use of an additive.

The workability of concrete shall be assessed by means of the slump test. The slump shall be between 75 ± 25mm..

Curing

Curing shall be done using a curing compound to the Engineer's approval and frequency or, in addition to water curing, well-secured plastic sheeting, shall be used. Water curing alone shall not be permitted. Where the Contractor fails to cure for a minimum of 7 days, no payment shall be made for the relevant pour of concrete.

PSG 5.5.2 Batching

Add the following to this Sub-clause:

Batching of all strength concrete shall be by mass. Prescribed concrete may be batched by volume. Batching shall not be done by wheelbarrow.

All concrete shall be mechanically mixed.

Stand-by mixers of adequate capacity and with an independent power unit shall be maintained on site for immediate use in the event of breakdown of the regular mixers failure of the power supply.

PSG 5.5.3.2 Ready-mixed concrete

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

Concrete from a central concrete production facility other than on the construction site will be permitted if the facility is within a 40 km radius of the site and, apart from test results in terms of Sub-clauses 7.3.1, 7.3.2 and/or 7.3.3, test results obtained by such a production facility as part of its quality control system will be accepted for evaluation in terms of Sub-clause 7.3.4, provided the cubes are stored and cured on site.

PSG 5.5.5 Placing

Add the following Sub-clause:

PSG 5.5.5.10 Casting of concrete in excavation

Structural concrete shall not be cast directly against the side of any excavation without the use of formwork unless prior approval has been obtained in writing from the Engineer.

Concrete used in pipe trenches for encasement and for the thrust / anchor blocks may be cast directly against the side of the excavation.

After vibration, the concrete shall be spaded in corners, in angles and against forms to release air bubbles which may have been trapped in these positions.

PSG 5.5.7 Construction joints

Add the following to these Sub-clauses:

PSG 5.5.7.1 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.

All joints, other than expansion, contraction and other movement joints shall be treated as follows:

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 Sub-clauses 5.5.7.3(a) to (d), shall be such as to remove all laitance or inert and strengthless material which may have formed and the specified chipping or sand blasting shall be such as to produce a roughened surface all over.

When concreting is interrupted concrete surfaces shall be protected from the sun as specified in Sub-clause 5.5.8(d) or by means of hessian kept damp until concreting is resumed.

All constructional joints shall be dealt with as specified in Sub-clause 5.5.7.3, as amended.

Unless construction joints between designated joints shown on the drawings are authorized by the Engineer in writing, concrete in the floor and wall shall be cast continuously between the designated joints shown on the drawings.

PSG 5.5.7.2 Formed joints (generally vertical or near vertical)

Formed joints will be considered to be designated joints as defined in Sub-clause 2.4.3. (The forming of a straight edge to a construction joint as specified in PSG 5.5.7.1, as amended, General does not constitute a formed joint).

Each joint shall be formed as shown on the drawings, complete with shear key rebates, waffle formwork, V-feature, waterstops, "Flexcell" or equal, approved joint filler, dowel bars and their PVC tubes, etc. as indicated.

PSG 5.5.7.3 Non-designated joints

Any non-designated joints shall be identical to designated joints, as shown on the drawings, which would be used in similar positions and shall perform the same function.

Add the following Sub-clauses:

PSG 5.5.7.4 Joints between footings or floors and walls or columns

Construction joints between foundations, footings or floors and walls, columns or piers connected to them, shall not be made flush with the supporting surface, but shall be made at a distance above the footing or floor shown as on the drawings or approved by the Engineer. The "kicker" shall be cast as an integral part of the foundation, footing or floor.

PSG 5.5.7.5 Construction Joints In Circular Reservoirs

Construction Joints In Walls Or Footings
Construction joints may only be placed where shown on the drawings or to the approval of the Engineer. Vertical joints in the walls of the reservoir are permitted only in the pre-stressed reservoir. These joints shall only be permitted radially on each side of stressing buttresses. No vertical joints shall be permitted in the reinforced concrete reservoir or circular sedimentation tank.

Tenderer **DR. JSMLM**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

The entire contact surface along the joint in the concrete already cast shall be chipped or water jetted to expose the coarse aggregate to 5 mm beyond the surrounding matrix. Care shall be taken to ensure that the concrete structure is not damaged and that all loose material is removed. The surface must be thoroughly cleaned and wetted before casting against the joint.

All construction joints in the reservoir walls and footing shall be cast with water stops. Water stops shall be as per detail drawings. No construction joints will be permitted in the floor.

Payment shall be per linear meter. The rate shall include supply and casting in of the water stop as per detail drawings.

Construction Joints In Roof Slabs

Construction joints in the roof slab are permitted. The position of these joints shall be approved by the Engineer.

These joints shall be cast against a vertical shutter leaving a 15 mm deep by 20 mm wide recess which is sealed with a one part poly-sulphide sealer on completion. The sealer used and method of application shall be to the Engineer's approval.

No water stops are required; however, the completed roof shall be tested for water tightness in accordance with Sub-clause PSG 7.2.5(b), as amended. No additional payment shall be made for these joints.

Expansion and Contraction Joints

Expansion and contraction joints shall be constructed as detailed on drawings using PVC or rubber water stops.

Water stops extruded from recycled material shall not be permitted.

Prior to bandaging, concrete surfaces shall be scabbled with a mechanical scabbler and water jetted with a 200 bar water jet. All joints shall be butt jointed and patched over.

The waterproofing bandage shall comprise of two elements:

(i) A 2 mm thick Hypalon or Combiflex strip

(ii) (For Expansion joints) A 2 mm x 60 mm stainless steel strip with polythene backing bond breaker to the detail shown on the drawing.

The bandage shall be applied by coating the concrete and underside of the hyperlon bandage with an epoxy adhesive. The stainless steel strip is first positioned over the joint and the bandage with epoxy adhesive placed over the stainless steel strip. All trapped air shall be eliminated by hand rolling the bandage until the epoxy is fully cured.

Payment shall be per linear meter. The rate shall cover all costs for the supply and application of water stops and bandaging including the installation of the stainless steel strip.

PSG 5.5.7.6 Application of primers and adhesives

The concrete to which the primer or adhesive is to be applied shall be dry and shall be cleaned of all dust, grit, grease, surface laitance and foreign matter by compressed air and/or water, solvents, or other suitable approved means. The Contractor shall provide on Site an approved moisture meter to measure the degree of dryness of the joint. This meter shall be made available to the Engineer for testing. The joint shall be approved for the application of the primer and adhesive if the moisture content of the concrete is less than or equal to 5%. It may be necessary to dry the concrete surfaces locally to reduce the moisture content to 5% or less.

PSG 5.5.7.7 Contraction and expansion joints

Contraction and expansion joints shall be formed true to line in smooth formwork.

All surfaces shall be thoroughly cleaned of all accretions of concrete or other foreign matter by scraping or other approved means.

Particular care shall be taken to compact the concrete around waterstops, edges, etc.

Rebates for seals shall be formed to required dimensions and lines, or cut true to line and size after floating the surface and before the final set of the cement has taken place. All rebates, etc., shall be adequately protected against damage until the completion of the work; accidental damage which in the opinion of the Engineer will impair the performance or appearance of the joint shall be made good by reconstructing the work as directed by the Engineer. Rebates for seals shall be grit blasted or wire brushed on all faces to remove surface laitance and thoroughly cleaned with soft brushes and/or compressed air jets, and, if necessary, dried by blow-lamp or other approved means before priming.

PSG 5.5.7.8 Installation of waterstops in joints

Waterstops shall be held in the formwork so as to prevent air pockets forming underneath them. Special precautions shall be taken, to the approval of the Engineer, to ensure that all flexible waterstops are in perfect contact with well compacted void-free concrete.

PSG 5.5.7.9 Installation of joint filler in expansion joints

Joints in the filler shall be neatly butted so as to exclude mortar from the joint. Edges of filler strip against waterstops, concrete, formwork, projections, etc., shall also be closely fitted to exclude mortar, so that there is no resistance (other than the compression of the filler) to the expansion movement for which the joint is designed.

Joint filler shall be fixed to the first cast of concrete with an approved adhesive and as directed by the Engineer.

PSG 5.5.7.10 Application of joint seals

Rebates shall be cleaned as required by PSG 5.5.7.6 Application of primers and adhesives and shall be inspected and approved by the Engineer's Representative before filling.

Joint sealants and primers shall be applied strictly in accordance with the manufacturer's instructions. Flow and non-slumping grades shall be used for horizontal and vertical joints respectively.

Immediately after the compound is applied the joint shall be protected against damage until completion of the Contract.

Bidder: **DR JS MLM**
Initial: Authorised signatory/ies: **1.** ..... **Initial:** DR. JSMLM.....

2. .....

Witness: .....

PSG 5.5.8 Curing and protection

Add the following to this Sub-clause:

PSG 5.5.8.1 Horizontal surfaces

Surfaces of the concrete shall be treated with a curing compound complying with Sub-clause PSG 5.5.8.3 Post-Crystallization (Concentrate & Modified) slurry coat and curing.

PSG 5.5.8.2 Formed surfaces

In order to improve the effectiveness of the crystallization treatment, the specified minimum time for the removal of the formwork shall be three days. All surfaces shall be pressure cleaned in accordance to the product manufacturer's requirement.

PSG 5.5.8.3 Post-Crystallization (Concentrate & Modified) slurry coat and curing

The Concrete surfaces to receive a concentrate slurry coat treatment shall have an open capillary system to provide 'tooth and suction', and shall be free from scale, excess form oil, laitance, curing compounds and foreign matter.

Surfaces shall be smooth and uncovered from excess form oil, laitance and foreign matter. The concrete should be lightly water blasted to remove such material for surface preparation.

Concrete surfaces must be thoroughly saturated with clean water prior to application in order to ensure the growth of the crystalline formation deep within the pores of the concrete. Wetting to be done must be at least 1hr before application. If concrete surface dries out before application, it must be re-wetted.

The concentrate slurry is applied at a coverage rate of 1kg/m² using a semi-stiff nylon bristle block brush – work slurry well into the surface, filling surface pores and hairline cracks. The coating must be uniformly applied at approximately 1.25 mm thickness. The second modified slurry coat with the same application rate must be applied within 48 hours of the first coat. Light pre-watering between coats may be required when drying out signs appear. Detail coating applications shall be confirmed by the manufacturing.

Cure by spray for minimum of 3 days must be established once the final coat has been applied. Protect from rainfall, puddling of water, wind & frost for at least 48 hours after application. When plastic sheeting is used as protection allowance must be made for the coating to breathe.

PSG 5.5.8.4 Curing for normal concrete surfaces

The use of membrane curing compounds will be allowed on vertical faces or steeply inclined faces (i.e. steeper than 45o 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 cubes cured with the proposed membrane shall be at least 85% of the crushing strength of the water cured cubes.

Before any membrane curing compound is used, each batch shall be tested on a trial surface to ensure that it forms a satisfactory membrane, and any compound which is unsatisfactory in the opinion of the Engineer, shall be rejected. Curing membranes will be disallowed if permanent discolouration of the concrete takes place. Surfaces where curing membranes are used shall be treated in such a manner that the final concrete texture and colour blends in with the rest of the concrete work. Furthermore, the Engineer shall, at his discretion, require the Contractor immediately to adopt an effective alternative means of curing any area of the structure to which a membrane has been applied which, in the opinion of the Engineer, is unsatisfactory. The curing compound used shall be to the approval of the Engineer. Wax based curing compounds will not be permitted.

The curing compound shall be applied immediately as formwork is progressively stripped or, in the case of unformed surfaces, when the concrete has taken its initial set. It shall preferably be applied by spraying and the rate of application shall be strictly in accordance with the manufacturer's recommendations. A method of monitoring the area to which curing compound has been applied and the application rate shall be as approved by the Engineer and rigidly applied by the Contractor.

Surfaces of joint rebates, where elastomeric sealant is to be applied, shall be protected from contamination by curing compound by the use of masking tape.

PSG 5.5.9 Adverse Weather Condition

Replace the contents of Sub-clause 5.5.9.2 with the following:

No placing of concrete shall take place if the ambient temperature exceeds 32oC, or is likely to rise to above 32oC during the casting period or within eight hours after casting is completed.

If concrete is to be cast during times of high ambient temperature or hot drying winds, the Contractor shall be responsible for taking the necessary steps to keep the placement temperature as low as possible. Such steps include the spraying of the coarse aggregate with water, the painting of silos with a reflecting aluminium paint, the insulation of tanks and pipelines, and the protection of concrete ingredients against the direct rays of the sun. The area of the pour shall be shaded before and during concreting and the concrete shall be shaded from the time of mixing until eight hours after placing. Windbreaks shall be erected if necessary.

PSG 5.5.10 Concrete surfaces

Replace the contents of this Clause with the following:

PSG 5.5.10.1 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 tamped 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 tamped.

PSG 5.5.10.2 Wood-floated finish

Where wood-floating is ordered or scheduled, the surface shall first be given a finish as specified in Sub-clause PSG 5.10.1, as amended, Screeded finish 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.

PSG 5.5.10.3 Steel-floated finish

Where steel-floating is specified or scheduled, the surface shall be treated as specified in Sub-clause PSG 5.5.10.1, as amended, Screeded finish except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screeded surface shall be steel-trowelled under firm pressure to produce a dense, smooth, uniform surface free from trowel marks.

PSG 5.5.10.4 Granolithic screeds

PSG 5.5.10.4.1 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 50 mm and shall be formed true to profile and shape as required and shown on drawings. Before placing granolithic screed against an 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 4 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 Sub-clause 5.5.8(b), as amended, 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 gives notice on completion of erection and shall be finished expeditiously.

PSG 5.5.10.4.2 Screed to floor (Where Specified)

Where screed is specified it shall be approximately 50 mm thickness is required to each floor.

The screed shall be formed from granolithic concrete as specified in Sub-clause PSG 5.5.10.4 Granolithic screed. The screed shall be applied after the mechanical equipment has been erected by the mechanical plant contractor and shall be laid in alternate concentric rings not greater than 2,00 m in width. A period of 24 hours shall elapse before the intervening rings are laid.

The Contractor shall supply and fit a plywood template to the clarifier mechanism to act as a guide in determining the finished screed level. He shall not use the template to physically form the screed surface nor shall he place an excessive load on the scraper mechanism.

The Contractor shall only operate the scraper mechanism in strict accordance with the instructions of the manufacturer and the Engineer, and he shall make good any damage resulting from the use of the machinery.

Granolithic concrete shall be placed in position for a distance of approximately 3,0 m in front of the template and consolidated and roughly trimmed to level. The surface of the screed shall then be trimmed off to the level of the template which shall be moved as required by hand operation of the mechanism.

The trimmed surface shall be steel float finished and the edges of the ring left in a rough vertical condition to provide a key for the adjoining ring.

The preparation of the base concrete shall be done in accordance with Sub-clause PSG 5.5.10.1, as amended, Screeded finish. Before placing granolithic concrete against an adjacent band of granolithic concrete 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.

Concrete to manholes shall be watertight concrete.

PSG 5.5.11 Watertight Concrete

Add the following to this Sub-clause:

The water-tightness of the reservoirs and sedimentations, all liquid retaining structures and concrete chambers shall be tested as indicated below:

On completion the structure shall be cleaned and shall be filled with water at an approved rate. After allowing a period of absorption of 3 days, the depth of water shall be recorded and the water allowed to stand for a further 7 days during which the total permissible drop in water level after allowing for evaporation should not exceed 10 mm per m2 of the surface in contact with water.

In the event of any leakage or dampness being evident at any stage of the filling or testing or in the event of the Engineer considering the final degree of water-tightness to be unsatisfactory, the Contractor when ordered by the Engineer shall discontinue such filling or testing and shall, at his own expense, immediately take approved steps to rectify the leakage and to make the work thoroughly sound to the complete satisfaction of the Engineer. All such rectification work shall be continued assiduously until a satisfactory test is obtained, which shall prove to the Engineer that water-tightness has been obtained.

If required by the Engineer, the structure shall be retested before the expiry of the Defects Liability Period.

The floors, walls and roofs of all water retaining structures shall be considered to be watertight concrete structures.

The Works will not be certified complete until the structure has been proved by testing to be watertight to the satisfaction of the Engineer.

The cost of the above tests will be deemed to be included if the rates for the relative concrete to be provided by the contractor.

PSG 5.5.14 Defects

Add the following to this Sub-clause:

All defects shall be repaired as soon as possible after the formwork has been removed and the Engineer has inspected the concrete. A statement of the method to be used for each repair shall be submitted to the Engineer for his approval before any work is carried out. The Engineer may prohibit the further placing of concrete in the particular area concerned until he is satisfied that the repair has been satisfactorily executed.

Add the following sub-clauses:

PSG 5.5.16 Casting pipes and specials in concrete

Where the pipe or special is supplied by others the Contractor may elect to provide a box-out in the wall and cast the unit in at a later stage. When constructing such box-outs reinforcement shall not be cut but shall run through the opening. Reinforcement shall be cut and/or bent out at a later stage to suit the item being cast in. After installation of the item the remaining reinforcement shall be bent back in position.

Where entry holes for pipes/specials have been provided in the walls, the Contractor shall be responsible for the concreting in of such pipes/specials regardless of whether or not these have been supplied by himself.

Before commencing the positioning in holes of any pipes/specials the Contractor shall:

remove all formwork and boxing remaining in the holes;

make any alternations required to the position and shape of the holes and cut reinforcement to suit the item, as directed by the Engineer; and

thoroughly scabble the sides of the holes so as to obtain a satisfactory bond surface for the new concrete and treat the surface as specified in Sub-clause 5.5.7.3, as amended.

Immediately prior to the placing of mortar and concrete around the pipes, the surface of the existing concrete shall be saturated with water. All surplus water shall be removed and the surface covered with a layer, approximately 12 mm thick, of mortar made of the same mix as the concrete in which the pipes/specials are to be placed.

The concrete ingredients shall be mixed and placed as dry as possible to obtain a dense, waterproof concrete. The concrete shall be carefully worked around the puddle flange, if any, and the pipe barrel or body of the special, and shall be vibrated in layers so as to obviate a falling away from pipe/special surfaces of the concrete already placed. The whole shall, when set, form a dense, homogeneous, and waterproof mass.

PSG 5.5.17 Precast paving slabs

The area to be paved shall be compacted to a minimum of 93% Mod AASSHTO density (100% for sand), trimmed and then treated with an approved weed killer, with care being taken to avoid contaminating surrounding areas. The paving slabs shall be laid on a sand bed approximately 25 mm thick, which shall be graded to the required levels and slopes as approved by the Engineer. The joints between the slabs shall be 2 mm to 6 mm wide and shall be grouted with cement mortar. Gaps in the pattern of slabs shall be filled with Grade 15MPa/19 concrete and given a wood floated finish.

PSG 5.5.18 Items to be cast in or grouted into concrete

PSG 5.5.18.1 Fixings for equipment supplied under separate contract

a) The Contractor will be responsible for the forming of pockets to the details shown on the drawings to accommodate holding down bolts for equipment supplied under a separate contract. Holding down bolts will be supplied by and positioned by others.

b) After casting of the concrete all shuttering shall be removed and the sides of the bolt holes and surface on which the machine base is to be placed shall be scabbled to remove all defective concrete, laitance, dirt, oil, grease and loose material.

c) Upon completion of the positioning and alignment of equipment and when instructed by the Engineer the Contractor shall in collaboration with the mechanical contractor, grout up pockets and baseplates by filling pockets and voids under the baseplates with an approved non-shrink grout.

PSG 5.5.18.2 Fixings for items supplied under this Contract

Holding down bolts or other fixings required for the installation of items supplied under this Contract shall be provided by the Contractor. These fixings shall be cast in or grouted into pockets or installed by other means as approved by the Engineer.

Where anchor bolts are used which are installed into holes drilled into concrete or masonry these shall be of a type approved by the Engineer. All such bolts used shall be manufactured from stainless steel or a metal with a resistance to corrosion equal to that of grade 304 stainless steel. The metal used for bolts shall be compatible with galvanized mild steel.

Anchor bolts shall have minimum pull-out forces and minimum ultimate lateral loads at least equal to those specified below:

Specified Anchor Size	Minimum Pull-out Force (kN)	Minimum Ultimate Lateral Load (kN)
M6	10,35	7,60
M8	13,70	11,15
M10	19,44	15,95
M12	31,85	26,90
M16	50,45	45,80
M20	60,50	71,20

PSG 5.5.18.3 Plastic puddle pipe items supplied under this Contract

Plastic puddle pipe cast-in fittings as indicated per drawing required for the installation of items supplied under this Contract shall be provided by the Contractor. These fittings shall be cast in or grouted into pockets or installed by other means as approved by the Engineer.

All such fittings shall be manufactured from uPVC CLASS 16 according to the drawings in accordance with SANS 966. The welded puddle shall be governed in accordance with standards DVS 2207 and SANS 10268. All welded items shall be issued with an accredited quality certificate from an accredited manufacturer.

PSG 5.5.18.3 Supervision

The Contractor shall be responsible for ensuring that the erection of the concrete work is carried out under the supervision of a person with adequate knowledge of the mixing, transporting, placing and curing of concrete.
Programme and Plant

Prior to carrying out any concrete work, the Contractor shall obtain the approval of the Engineer in respect of:
Structural programme,
Concrete plant details,
Materials to be used in concrete,
Details of concrete,
Construction joints

PSG7 TESTS

PSG 7.1.2 Frequency of sampling
Add the following to this clause:

One sample shall consist of three concrete test cubes.
For each sample taken the position in the structure shall be recorded where the batch represented by that sample is placed as also the date sampled.
Sampling of concrete of a particular grade shall be as specified in Sub-clause 7.1.2 with the following frequency of sampling referred to in Sub-clause 7.1.2.2 being amended to read as follows:

"A minimum of 4 samples per day of each grade of concrete placed or 6 samples for pours in excess of 10 m3 shall be taken."

Bidder:
Initial: Authorised signatory/ies: **1.** ……

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PSG 7.2 Testing

Add the following Sub-clauses:

PSG 7.2.5 Testing Watertight Concrete

The Clear/potable water retaining structures shall be disinfected before testing. Any re-testing that may be required shall be at the Contractor's expense.

The entire inside surface of the structure including columns and roof shall be thoroughly hosed down with water and brushed until properly cleaned off all dirt and other foreign matter.

The floor of the structure shall then be flooded to a depth of 300 mm with purified water, with calcium hypochlorite solution being added gradually to mix thoroughly as the water enters. The water shall be dosed with calcium hypochlorite at a rate of 150 grams per cubic meter of water entering the structure. The entire inside surface shall again be scrubbed using this water. The workers engaged in this operation shall wear clean rubber boots. On completion the water is to be run to waste once the free chlorine is reduced to an acceptable level, and the floor of the structure shall be swept clean.
The chlorinated water shall be stored until the free chlorine level has dropped to an acceptable level. Excess dirt swept from the floor into the sump may be discharged subject to written approval being obtained from the Local Authority.

Payment shall be a lump sum. The rate shall cover the costs of all materials and water used.

The structure shall be tested for water tightness in accordance with BS 8007 1987 Section 9. Testing of the Structure:

For testing the liquid retention, the structure shall be cleaned and initially filled to the normal maximum level with the water at a uniform rate of not greater than 2 m in 24 hours.

When first filled, the water level should be maintained by the addition of further water for a stabilising period while absorption and autogenous healing take place. After a stabilization period of 21 days, refill (top up) and record the water level at 24 hour intervals for a test period of 7 days. During this 7 day test period the total permissible drop in level, after allowing for evaporation and rainfall, should not exceed 10 mm.

Notwithstanding the satisfactory completion of the test, any evidence of seepage of the liquid to the outside faces of the liquid-retaining walls shall be assessed by the Engineer against the requirements of the specification. Any necessary remedial treatment of the concrete, cracks, or joints shall be carried out from the liquid face where practicable. If a lining is used for this purpose, it shall be sufficiently flexible and not be in any way detrimental to the water quality.

In the event of any leakage or dampness being evident at any stage of the filling or testing or in the event of the Engineer considering the final degree of water-tightness to be unsatisfactory, the Contractor when ordered by the Engineer shall discontinue such filling or testing and shall, at his own expense, immediately take approved steps to rectify the leakage and to make the work thoroughly sound to the complete satisfaction of the Engineer. All such rectification work shall be continued assiduously until a satisfactory test is obtained, which shall prove to the Engineer that water-tightness has been obtained.

If required by the Engineer, the structure shall be retested before the expiry of the Defects Liability Period.

The Works will not be certified complete until the structure has been proved by testing to be watertight to the satisfaction of the Engineer.

Testing of the Roof of water retaining structures

The roof shall be tested on completion by using a hose or sprinkler system to obtain a sheet flow over the whole area of the roof for a period of not less than 6 hours.

The roof shall be considered satisfactory if no leaks or damp patches appear on the soffit.

PSG 7.2.6 Durability Testing:

Concrete shall comply with the durability parameters defined below:

Water Sorptivity:

Sorptivity is sensitive to surface effects and may be used to assess the effectiveness of initial curing.

Oxygen Permeability:

Permeability is sensitive to changes in the coarse pore fraction and is thus a means of assessing the degree of compaction of concrete. It may be used to quantify the microstructure of the concrete and is sensitive to macro-defects such as voids and cracks. Permeability shall be tested in a manner approved by the Engineer.

Chloride Conductivity:

Chloride conductivity provides a method of characterisation of concrete in the marine environment and may be used to assess the chloride resistance of concrete.

Unlike oxygen permeability and water sorptivity, chloride conductivity is not really a measure of construction quality, but it shall be used for materials selection and design of mixes in aggressive chloride conditions. It will therefore only be used as a check on mix designs during the initial stages of construction.

Concrete Cover:

Concrete cover is a dimensional indicator of cover concrete depth. Cover concrete is the outer concrete layer which protects the internal reinforcing steel, and its depth varies according to the requirements of the different environmental exposure classes.

Test for cover shall be conducted using an approved calibrated electromagnetic cover meter.

This test shall be conducted when instructed by the Engineer to confirm that the specified depth of concrete cover has been achieved. The cover meter tests shall cover at least 1 m2 for every 10 m2 exposed. The average cover of the 1 m2 subjected to the test shall be used to determine the payment, unless the Contractor chooses to carry out additional tests as detailed under clause PSG 7.3.8. The cover meter must be calibrated for each project by drilling and measuring actual cover in at least 3 locations to validate the readings.

Minimum cover to reinforcing for the utility building and guard house shall be as indicated on the drawings.

General:

Durability predictions will be based on the following tests that shall be arranged by the contractor. The durability testing shall be carried out by a laboratory approved by the Engineer.

Shrinkage

The dry shrinkage tests shall be conducted in accordance with SABS 1085. The drying shrinkage shall not exceed 0.04%.

PSG 7.3 Acceptance Criteria for Strength Concrete

Add the following Sub-clauses:

PSG 7.3.6 Durability Index Tests

Testing for durability shall be carried out using test panels which are constructed with the same concrete mix, formwork type, and compaction and curing methods as it actually used in the liquid retaining structure. The test panel shall be 150 mm thick, and of at least 0.5 m sides. Samples for testing shall be obtained from the face of the test panel that mimics the cast face of its intended use in the structure, after a period of 28 days curing. The following test panels shall be constructed and tested:

a) One test as part of trial mixes
b) One test for the first 50m3 batch of concrete.
c) Thereafter 1 set for every discreet element namely floor slabs, sloped floor slabs, walls and columns (4 No. total) upon instruction by the Engineer.

Any additional durability tests will be paid for as extras. The durability tests are to be carried out by an accredited laboratory approved by the supplier in terms his Quality Management System. Each test as quantified in the Bill of Quantities shall include each of the following tests:

a) Oxygen permeability index test (OPI)
b) Water sorptivity index test (including porosity)
c) Chloride conductivity index test

(E.g. One No. durability test includes permeability testing, water sorptivity testing and chloride conductivity testing).

The test procedures for these tests are obtained from the University of Cape Town Durability Index Test Manual.

Two sets of four cores each (70 mm Dia.) are required from a test panel: four cores for the oxygen permeability and water sorptivity tests; four cores for the chloride conductivity test. The required target values for the tests are summarized in the table below. (These are the average values for the four core specimens used for the testing on each occasion). These values are required to be met simultaneously.

PSG 7.3.6.1 Durability Test Parameters

DURABILITY INDEX TEST	TARGET VALUE
Oxygen permeability index	≥ 10 (log scale)
Chloride conductivity index	≤ 0.6 m.sec/cm
Water Sorptivity	≤ 8 mm / hr0.5

In the case that the results do not comply with the above values in the above table, another set of cores shall be drilled from the test panel. Where the second set of cores fails to comply with target values, a drum from that batch of concrete shall be sampled by way of drilling four cores for each of the oxygen permeability test and the chloride conductivity test. If these sets of cores fail any of the target values as stated above, the results will be reviewed by the Engineer who will assess them in accordance with the required durability parameters. If these results are still not found to be satisfactory by the Engineer, the Contractor shall propose alternative methods to improve the durability of the mix and/or any items cast. The contractor shall keep records of all tests results relating to the samples tested.

The contractor shall ensure that site testing is carried out by a trained person. The contractor shall ensure that all off-site laboratory testing is performed in an approved laboratory approved in terms of their Quality Management System.

PSG 7.3.7 Criteria for the Compliance with the Requirements

No extra payment shall be made for cube strength testing. The cost of cube strength testing shall be included in the rates tendered for concrete.

Water used for testing shall be free of charge except for failed tests when water will be charged at standard municipal rates.

In the event that the actual achieved average cube strengths of an element are less than 85% of the target mean strength, the Engineer may instruct the taking of cores for additional strength testing. The cost of taking the cores and repairing the holes in the structures shall be for the Contractor's account.

The Engineer will conduct routine tests for the durability parameters on cores taken from the completed elements during the construction, the costs for which shall be to the Employer's account unless the parameters are not met.

The test results shall be accepted or rejected based on the criteria as set out in PSG 7.3.6.1 based on the following categories:

Full Acceptance:
Concrete shall be accepted unconditionally and full payment shall be made.

Conditional Acceptance:
Concrete may be accepted at the Engineer's discretion with a warning that construction methods be examined to improve the durability criteria. A reduced payment shall be applied to all the relevant pay items under SABS 1200 G for the non-conforming element or concrete pour. Alternatively, the Contractor may elect to carry out remedial work to improve the durability of the concrete to the criterion of "Full Acceptance" to the satisfaction of the Engineer, and receive full payment. All proposed remedial measures shall be subject to the approval of the Engineer. The cost of all such remedial work shall be for the Contractor's account.

Rejection:
The concrete shall be removed and replaced with fresh concrete at the expense of the Contractor, as directed by the Engineer.

Should the test result(s) indicate conditional acceptance or rejection of the item tested, the Contractor shall have the option of carrying out additional tests on that item, at his own expense, to confirm or disapprove the original test result(s). Not more than two such additional tests shall be carried out.

PSG 7.3.8 Procedure in the Event of Non-Compliance with the Requirements

Structural concrete elements or concrete pours shall be represented by test cubes and extracted cores, which shall be tested for strengths and the appropriate durability parameters.

If the durability parameters have been proved acceptable, the costs for such testing shall be borne by the Employer. However, where non-compliance to the specified parameters has been identified, the assessed element shall be rejected and at the Engineer's sole discretion any of the following measures may be considered at the Contractor's expense:

Coating with an approved product specifically designed to improve the non-conforming parameter depending on the severity of the test results.
Acceptance at reduced payment.
Demolition and rebuilding.

PSG 7.3.9 Tests Ordered By the Engineer

One concrete cube strength test shall comprise the results of tests carried out on three standard test cubes made from concrete sampled from one batch of concrete in accordance with these specifications.

Percentage payment for concrete cover shall be based on the average result of the total number of cover meter tests performed on a particular concrete element.

The overall percentage payment applied to a concrete member shall be based on the average of the percentage payments applicable to each durability parameter, together with the percentage payment based on the strength requirements described in the project specifications.

The reduced payments shall apply to the relevant payment items scheduled in the Schedule of Quantities.

PSG 7.3.11 Grouting

The Contractor shall, where so ordered, carry out a site test for each grouting procedure. The tests shall be carried out on a dummy bedplate similar in configuration to that which is to be grouted, but not exceeding 1 m2 in area unless otherwise ordered. When the dummy bedplate is dismantled, the underside shall show a minimum grout contact area of 80% with reasonably even distribution of the grout over the surface grouted except that, in the case of expanding grout, the minimum grout contact area shall be 95%. The test shall show evidence of good workmanship and materials and the results shall be to the satisfaction of the Engineer.

The Contractor shall, when so ordered, make standard test cubes from various grout mixtures and also subject them to compression tests to determine whether the specified strength has been achieved. Test procedures shall comply with the relevant requirements of Sub-clauses 7.2.1 to 7.2.3.

PSG 8 MEASUREMENT AND PAYMENT

PSG 8.1.1 Formwork

Add the following Sub-clause:

PSG 8.1.1.7 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 the blinding layer shall cover the cost of such formwork.

PSG 8.1.1.8 Chamfers and fillets

No additional payment will be made for chamfers and fillets up to 40 mm wide. Larger fillets and chamfers will be measured by length in accordance with Sub-clause 8.2.5.

PSG 8.1.2 Reinforcement

Add the following to Sub-clauses 8.1.2.2 and 8.1.2.3:

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

PSG 8.1.3 Concrete

Add the following to Sub-clauses 8.1.3.3:

The rates for concrete shall also cover:

the use of dolomitic aggregate where prescribed,
the cost of the preparation of design mixes by an approved laboratory and submission for approval by the Engineer,
screeded finish of unformed surface as specified in PSG 5.5.10.1, as amended, Screeded finish, and
inclusion of admixtures.

PSG 8.2 Scheduled Formwork Items

Add the following payment item to this clause:

PSG 8.2.7 Kickers .....Unit: m2

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

PSG 8.2.8 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 the blinding layer shall cover the cost of such formwork.

PSG 8.2.9 Chamfers and fillets..... Unit: m2

No additional payment will be made for chamfers and fillets up to 40 mm wide. Larger fillets and chamfers will be measured by length in accordance with Sub clause 8.2.5.

PSG 8.4 Concrete

PSG 8.4.4 Unformed surface finishes .....Unit: m2

Add the following to this Sub-clause:

The rates for unformed surface finishes shall cover the cost of providing the respective surface finish as specified in PSG 5.5.10, as amended, Concrete Surfaces.

PSG 8.5 Joints

Add the following to this clause:

Only designated joints as shown on the drawings will be measured for payment according to the length of each type of joint constructed. The rate shall cover the 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 Sub-clause 5.5.7.3, as amended, the provision of chamfers as specified where concrete is exposed, as well as testing and repairing where necessary.

Non-designated joints will not be measured for payment.

Add the following Sub-clause to this payment clause:

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

PSG 8.5.1 Formed joints .....Unit: m

Formed joints will be measured by the length of the joint.

The rates shall cover the cost of all operations and materials specified in Sub-clause 5.5.7, as amended, and Sub-clause PSG 5.5.7.2, as amended, Formed joints (generally vertical or near vertical), and detailed on the drawings such as joint filler, dowel bars and tubes, bitumen coats, etc., but excluding waterstops or waterbars.

Waterstops and waterbars will be measured by length separately for each type.

PSG 8.7 Grouting .....Unit: m2

Add the following to this payment clause:

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 of grout under the plates to ensure solid and complete filling of the gap.

PSG 8.8 HD Bolts and miscellaneous Metal Work
.....Unit: t

Add the following to this payment clause:

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.

Add the following payment items:

PSG 8.9 Impervious membrane .....Unit: m2

The impervious membrane will be measured by the surface area covered excluding laps and wastage. The rate shall cover the cost of the supply, laying, jointing of sheets as recommended by the supplier and final trimming of outer edges.

PSG 8.10 No-fines concrete .....Unit: m2

No-fines concrete will be measured by area.

The rate shall cover the cost of supplying materials, constructing and placing in position the no-fines concrete, and shall include for the steel floated 20 mm mortar skim.

PSG 8.11 Items cast in concrete .....Unit: No.

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 grout the item in subsequently.

The item will be measured and paid separately.

The rate for the puddle pipes shall cover the cost of all things necessary to ensure that the fitting are effectively and rigidly held in position during casting including the certification and all as detailed on the drawings. Repairs for leaking cast in items will not be paid for.

PSG 8.12 Granolithic screeds.....Unit: m2

Special floor finish will be measured by area. The rate shall cover the cost of the supply and application of the specified material, complete as specified by the manufacturer and to the approval of the Engineer. Repairs to unsatisfactory work will not be paid for.

Measurement of granolithic screeds will be by the surface area covered.

The unit rate or lump sum shall cover the cost of all materials, labour and equipment required to provide the screed as specified in Sub-clause PSG 5.5.10.4, as amended, Granolithic screeds. The rate shall include the steel float finish.

PSG 8.13 Precast paving slabs.....Unit: m^2

Precast paving slabs will be measured by the area paved.

The rate shall cover the cost of compacting the area, application of weed-killer, supplying, laying and bedding the slabs, grouting the joints and filling any gaps, all as specified.

PSG 8.14 PFA concrete.....Unit: m3

Measurement and payment for PFA concrete shall be as specified in Sub-clause 8.1.3 as amended.

The tendered rate shall cover all costs in connection with the supply, storage, handling on site and mixing in of PFA.

PSG 8.15 Watertightness test.....Unit: No.

The watertightness test will be paid by a lump sum separately for each structure.

The sum shall cover the cost of all labour, equipment and materials to carry out the tests, as specified in Sub-clause PSG 5.5.11, as amended, Watertightness test, to rectify faults and to achieve a test result to the satisfaction of the Engineer.

Bidder: **DR. JSMLM:**
Initial: Authorised signatory/ies: **1.** …… **Initial:** DR. JSMLM……..

2. ……

Witness: ……

The sum shall include for all water required over and above that required for one filling of the water retaining structure based on the assumption that water will be available.

A provisional item is provided for an extra payment to the above to allow for the water not being available in time and the Contractor has to make his own other arrangements for providing water for testing. Such an arrangement shall only come into effect on the Engineer's instruction.

PSG 8.16 Slurry coat and curing .....Unit: m^2

Supply & apply waterproof treatment with proprietory chrystalline additive to all areas inside tank.

The rate shall cover for the supply and surface treatment of specified concrete surfaces according to Sub-clause PSG 5.5.8.3, as amended.

PSG 8.16 Miscellaneous Metalwork.....Unit: No.

Payment shall be by number. Separate items shall be scheduled for the following where required:

Manhole covers

The manhole cover in the reservoir roof shall be installed to the details shown on the drawings. The rate shall include supply, bitumen coating, installation and casting of the frame into the supporting concrete.

Reservoir ventilators

The reservoir ventilators in the reservoir roof shall be installed to the details shown on the drawings. The rate shall include fabrication, galvanising, shuttering, grouting and installation.

Step irons

Cast iron step irons shall be cast into the side of the reservoir wall, sump and manholes as detailed. The rate shall include for the supply and installation of the step irons.

PSG 8.17 Black Plastic Bond Breaker.....Unit: m^2

A 500 micron black plastic continuous layer is to be laid over the no-fines concrete under the reservoir floor. The side and end laps shall not be less than 100mm. Just before casting the sheeting shall be perforated in a grid pattern at 1 m centres.

Payment shall be by the square meter laid. Care shall be taken not to rip or tear the sheeting. All repairs shall be at the Contractor’s expense.

PSG 8.18 Teflon Sliding Bearings.....Unit: m

Neoprene (Kilcher or similarly approved) Teflon sliding bearings shall be placed on the top of the reservoir wall prior to casting the roof slab. A 3T50/50 bearing shall be used for the reinforced concrete reservoir, while a 3T50/100 bearing shall be used for the prestressed concrete reservoir. The top of the wall shall be cast to a smooth steel float finish.

Payment shall be per linear metre for the preparing and placing of the bearings. The rate shall include the supply, laying, jointing and masking of the bearings to the polystyrene strip.

PSG 8.19 Poly-urethane sealants.....Unit: m

A polyurethane sealant (UV-resistant) shall be used on the outside joint between the reservoir roof and walls to the details shown and shall be finished off neatly leaving a smooth regular finish.

Payment shall be per linear metre. The rate shall include the supply, preparation, sealing and finishing.

PSG 8.20 Commercial Laboratory.....Unit: Prov Sum

A Provisional Sum for the services of a commercial laboratory has been included in the Bill of Quantities for the Engineer's Acceptance Testing. The use of this laboratory is for additional testing required over and above the testing specified in SANS 1200 G and the variations to SANS 1200 G specified above. Testing shall only be paid on written instruction for additional testing from the Engineer.

The procedure for sampling and manufacturing, storing, curing and testing test cubes shall be in accordance with SABS 863.

SECTION PSHA: STRUCTURAL STEELWORK (SUNDRY ITEMS) (Applicable to SABS 1200 HA 1990)

PSHA 3 MATERIALS

PSHA 3.1 Structural Steel

Delete the Sub-Clause and substitute:

Except where scheduled to the contrary or shown on the drawings, the grade of steel to be used in the manufacture of the following shall be that grade normally supplied by reputable manufacturers approved by the Engineer:

All structural steelwork which shall include ladders, safety cages and platforms, shall be manufactured from 300W grade steel in conformity with SABS 1431, except where shown to the contrary on the drawings or in the schedule of quantities.

All stainless steel shall be grade 304, except where shown to the contrary on the drawings or in the schedule of quantities.

Grade 3Cr12 steel shall be used where scheduled or shown on the drawings and shall be fully pickled and passivated prior to installation.

PSHA 5 CONSTRUCTION

PSHA 5.1.2 Contractor to Provide Shop Details

Add to the Sub-Clause:

The Contractor shall prepare his own shop details based on the dimensions and details given on the drawings and will be required to submit his shop details to the Engineer at least 3 weeks prior to fabrication. Written consent must be obtained from the Engineer, prior to commencing fabrication. The Contractor is still responsible for ensuring that the shop details are dimensionally correct.

PSHA 5.2.6 Handrails

Add to the Sub-Clause:

Handrailing shall be of tubular construction in Grade 304L stainless steel of an approved proprietary make.

Hand and knee rails shall be not less than 32 mm O.D. (wall thickness not less than 1,6 mm) and the height of the handrails (centre) shall be 1 000 mm above walk-way level, with knee rails located approximately midway between.

Stanchions shall be not less than 44 mm O.D. (wall thickness not less than 1,6mm) and shall have ball type or spun and flared connectors to suit horizontal or angled handrailing as required. The base plates shall not be less than 8mm thick.

In general all bends in the hand and knee railing shall be 140 mm radius. Handrails shall be either side or top mounted and shall be fastened with stainless steel nuts, bolts and washers.
Spacing between stanchions shall be determined by site conditions but in no case shall it exceed 1 800 mm c/c. At bends, stanchions shall be provided on either side at a distance of 300 mm from mid-bend.

Finished handrailing shall be true to line and level and connections shall be securely fixed by means of 2 No. stainless steel pins, finished flush on each side of the joints (to the approval of the Engineer).

All ends shall have closures joining the hand and knee railing.

The rate quoted per metre is to include for the supply and installation of the handrail, knee rail, portion of a stanchion, footing, holding down bolts and nuts and is to be inclusive of all cutting, mitring, welding, grinding and waste.

PSHA 5.2.7 Ladders

Add to the Sub-Clause:

Stairs and ladders are to be provided in accordance with the details shown on the drawings.

PSHA 5.2.8 Open Grid Floors

Add to the Sub-Clause:

Open grid steel flooring is to be cut and framed to the required panel shapes and sizes all in accordance with the details shown on the drawings.

PSHA 5.2.10 Protective Treatment

Add to the Sub-Clause:

All mild steel shall be hot-dip galvanised except where shown to the contrary on the drawings or in the schedule of quantities. Hot-dip galvanising shall conform to SABS 121;2000 for heavy duty coatings or equivalent. Screwed and socketed tubing shall be galvanised in compliance with BS 1387. Galvanised malleable cast iron fittings shall comply with SABS 509.

PSHA 5.2.11 Pipe Clamps and Brackets and/or Supports (New Sub-Clause)

Clamps and brackets around pipes and supports under pipes and valves are to be constructed to the details shown on the drawings and are to be provided with all necessary bolts for fixing to concrete.

Where pipes and valves are supported inside concrete chambers on fabricated steel pipe supports, a layer of 6 mm thick GP rubber sheet (Shore hardness 65) shall be attached to the top surface of the steel support by contact adhesive prior to receiving the pipe or valve to be supported. The rubber is to extend 20mm beyond the edges of the plate.

PSHA 5.3.6 Grouting

Add to the Sub-Clause:
The Contractor will be fully responsible for all grouting work under this Contract.

PSHA 6 TOLERANCES

PSHA 6.1.3 Accuracy of Erection

Add to the Sub-Clause:
The accuracy of erection shall be the degree of accuracy II as tabulated but amended as follows:

In items d)1) and d)2) of the table the Degree of Accuracy given as "+ 5" shall be read as "+ 3".

PSHA 7 TESTING

PSHA 7.1 Test Certificates

Delete the part sentence "in terms of the project specification" from the wording of the Sub-Clause and add the words "when so requested by the former" at the end of the sentence.

PSHA 8 MEASUREMENT AND PAYMENT

PSHA 8.3 Scheduled Items

Add the following introduction to the subsequent Sub-Clauses:
The tendered rates shall cover the cost of preparing shop details (where applicable), the supply of all materials, fabrication, process control, loading, transporting to Site, off-loading, erection (unless separately included), setting into concrete or brickwork and grouting in. They shall also include for the supply of all nuts, bolts, holding down bolts, washers, rivets, cutting to waste, all temporary bracing, templates and shuttering necessary for installing, transporting and erecting.

Where the scheduled items for steelwork include corrosion protection, then the price stated shall also include for such protection as specified in SABS 1200 HC as amended by PSHC. Similarly the materials and corrosion protection for nuts, bolts, washers etc shall match the steelwork ordered.

Where the requirements of the above introduction conflict with the requirements of Sub-Clauses 8.3.1 to 8.3.6 inclusive the requirements of the introduction shall take precedence.

SECTION PSHC: CORROSION PROTECTION OF STRUCTURAL STEEL (Applicable to SABS 1200 HC: 1988)

PSHC CONSTRUCTION

Add the following Clause:

PSHC 5.1 Structural steel

All structural steel members shall be hot dip galvanized.

PSHC 5.3 Dressing and Repairs During Fabrication

Add to the Sub-Clause:
Edges shall be ground to a smooth radius of at least 1 mm unless otherwise indicated

PSHC 5.4.1 Preparation for Coating-General

Add to the Sub-Clause:
The work of surface preparation prior to painting shall be carried out at the manufacturer's works.
The work of surface preparation prior to galvanising shall be carried out at the galvaniser's works.

PSHC 5.4.3.1 Abrasive Blast Cleaning

Add to (a) General:
The standard of blast cleaning required in terms of Swedish Standard SIS-05-59-00 is Sa 2 1/2.
The surface profile after blasting shall be in accordance with the paint manufacturer's requirements for the particular paint system being used.
Add to (b) Dry Abrasive Blast Cleaning
The blast cleaning media shall not be recycled.

PSHC 5.4.3.2 Cleaning by Hand or with Power Tools

Add to the Sub-Clause:

Cleaning by hand or power tools, where permitted or ordered by the Engineer, shall be to standard St 3 of SIS-05-59-00.

PSHC 5.7 Coating system for New Steelwork

Add to the Sub-Clause:
All structural steel members shall be hot dip galvanized
The coating system to be applied under this Contract shall be carried out strictly in accordance with the manufacturer's instructions which written instructions shall be obtained by the Contractor and a copy handed to the Engineer's Representative prior to commencing painting operations.
The paint system to be used shall be selected by the Contractor from the following alternative systems:

PSHC 5.7.1 Painting System No. 1

For structural steelwork coastal regions - exterior work

AECI Dulux	DFT (µm)	Plascon	DFT (µm)
Zinc galv 6(2)	75	Zinc rich primer M1 233	70
Zinc galv 1	touch up	Chemcote High Build CHC 101 – light grey	70
Chlorinated Rubber – Kemrist	90 165	Chemcote enamel CHC 3000 series	30 170

PSHC 5.7.2 Painting System No.2

For structural steelwork coastal regions - interior work

AECI Dulux	DFT (µm)	Plascon	DFT (µm)
Zinc galv 6(2)	60	Degrease with Aquasolv GR	-
Zinc galv 1	touch up	Zinc phosphate Primer UC 182	55
Chlorinated Rubber – Kemrist	60 120	Alkyd undercoat UC 189	35
		Enamel	30 120

PSHC 5.7.3 Painting System No.3

For overcoating galvanised work

AECI Dulux	DFT (µm)	Plascon	DFT (µm)
Prepare surface Galvkleen	-	Prepare surface cleaner GIC	-
Corrocote 2(2)	10	Galvogrip metal primer	30
Chlorinated Rubber – Kemrist	70 80	Universal undercoat UCI	30
		Supergloss Enamel Code G	25 85

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

PSHC 5.8 Application of Painting Coatings

Add to the Sub-Clause:

No application of paint shall be carried out before the paint manufacturer has approved the firm of applicators and the plant to be used, except where instructed to the contrary by the Engineer.

Where applicable, the range of temperature, outside the range of +5o to 35oC, within which paint may be applied, shall be that range which the Contractor shall obtain in writing from the manufacturer of the paint.

The embedded lengths of irremovable fasteners which penetrate deeper than 75mm from the concrete face may be left as base metal. The remaining portion shall comply with the paint system specified for the adjacent steelwork.

Surfaces which will become inaccessible for coating after fabrication or erection shall be given the full paint treatment specified plus one further top coat prior to the surfaces becoming inaccessible.

PSHC 5.9 Application of Metal Coatings

Add to the Sub-Clause:

The grade of HDG (hot dipped galvanising) required shall be carried out in accordance with SABS 121:2000, and shall be that for heavy duty coatings. This shall be applicable to all metalwork where HDG is called for either on the drawings or in the Schedule of Quantities.

PSHC 7 TESTING

PSHC 7.1d) Testing by the Contractor

Tests are not required to be carried out after the application of each intermediate coat.

PSHC 7.3.8 Dry Film Thickness

The frequency of DFT test readings required is to be in accordance with SABS Method 141.

SECTION PSL: MEDIUM PRESSURE PIPELINES (Applicable to SABS 1200 L – 1983)

PSL 1 SCOPE

PSL 1.1 Add the following:
uPVC : Unplasticised Polyvinyl Chloride
HDPE : High density polyethylene
GMS : Galvanised Mild Steel

PSL3 MATERIALS (Clause 3.1)

Amend Sub-Clause 3.1 as follows:
"Pipes and fittings shall be of the types specified in the schedule or in the project specification and, unless otherwise required in terms of the project specification, they are their couplings shall be capable of withstanding the applicable test pressure. All pipes and fittings shall be supplied complete with couplings and jointing material.
Satisfactory temporary end covers shall be provided for the protection of threads, flanges, and prepared ends of plain ended pipes and fittings, and to prevent damage to internal lining during transportation and during on site.
The materials and construction of all pipes, fittings, valves and specials shall comply with the appropriate SANS, BS or other appropriate specification, whether stated or not, and shall be approved by the Engineer. Only full-length pipes bearing the relevant standard's mark will be acceptable. Cut pipes shall only be used at pipe junctions to position valves and specials as shown on the drawings, and at connections to structures. When laying the pipes the markings shall be visible from above.
The Contractor shall be responsible for the structural and hydraulic design of all bends and fittings where these are not standard off the shelf items designed and guaranteed by the manufacturer for the purpose intended.
The Engineer shall at all reasonable times have free access to the place where the goods are manufactured for the purpose of examining and sampling the materials and goods, and if necessary for supervising the testing and marking of goods. The manufacturer shall supply free of charge every facility and all labour required for such examination, sampling, inspection, testing and marking before delivery and shall provide and maintain in good order suitable, convenient and accurate apparatus for testing goods."

ADD THE FOLLOWING TO CLAUSE:

The contract specifications for materials and construction activities will conform to SANS 1200, SANS 1914-5 and Dr JS Moroka Local Municipality's requirements. The project specifications will include specific items to ensure proper implementation, control reporting on labour based construction and methods as included in the specifications.
Materials for this contract must be obtained from manufacturers who operate an effective quality management system such as that described in SANS 0157 or ISO 9000 and proof of this must be submitted to the Engineer.

Bidder:
Initial: Authorised signatory/ies: **1.** ……
2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

PSL3.1 uPVC Pipes (Clause 3.7.3)

Add a new clause:

uPVC pipes and fittings shall be fitted with spigot and socket rubber ring joints and shall comply with the requirements of SANS 966-1: 2014 (uPVC).

PSL 3.1.3 Fittings and Specials

The Contractor will prepare the shop drawings and design of all steel special according to AWWA C200, C206 – C216, ANSI/ AWWA C222 and AWWA M11. Specials and fittings, unless otherwise shown on the drawings, shall be made of segmentally welded sections with ends compatible with the type of joint or coupling specified for the pipe.

PSL3.2 HDPE pipes

REPLACE THE SUBCLASE WITH THE FOLLOWING

“HDPE pipes of diameter up to and including 63 mm shall conform with SANS 4427 Part 2 for Type IV pipes. HDPE pipes greater than 63 mm shall conform with SANS 4427 Part 3 for Type V pipes. Unless otherwise specified, pipes shall be Class 16 and plain ended for butt welding”.
ADD THE FOLLOWING NEW SUBCLAUSE:

PSL3.2 Steel pipes (Clause 3.7.4)

Standard steel pipes joints shall be groove ended galvanised carbon steel pipes with Klambon type cast galvanised SP couplings or similar approved and shall comply with the requirements of SANS 62.

PSL3.3 Steel pipes, fittings and specials (Clauses 3.4.2 and 3.4.3)

All steel pipes and specials for reservoirs and sedimentation tanks, irrespective of diameter, shall be fabricated from plain ended pipes. The use of screwed flanges and fittings shall be limited and minimised, except for use on air-valve assemblies. All fabrication shall take place in a suitable workshop prior to galvanising, and no cutting or welding of pipes on site shall be permitted.

PSL3.4.1 Steel pipes, Fittings and Specials (Sub- Clause 3.4.1)

Amend this Sub-Clause as follows:

“The Contractor shall, if so instructed, make available to the Engineer the maker’s certificates covering the chemical analysis and physical properties of the steel used in the manufacture of pipes and specials, and shall provide written confirmation that welding has been carried out by coded welders.

The pipes shall be hydraulically tested before leaving the factory to the test pressure specified in Sub-Clause 7.3 of SANS 1200 L. The methods of sampling and testing of the manufactured pipes shall comply with Sections 6 and 7 of SANS 719.

The tests shall be carried out at the place of manufacture and at the expense of the Contractor. Upon delivery of the goods concerned the Contractor shall submit a signed certificate giving results of the tests and certifying that the goods concerned have been manufactured in accordance with this specification.”

PSL 3.4.4 Fittings and Specials

Add to the Sub-Clause:

The sides of taper pieces shall diverge at an angle of not more than 19° to each other.

The bend, fitting, and special fabricator shall supply written confirmation that all hand welding has been carried out by coded welders.

Bends, fittings, and specials ≥DN600 shall have the internal lining and external coating made continuous ("made good") for welded joints on coated and lined pipes.

Bends, fittings and specials shall be manufactured and tested in accordance with the specification for straight pipe and additionally with Section 8 of BS 534. The nominal dimensions of each bend, fitting and special required are itemised in the Bill of Quantities and/or on the drawings and 'exact length' tolerances shall be adhered to. All plain ends on bends, fittings and specials shall have the plain ends prepared for butt welding except those plain ends that are to be jointed with adaptor joints.

Bends shall generally be of the segmented type except where otherwise stated or shown on the drawings.

The Contractor will be responsible for providing and fixing strengthening webs, crotch plates, gussets, etc. as shown on the drawings and in accordance with the requirements of AWWA M11 and as may be necessary to prevent excessive deflection or deformation of fittings and specials when subjected to hydraulic tests and the rate for the work will be deemed to include for the provision of this reinforcing wherever necessary.

Bends shall be fabricated in accordance with the Table below.

Deflection of Angle	
Up to and including 3 °	One pipe end scarfed on site
Exceeding 3 ° and up to and including 9 °	Mitre cut (two pipe ends scarfed on site)
9 º and larger but less than 15 º	2 segment bend
15 º and larger but less than 45 º	3 segment bend
45 º and larger but less than 60 º	4 segment bend
60 º and larger but less than 75 º	5 segment bend
75 º and larger but less than 90 º	6 segment bend

Bends greater than 90º shall be fabricated from combinations of items from the table above.

Shop drawings of bends, fittings and specials shall be submitted to the Engineer for approval prior to manufacture.

All flanged bends, fittings and specials shall be hydraulically tested at the fabricator's premises to the same pressure that they will be subjected to during the hydraulic testing of the completed pipeline. No visible signs of leakage will be permitted.

PSL 3.4.5 Puddle Collars and Anchoring Flanges (New Sub-Clause)

Add new Sub-Clause:

Puddle collars and anchoring flanges used as pipe anchorages shall be of the same dimensions as corresponding flanges but those cast into concrete walls are to be undrilled. The collar/flange shall be capable of transmitting a longitudinal force 33% greater than the internal hydraulic pressure to be applied when testing, multiplied by the area of the bore and, under that condition, the stress in the material shall not exceed its yield stress.

Where puddle collars are shown on the drawings as being 20 mm thick, those collars are not required to transmit thrust, their purpose being to assist with the waterproofing of the concrete chambers by increasing the path that ground water might have to take to enter the chambers.

Where polyethylene pipes are cast into concrete structures, they shall be specially prepared and adapted by positioning a custom-made tight-fitting natural rubber sealing sleeve around the circumference of the pipe and in the case of structured-wall pipe creating shear keys through removing small segments of the outer wall. The rubber seal shall be 10 mm thick and 200 mm wide or 80% of the width of the wall and shall be 60-65 shore hardness, with a vulcanised joint. It shall need to be stretched over the pipe circumference to ensure a tight fit.

PSL 3.8 JOINTING MATERIALS

PSL 3.8.1 Flexible Couplings

Delete the Sub-Clause and substitute the following:

Where ordered, steel flexible couplings are to be of the "Viking Johnson"/"Klamflex"/ ”Aqualok” or similar approved type without central registers, each comprising one centre collar, two special flanges, two rubber rings and hot dipped galvanised mild steel bolts.

Steel couplings shall be assembled strictly in accordance with the manufacturer's instructions and all bolts shall be torqued to the value recommended by the manufacturer. On completion of hydraulic pressure testing of the installation, the entire joint shall be protected as described in Clause PSL 3.9.3.8.

The tendered prices for laying and jointing are to include for the supply of all necessary materials, plant and labour to complete the joint.
Flexible couplings shall conform generally to Clause 15 of BS 534 for slip-on type couplings and shall be of approved manufacture. They shall be capable of being tightened and released without damaging or improperly distorting the rubber seating rings and shall be designed to prevent the rubber rings being blown out under pressure or sucked in under vacuum.

The steel used shall conform to the appropriate British Standard Specification and each coupling is to be capable of withstanding the test pressure applicable to the pipes with which they are to be used without exceeding a stress in the steel of 67% of the yield point.

Mild steel couplings shall be protected by an approved epoxy coating system such as “Polyclad 777” (or similar approved) within 4 hours of abrasive blast cleaning the metal surfaces of the coupling in accordance with Swedish Standard SIS 05 59 00 Grade SA 2,5. Nuts, bolts and washers shall be hot dipped galvanised. The plain end of the pipe shall be properly prepared, and in the case of steel pipes before corrosion protection, so as to accept the flexible coupling.

Adaptor couplings and anchoring adaptor joints shall comply with the above specification for flexible couplings and be of a similar design, but one end shall be flanged to enable connection of plain ended pipes to flanged joints. The adaptor joints are to be complete with bolts and nuts for connecting the flanged joint to the anchoring flange situated generally 300 mm to 400 mm from the plain end of pipe. All bolts, nuts and washers are to be hot dipped galvanised. In order to anchor the plain ended pipe to the flanged joint all of the bolts for the flanged joint are to pass though the anchoring flange and are to be fitted with nuts and washers at the flanged joint and on either side of the anchoring flange.

PSL 3.8.2 HDPE PIPE JOINTS

PSL 3.8.2.1 Stub and flange (New Sub-Clause)

Joints for HDPE pipe shall be by means of stub and flange, welding, welded flanges or approved external compression type fittings (Plasson or similar approved)." The Contractor to make provision in their rates for he submission of required documents with regards to the testing of jointing systems by an approved manufacturer or specialised subcontractor.

PSL 3.8.3 FLANGES AND ACCESSORIES

PSL 3.8.3.1 Bolted Connections (New Sub-Clause)

Add new Sub–Clause:

All flanges, gaskets, bolts, nuts washers and other appurtenances required for the execution of the work under this Contract shall be supplied and installed by the Contractor under this Contract.

Flanged bolted connections shall comply with the following:

All flanges shall have a raised face.

Temporary end covers shall be provided by the Contractor for protection of flanges, and prepared plain ends of pipes and fittings to prevent damage to internal lining during transportation and during handling on site.
All piping and flanged surfaces shall be cleaned before connections are made.
The (raised) faces of flanges that are in to be in contact with gaskets shall be masked and shall not be painted or coated. The mating flange shall then receive one coat of rust inhibitor (Plascon Rustix 84 or equal approved). Care shall be exercised to ensure that after the application of all coatings there are no runs or drips on the mating surfaces of the flanges and that the flange profiling is clearly visible over the entire face. Excessive coating build up in flange bolt holes that could snag bolts will not be permitted.
Flanged joints shall be connected with the specified bolts, nuts and washers all of which are to be supplied by the Contractor.
All bolts, tie-bolts, nuts and washers shall be galvanised to SABS 121:2000 and shall comply with the relevant requirements of SABS 135 – 1985 and SABS 136 – 1985 where applicable.
The length of each bolt shall be such that after the bolt has been tightened, the end of the bolt shall project beyond the outer face of the nut, but not by more than two threads. Tie-bolts on restrained/anchoring couplings shall be fitted with "backing nuts" and washers.
Each flanged joint is to be fitted with an approved and suitably rated gasket and sealed watertight such that there will be no visible sign of leakage under the specified factory and field test pressures and under the in-service working conditions (pressures).
All bolts are to be tightened in a predetermined pattern with opposing bolts being tightened sequentially. When all bolts are tight, each bolt is to be torqued to the required/recommended torque in a

predetermined pattern with opposing bolts being tightened sequentially.
All bolt threads shall be liberally coated with “Copper slip” or similar approved compound prior to assembly. Upon completion, bolt heads, washers and nuts shall be wrapped with the “Denso Mastic Blanket System” comprising of a priming solution, mastic blanket, petrolatum tape and lay-flat sheeting as described in Clause PSL 3.9.3.8.

PSL 3.9 CORROSION PROTECTION

PSL 3.9.2 Steel Pipes

PSL 3.9.2.1 Steel Pipes of Nominal Bore up to 150mm

All steel pipe specials of nominal bore up to 150 mm shall be factory coated and lined with hot-fused Rilsan (nylon polyamide 11) coating to a DFT of at least 350 microns generally in accordance with Subclause 3.9.2.2 and in accordance with the epoxy manufacturer’s specifications for preparation of the receiving surface and application of the product.

PSL 3.9.2.2 Steel Pipes of Nominal Bore over 150mm

Unless otherwise scheduled, all mild steel specials up to DN500 in size shall be factory coated with a rigid polyutherane (Polyclad 777 or similar approved product) and lined with solvent free polyamine (carboguard 891 or similar approved) coating to a DFT of at least 1500 microns and 500 microns respectively in accordance with Subclause 3.9.2.2 and in accordance with the epoxy manufacturer’s specifications for preparation of the receiving surface and application of the product.

Unless otherwise scheduled, all mild steel specials larger than DN500 shall be factory coated and lined with a solvent-free two-pack glassflake surface-tolerant epoxy paint (DENSO S.T. 100 or similar approved) applied in two layers to a total DFT of at least 350 micrometres and lined with twin pack epoxy polyamide (Pipecoat SFX or similar approved) in accordance with Subclause 3.9.2.2 and in accordance with the epoxy manufacturer’s specifications for preparation of the receiving surface and application of the product.

Unless otherwise specified, all steel pipes, fittings and specials with a cement mortar lining shall be in accordance with the requirements of the Australian Standard ASW 1281:2001 with thicknesses as stated in Clause 3.9.1 (and 3.9.2 for DN 250 pipes).

PSL 3.9.2.3 Preparation of Steel Surfaces for Repairs and/or Reinstatement of Internal Lining and/or External Coating (New Sub-Clause)

Add new Sub-Clause:

The following method is applicable for the preparation of all exposed steel surfaces prior to the carrying out of any repair procedure to internal linings and/or to external coatings. This specification is applicable to all pipe steel surfaces which have been stripped of their corrosion protection layers, internally or externally, as a result of the manufacturing of specials, construction activities or pipe laying, welding and/or damages caused by handling or latent defects in application.

Degreasing:

All bare metal surfaces shall be degreased in order to remove grease and oil from the pipe surface as a first step in the preparation process i.e. before grit blasting and/or power brushing starts. Degreasing shall be carried out using a non-volatile solvent (e.g. “Aquasolve”, “Chesterton Nr. 261 Safety Solvent Cleaner” or similar approved substance). The surface shall then be cleaned with potable water and left to dry completely before the next step is taken.

Grit Blasting – Internal Lining Repair:

Grit blasting of bare metal surfaces shall take place after degreasing of the area. The finished grit blasted surface shall be 75 micron with an angular profile.

Transition areas from EPOXY internal lining, to bare metal which have been grit blasted, shall be smooth without rough edges or flaking appearances.

All grit blasting within the pipe line that is under construction, shall be performed by way of a “vacuum blast” process in order to limit the generation of dust.

Grit blasting shall, under all circumstances, be carried out using equipment suitable for the size of the work to be undertaken.

The Contractor shall provide the Engineer with a method statement for approval for each type/location of grit blasting, before work commences.

Power Brush – External Coating Repair:

Power brushing of bare metal surface shall take place after degreasing of the area as specified. The area that has been power brushed shall be free from rust, laitance, dust, oil or other deleterious matter before the application of primer. Any areas in the region where power brushing took place shall be free from signs of disbonding of lining and/or coating, once power brushed. The surface finish, once power brushing has been completed, shall conform to minimum St2 standard.

PSL 3.9.2.4 Holiday Testing – Epoxy Linings and Coatings (New Sub-Clause)

Add new Sub-Clause:

All Holiday Testing of epoxy linings and coatings shall be carried out with an instrument approved by the Engineer. The sparking detection test shall conform to the standards as set out in SANS 1217:2001 and BS 3003 Part 1. The Contractor shall familiarise himself with the dielectric strength (breakdown strength) of all the coatings and linings he works with for the different pipe sizes. The Contractor shall also have an in depth knowledge of the Holiday Testing equipment he works with, in order to calculate the Corona discharge effect for the typical brush being utilised, with reference to the specific ambient conditions for any specific test.

All Holiday Testing shall be executed at a voltage which is set at 50% of the value of the dielectric strength of the lining or coating being tested. The Contractor shall carefully analyse the loss in test voltage as a result of the Corona Effect, specific to the ambient conditions surrounding the test. The test voltage of the Holiday Testing equipment shall be adjusted such that the voltage drop as a result of the Corona Effect will be taken into account when the actual 50% threshold of the dielectric strength is calculated.

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The Holiday Test equipment shall be calibrated by an approved supplier and checked every 30 minutes or every time a test at a different location is started. Each piece of equipment shall have a unique identification number with calibration certificates and detail of equipment utilized shall be submitted to the Engineer for approval. Method statements for the process of holiday testing shall be submitted to the Engineer for approval.

The correct equipment for the type of application shall be utilized. For example, where pin holes have been repaired and re-testing for effectiveness of repair work being done, the Contractor shall utilize the correct equipment to effect same and this shall include the use of a pencil brush which concentrates the efforts of holiday testing at the repair. Where spark tests are performed on Tape Wrap systems, the minimum brush width shall be 300 mm. The brushes utilized shall be brass bristle cone brushes. The typical brush speed shall be 200 to 300 mm/sec when doing spark tests

The Contractor shall, at his expense, test each and every surface area, that is internal lining as well as external coating, during construction as per this specification. Testing for holidays shall be done after inclusion of materials, manufactured specials and equipment, as well as pipes, into the permanent works. Any defects found shall be repaired and the costs for remedial work shall be deemed to be included in the tendered rates for the construction of the pipeline. These tests and results shall be recorded on the quality control plan as approved by the Engineer.

PSL 3.9.3.2 Preparation Mixing and Application of Epoxy Compounds (New Sub-Clause)

Add new Sub-Clause:

When mixing two part epoxies the base and activator shall be mixed in accordance with the manufacturer's specifications. Mixing in the original container will only be permitted by means of methods that ensure full integration of different parts of the compound into a homogeneous compound with the characteristics as intended by the manufacturer. The different parts of the compound shall not be diluted. Mixing shall only be allowed with full batches and reduction of volumes from mixing packs by means of weight or volume measurement, which will result in smaller portions to be mixed, will not be allowed. In the application of the epoxy the following shall be strictly in compliance with the manufacturer's instructions:

Method of application (Type of Brush or roller.)
Over coating time.
Temperature range for application.
Method of mixing base and activator.
Number of coats to achieve the specified thickness.
Safety aspects e.g. Eye and hand protection, ventilation, fire precautions, etc.
Note that roller and brush applicators shall be replaced once the product application expiry time has been reached on any specific applicator tool.

Uncured epoxy shall be regarded as being toxic and shall be handled in accordance with the manufacturer's instructions. Adequate lighting and ventilation shall be provided whilst working within the pipeline.

Only solvent free epoxy repair kits shall be utilized to repair the internal linings of the pipe line. This specification refers to "two part epoxy" as an epoxy repair kit which consists of a base and an activator approved by the Engineer and could be products similar to "Denso ST100", "Sigma SF 523", "Nordbak", etc.

For the repair of cement mortar linings, “Epidermix 338” or similar approved will be required.

The Contractor’s tendered rates for the laying of the pipe shall be deemed to include for all the repairs and make-goods that have to be effected in order to deliver a serviceable and acceptable pipe line. (This excludes such repairs as instructed by the Engineer as a result of manufacturing defects, if any).

Two part epoxy may only be applied on steel surfaces prepared as specified in PSL 3.9.3.1.

PSL 3.9.3.3 Making Good of Cement Mortar Lining at Welded Joints (New Sub-Clause)

Add new Sub-clause:

When straight steel pipes are cut, the cement mortar lining is to be cut back between 50 mm and 75 mm from the cut end of the pipe and “chamfered” by approximately 15 degrees to provide a positive dove-tail joint for the epoxy mortar repair plug after butt welding.

The surfaces are to be prepared as specified in PSL3.9.3.1.

A 50 mm wide by 20 mm thick band of “Epidermix 338” or similar approved epoxy, shall be applied internally on the uncoated steel adjacent to the cement mortar lining. For pipes that are too small for internal access for hand repairs, the plain end of the adjoining pipe shall be pushed into the bellmouth (or into the external sleeve when there is no bellmouth) in such a way that the epoxy band is compressed and makes contact with the transverse face of the cement mortar lining of both pipes. The excess material that is squeezed into the bore of the pipes is to be removed by drawing a suitable plug that is 5 mm smaller than the bore of the cement mortar lining across the joint. The plug that is used shall be such as to render an even and smooth finish to the epoxy at the joint. The timing of when the plug is pulled through is critical and shall be carefully controlled.

For pipes large enough for safe internal access, the cement-mortar lining shall be made-good with the same materials, but by hand.

PSL 3.9.3.4 Repair and Making Good of Solvent Free Epoxy Linings (New Sub-Clause)

Add new Sub-clause:

Pipes with linings damaged prior to acceptance by the Contractor shall be marked and recorded by both the Contractor and the Engineer’s Representative and then repaired by the Contractor. The payment rate for repair shall be made at the scheduled rate.

Once the Contractor has accepted pipes with undamaged linings from the Employer, any subsequent damage to the lining in the pipes shall be repaired by the Contractor at his expense.

All making good of internal solvent free epoxy linings at welded and flanged joints that is required to ensure continuous internal corrosion protection to steel surfaces shall be carried out strictly in accordance with the manufacturer’s specifications. The Contractor shall ensure that making good of linings is carried out progressively as the pipe is being laid and shall not be permitted to lag behind for more than three pipe lengths at each working front.

PSL 3.9.3.5 External Corrosion Protection of Factory Welded Joints and Coating Repairs (New Sub-Clause)

Add new Sub-clause:

All DN 600 steel pipes that are to be field-welded shall be supplied with the external coating cut back 100 mm from each pipe end. Where pipes are to be cut, either on site, or for the purpose of fabricating bends, fittings and specials, or in the event of the pipe coating being damaged, the pipe coating shall be cut back 100 mm from the intended cut area before the pipe is cut. Damp hessian sacking or other suitable material is to be temporarily fixed around the pipe to prevent damage to the pipe coating during welding operations. Once welding is complete, and all weld splatter and burnt coating has been removed, the welded pipe joints shall be wrapped in the following manner.

The following specification is based on "Denso" products and systems. Alternative products and procedures may be proposed by the Contractor and, if approved by the Engineer, they may be used. Irrespective of which products are approved by the Engineer and used by the Contractor, all procedures shall be carried out strictly in accordance with the Contractor's method statements which shall conform to the manufacturer's recommendations.

A fundamental outcome is a sound and continuous coating that is free from wrinkles and that does not have any entrapped air pockets or any air bubbles.

Surface Preparation

The bare metal shall be cleaned and wire brushed to minimum St.2 standard and, degreased with white spirit. The adjacent pipe coating shall be cleaned to a minimum of 300 mm either side of the joint and the edges "feathered" to achieve a tapered transition over a distance of 100 mm. The sound, parent coating surface shall be roughened with sandpaper over an area 250 mm either side of the joint.

Priming

The entire pipe and coating surface over a length of 250 mm on either side of the joint shall be primed using "Denso Primer D" (or equivalent approved). Care shall be taken to obtain a thin even film with no runs or sags. The primer shall be allowed to cure until "tack dry" before the application of the tape commences. Priming may only be carried out on those areas that are to be wrapped that same day. If primed areas are to be left overnight, those areas shall be re-primed before wrapping.

Profiling Tape

A 1.5 mm thick x 50 mm wide "Denso Mastic Sealing Tape" (or equivalent approved) shall be applied to the full circumference of the weld bead in accordance with the manufacturer's specifications. Care shall be taken to ensure a smooth profile and to avoid air bubbles being trapped beneath the tape. (Note: The profiling tape may be omitted at the discretion of the Engineer. Tenderers shall nonetheless allow for the profiling tape in their tendered rates).

Tape Wrapping

The joint shall then be wrapped (minimum 55 % overlap) with "Denso CPT 1250/300 Polyethylene/Bitumen" tape starting at the roughened section (250 mm from the welded joint) in accordance with the manufacturer's requirements to create a 500 mm wide wrapping, centred over the welded joint. A 100% overlap is required on the first and last revolutions of the tape wrapping operation.

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It is important that tension in the tape be released when the wrapping of the last half circumference of the pipe. The Contractor shall ensure that the wrapping overlaps or covers a minimum of 150 mm of the pipe coating. A secondary or outer tape wrap layer is then to be applied over the first layer with a 10% tape overlap.

An alternative tape wrapping system that may be used is the “Densotherm 35 Hot Applied Bitumen Tape” system. The procedures are similar to those for the “Denso” system described above except that the underside of the tape shall be heated as it is applied and the overlaps and seams of the tape are to be sealed by means of a heated tool.

PSL 3.9.3.6 External Corrosion Protection of Shop-Fabricated Pipe Bends and Fittings (New Sub-Clause)

Add new Sub-Clause:

The external coating of shop fabricated bends and fittings shall be carried out as follows:

Where a substantial part of the external coating on the parent pipe is intact, the coating repairs/make good shall be carried out in accordance with PSL 3.9.3.5 or
Where black (uncoated pipe has been used), the coating shall be carried out in accordance Umgeni Water’s specification for “Pipe Lining System 2: Solvent-Free Epoxy Lining” or
Where only a relatively small proportion of the external coating on the parent pipe remains, all of the remaining coating shall be removed and the entire bend/fitting shall be coated in accordance Umgeni Water’s specification for “Pipe Lining System 2: Solvent-Free Epoxy Lining”.

All crotch plates and wrappers/collars shall be coated in accordance with project specification for “Pipe Coating System 1: Solvent-Free Epoxy Lining”.

After application of the SFE coatings to the crotch plates and collars/wrappers, approved mastic (refer PSL3.9.3.8) shall be placed in all crevices that may become moisture traps.

No additional payment will be made for any of this work as the costs are deemed to be included in the scheduled rates for pipelaying.

PSL 3.9.3.7 External Corrosion Protection of Site-Fabricated Pipe Bends and Fittings (New Sub-Clause)

Add new Sub-Clause:

The coating repairs/make good shall be carried out in accordance with PSL 3.9.3.5.

PSL 3.9.3.8 Corrosion Protection of Buried Flanges and Flexible Adaptor/Anchoring Joints (New Sub-Clause)

Add new Sub-clause:

All buried flanges and flexible joints and adaptor/anchoring joints and their associated bolts, nuts and washers, shall, notwithstanding that the flexible and adaptor/anchoring joints will be epoxy coated as specified elsewhere, be protected as described below.
(Note: This specification is based on a “Denso” system. Alternative products may be used, subject to approval by the Engineer).

Surface Preparation:

The entire surface area of the flange/adaptor/anchoring joint, and its bolts, nuts and washers, up to no less than 250 mm either side of the joint, shall be cleaned of all dirt and other deleterious matter. The cleaned area, up to 200 mm either side of the flange/adaptor/anchoring joint, shall then be wire brushed.

Priming:

The cleaned flange/adaptor/anchoring joint, bolts, nuts, washers and the adjoining 200 mm length either side shall be primed with “Denso Priming Solution”, or if moisture is present, with “Denso S105 Paste”.
Application of Mastic Blankets:

Narrow strips cut from “Denso Mastic Blanket” shall be applied to the flange/adaptor/anchoring joint to achieve a smooth profile with a 50 mm splayed fillet being formed at the joint/pipe interface. Care shall be taken, particularly at bolts, to avoid the formation of air pockets. Complete “Denso Mastic Blankets” shall then be applied (mastic side down) to the flange/adaptor/anchoring joint until the flange/adaptor/anchoring joint is completely enveloped.

The blanket shall be overlapped at least 50 mm and shall extend at least 150 mm along the pipe barrel on each side of the flange/adaptor/anchoring joint. The ends of the blanket shall be bound to the barrel of the pipe on each end with 100 mm wide “Denso Tape”. The “Denso Tape” overlaps shall be 50 mm and shall extend 100 mm onto the blanket and 150 mm onto the pipe barrel.

Application of Protective Sheeting:

The entire flange/adaptor/anchoring joint shall then be wrapped with 350 micron polyethylene sheeting which shall end 400 mm beyond the joint. The protective sheeting shall be secured to the pipe barrel and along the seam with 48 mm wide “Denso Adhesive Tape”.

PSL 3.9.3.9 Coating of Permanently Exposed Pipes/Fittings (New Sub-Clause)

Add new Sub-Clause:

All pipes which are to be permanently exposed shall, in addition to the specified corrosion protection at flange/adaptor/anchoring joints, be protected with the “Denso Acrylic Pipeline Tape (Steelcoat 500)” system or similar approved UV resistant coating. The pipe surface shall be prepared and the coating applied in strict accordance with the manufacturer’s instructions.

Surface Preparation:

The pipe surface to be wrapped shall be cleaned of dirt, grime, grease and other deleterious matter, using white spirit if necessary and then allowed to dry thoroughly.

Priming:

“Denso Primer D” shall be applied to the prepared surfaces at a nominal coverage rate of 8 m² per litre. Care shall be taken to obtain an even film with no runs or sags. Only those areas that are to be wrapped the same day shall be primed. If primed areas are to be left overnight, these areas shall be re-primed before wrapping.

Tape Wrapping:

The joint shall be spirally wrapped (minimum 55% overlap) with “Denso Acrylic Tape” (or approved equivalent) in accordance with the manufacturer’s requirements such that the start and end points are located at buried sections of the pipe, before it daylights. A 100% overlap is required on the first and last revolutions of the tape wrapping operation. It is important that tension in the tape be released when the wrapping of the last half circumference of the pipe.

Final Coating:

One coat of “Densoflex Fire Retardant” shall be applied to the exposed pipe at a nominal application rate of 3 m^2 per litre.

PSL 4 PLANT

PSL 4.4 Packing (New Sub-Clause)

Goods should be suitably packed in such manner as will ensure safe and efficient transport by road or rail, and the Contractor shall include in his prices for whatever packing may be necessary in this respect. Small items particularly liable to damage or loss in transit should be crated. All crates and packing material shall, after use, become the property of the Employer, unless distinctly specified otherwise, or if returnable, shall be so at the Contractor's expense.

PSL 5 CONSTRUCTION

PSL 5.1 LAYING

PSL 5.1.3 Keeping Pipelines Clean

Add to the sub-clause:

The Contractor shall take all of the steps necessary to prevent flooding of the Works and hence ensure that all work is carried out in the dry, and that the ingress of dirt and or dirty water into the pipes is prevented.

PSL 5.1.3.1 Cleaning Pipe Internals (New Sub-Clause)

Add new Sub-Clause:

The Contractor shall ensure that all pipe work is installed internally free of any contaminants. All traces of dirty water, slag, splatter, swarf, cuttings, coupons, welding rod ends, grinding dust, dirt and other debris are to be removed from the inside of the pipe as it is installed.

The Contractor’s attention is drawn to the fact that a rubber mat is to be provided for walking on inside the pipe. On steep slopes, the mat is to be restrained from sliding down the pipe. Care shall also be taken on steep slopes to restrain equipment and hand tools from sliding down the pipe during construction.

The relevant safety procedures are to be followed when entering pipes.

The Contractor shall ensure that all dust, grit and powder that accumulates in the pipe as a result of grit blasting for the repair of internal linings, is removed from the pipe in an acceptable manner before the internal lining repairs are carried out.

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Once the lining repair has been completed, cleaned off and inspected, that specific section of the pipe shall be blocked off to prevent any further access by workers.

The Contractor shall take note that flushing of the completed pipeline may not be allowed possible immediately after construction has been completed and therefore clean house keeping practices will be required under all circumstances during construction. The tendered rates for pipe laying shall include for the clean house keeping practices required.

Each section of the pipeline is to be internally inspected and passed by the Engineer once construction has been completed. If the pipework is not satisfactory, the Contractor shall re clean the pipe at his own expense until the pipe is passed clean. The Engineer reserves the right to utilize cameras or any other means to inspect inaccessible areas.

PSL 5.1.3.2 Cleaning of Valves and Fittings (New Sub-Clause)

Add new Sub-Clause:

All flanges, valves, fittings and equipment are to be installed in pipe work only after they have been thoroughly cleaned. Flange faces shall be checked for damage before being incorporated into the permanent works and any damage shall be reported to the Engineer.

PSL 5.1.7 Pipe Support (New Clause)

Add new Sub-Clause:

Temporary pipe supports may be used to assist setting up and assembly. However, it is preferred that permanent pipe supports are installed as soon as possible to minimize double handling and/or omission during construction.

Permanent pipe supports shall be constructed as indicated on the drawings or as directed on site.

Before testing, all permanent supports shall be complete and all temporary supports removed, unless otherwise agreed by the Engineer.

PSL 5.1.8 End Caps (New Sub-Clause)

Add new Sub-Clause:

The Contractor shall, at the end of each day's work, fit end caps to the open ends of the pipeline under construction. The end caps shall be manufactured in such a manner that they can be fitted to seal off the pipeline to the extent that it is totally dust and water proof. The end caps shall be able to withstand a pressure of 5 m head of water externally when fitted.

End caps shall be maintained during non-working periods.

The tendered rates for the laying of pipe shall be deemed to include for the supply, fitment, and maintenance of the end caps.

PSL 5.1.9 Marker Posts (New sub-Clause)

Pre-cast concrete marker posts as shown on the drawings and painted white in colour shall be set at all horizontal direction changes and where otherwise indicated by the Engineer.

The standard marker post rate shall include the supply and erection of painted, inscribed posts. The rate shall be inclusive of erection and shall include for all necessary excavation, mass concrete footing and formwork.

PSL 5.2 JOINTING METHODS

PSL 5.2.2 Flanged Joints

Add to the Sub-Clause:
Before being brought together, the ends of the pipes, fittings, couplings and flanges are to be inspected and cleaned to ensure that all parts forming the joint are undamaged and clean.

When jointing flanges, the faces shall be cleaned thoroughly and approved jointing material (cement fibre or other approved gaskets on flanged joints), cut properly to size, is to be inserted immediately before bringing the two flanges together. Before closing the joints, the flanges shall be parallel to each other, with all bolts inserted in the bolt holes. After the fittings have thus been aligned and well supported, the joint shall be bolted up to a uniform tightness using torque wrenches to achieve the required compression force on the gasket.

If and where full face gaskets are used, the jointing material shall be flush with, or protrude beyond, the outer circumference of the flange (this in not applicable to raised face flanges). On completion of the joint, the flanges and bolts shall be protected as described in Clause PSL 3.9.3.8.

PSL 5.2.3 Welding (Steel Pipelines DN 600 or Greater)

Delete the title and replace with “Welding (Steel Pipelines)”.

Delete the 1st sentence and replace with:

Field welding of steel pipelines shall be carried out in accordance with the relevant requirements of the latest version of API 1104. The Contractor, prior to commencement of welding, shall produce a qualified welding procedure in accordance with the latest version of API 1104, for the intended sizes, processes, positions and consumables to be used on this project.

Welding shall be carried out by welders who are competent in terms of the procedure approval test given in API 1104. Prior to commencement of welding, the current qualification of each welder shall be produced in accordance with the welding procedure. Should constant repairs be required on welds carried out by one particular welder, the Engineer may request that the welder be re-tested or removed from the project.

Add to the Sub-clause:

Radiographic Examination of Shop Welds

The Contractor shall provide a manufacturer’s certificate proving that the following examinations were carried out in the factory:

i) ONE HUNDRED percent radiographic examination of all welds deposited by an approved automatic process.

ii) ONE HUNDRED percent radiographic examination of all welds deposited manually or semi-automatically, and repairs to welds done by an automatic process.

In addition the Contractor shall include in his prices for the manufacture of pipes, bends, fittings and specials for the cost of carrying out, under the supervision of the inspector appointed by the Employer, examination of shop welds on the following basis:

(a) Field Welds
Radiographic testing will be performed on butt welds and dye penetrant testing on fillet welds. All welds will be tested and adjudicated in accordance with API 1104. Radiographic testing of butt welds is to be carried out on 100% of the welds.

Repairs of welds will be permitted in accordance with approved repair procedures. Repairs shall be re-examined using the relevant non-destructive testing method. All costs associated with the repair of defective welds will be borne by the Contractor.

(b) Fabrication of Bends, Fittings and Specials
i) ONE HUNDRED percent radiographic examination of all weld deposited manually or semi-automatically in bends, fittings and specials which cannot be hydraulically tested because they have a plain end.

ii) TEN percent radiographic examination of all welds deposited manually or semi automatically in all flanged bends, fittings, and specials which are to be tested hydraulically.

The Engineer shall in all cases determine which welds are to be radiographed on the quantity basis specified above. All radiographs and records thereof made by the Contractor shall be made available to the Engineer to enable him to determine whether the welds are acceptable or not and no lining or wrapping of pipes shall be permitted until the welds have been accepted by the Engineer. To avoid any unnecessary delays, at· the option of the fabricator, radiographs may be approved by the manufacturer's inspectors subject to them being subsequently submitted to, and approved by the Engineer.

When a section of the weld is shown by radiography to be unacceptable and, if the limits of the deficient weld are not defined by the radiograph, additional radiography shall be carried out at the Contractor's expense until the limits of the deficiency are determined.

Repairs shall be made to defective welds at the Contractor's expense. All repair welds shall be identified with a stamp marking, indicating which welder conducted the repair. Repaired welds shall be radiographed at the Contractor's expense but, after any repair welder has had ten consecutive repairs approved, the extent of the radiography of the repairs conducted by the welder may be decreased by agreement between the Engineer and the Contractor.

Production Testing of Welds (Not applicable to pipes supplied by the Employer)

The Contractor shall also include in his prices for the supply of pipes the cost of carrying out at the factory, non-destructive tests of shop production welds (additional to the qualification tests for welding procedure) on the following basis:-

One pipe from each one hundred pipes produced shall be selected at random and specimens for two guided cold bend tests and one transverse tensile test shall be cut therefrom and tested in accordance with SABS 719:1971, Section 7.

In the case of the guided cold bend tests, where welding is carried from one side only, bend - specimens shall be tested with the rest of the bend in tension; where welded from both sides the specimens shall be tested with the inner and outer welds in tension alternately.

Tensile tests shall be carried out as for the qualification tests.

The pipes from which successfully tested specimens have been taken shall be trimmed to the maximum possible length and shall be accepted by the Employer for payment purposes as full standard pipe lengths.

In the event of the welds of any pipe failing to reach the standard of acceptance, such pipe shall be rejected. Two further plate coupons shall be prepared from different pipes, selected at random by the Engineer, for each specimen that has failed to reach the required standard. In the event of such additional tests proving to be satisfactory repairs to the pipe originally failing any test will be permitted by the Engineer and such repairs and subsequent re-test shall be at the Contractor's expense. In the event of the additional tests also failing to reach the required standard the Engineer shall have the right to reject the entire batch of pipes from which the coupon plates were cut.

PSL 5.2.3.1 Welding Procedure (New Sub-Clause)

Add new Sub-Clause:

Welding shall, unless otherwise prescribed in the approved welding procedure, commence at the top of the joint and proceed downwards. In addition to the root weld, at least two further passes shall be made, none of which is to exceed 3 mm in depth but this is subject to the approved welding procedure.

PSL 5.2.3.2 Aligning (New Sub-Clause)

Add new Sub-Clause:

The alignment of abutting ends shall be such that the offset does not exceed 1,5 mm. Line-up clamps (“dogs”) shall not be used for the “fit-ups”. The use of “bridges and wedges” or any other method that may reduce the pipe wall thickness when removed or in any way introduce unnecessary stresses into the pipe is forbidden.

PSL 5.2.3.3 Weather Conditions (New Sub-Clause)

Add new Sub-Clause:

Welding shall not be performed under conditions that could affect the quality of the welded joint (e.g. high moisture or windy conditions). Windshields may be used where practical.

PSL 5.2.3.4 Clearance (New Sub-Clause)

Add new Sub-Clause:

The minimum clearance around the pipe during welding shall be 500mm or such other minimum distance that may be required to facilitate compliance with the approved welding procedure. When welding in a trench, adequately sized “fox holes” shall be excavated/formed so as to provide adequate access for the welders.

PSL 5.2.3.5 Visual Inspection (New Sub-Clause)

Add new Sub-Clause:

100% of each joint will be examined and the following criteria shall be met:

All welds shall be substantially uniform in appearance with the inner and outer weld beads not exceeding 1 mm and 3 mm in height respectively unless otherwise required in terms of the approved welding procedure.

Undercut will not be permitted under any circumstances.

The weld, heat affected zone, and surrounding parent metal shall be free from cracks, porosity and trapped slag.

All weld splatter shall be removed prior to corrosion protection application.

PSL 5.2.3.6 Non-Destructive Testing After Construction (New Sub-Clause)

Add new Sub-Clause:

For applicable pipelines, the Employer’s CP Professional Services Provider will carry out coating integrity surveys along the full length of the pipeline after laying and backfilling of the pipe up to 300 mm above the crown of the pipe. The PCM testing (Pipe Current Mapping) method will be used except in the vicinity of Eskom’s HV overhead power lines where the DCVG (direct current voltage gradient) method of testing will be used.

Any defect(s) found in the pipeline coating, as a result of the PCM or DCVG testing shall be located and repaired by the Contractor at his expense.

In the case of PCM testing, all coating defects identified with an area greater than 0,5 square centimetre per 12 metre length of pipeline shall be located and repaired.

In the case of DCVG surveys, all coating defects identified with a value greater than 3% IR (or such other value as may be determined and agreed following analyses of the results of the first section which undergoes DCVG testing) shall be located and repaired. The agreement between the Contractor and the Engineer on this baseline, will be set as the criteria for the coating repair requirements by the Contractor on the whole pipeline.

Depending on the extent of the defects identified during PCM or DCVG testing, the Engineer may call for a further survey after the initial defects have been repaired by the Contractor, the cost of which testing shall then be borne by the Contractor.

A copy of a document that describes the methodology that will be followed when undertaking the DCVG survey will be available for inspection by Tenderers at the briefing meeting.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

PSL 5.2.3.7 Quality Control (New Sub-Clause)

Add new Sub-Clause:

Records of which welds were carried out by each individual welder as well as non-destructive testing results shall be submitted to the Engineer monthly. Should there be repetitive or serious defects, this information shall be forwarded to the Engineer immediately.

PSL 5.2.4 Cut Pipes (New Sub-Clause)

Add new Sub-clause:

Cut pipes shall be used where required as closure lengths. The cut ends shall be dressed square and to a smooth even finish and prepared for butt welding preparation which shall not be inferior to that of the ends of uncut pipes. The finished dimensions of ends cut on site shall be within the tolerances applicable to the ends of the particular types of pipe to be laid. The cost of cutting and trimming of pipes shall be included in the rates tendered for laying and jointing pipes.

PSL 5.5 ANCHOR/THRUST BLOCKS AND PEDESTALS

Add to the Sub-Clause:

If the steel pipelines that to be laid under this Contract are to be continuously welded or flanged, anchor/thrust blocks will not not required at tees, bends, terminal valves and end caps.

PSL 7.3 STANDARD HYDRAULIC PIPE TEST

Add new Sub-clause:

Water used for one filling of the pipeline for hydraulic testing will be provided by the Employer free of charge. Water will be made available from the nearest operational reservoir. Additional water used due to unsuccessful hydraulic tests will be charged at the Employer's bulk rate per kilolitre that is charged to the employer by DWA. Filling of the pipeline for hydraulic testing shall be carried out slowly to enable air to escape and under the direction of the Engineer.

An item has been provided in the Bill of Quantities to cover the cost of conveying water from the supply point to the test section of pipeline.

PSL 7.3.1 Test Pressure and Time of Test

Add to the Sub-clause:

Pipeline shall be subjected to field test pressures equivalent to the heads or pressures shown on the drawings.

The sections in which a pipeline may be tested will be at the discretion of the Contractor, except that a pipeline shall not be tested in sections exceeding a maximum allowable length of 2 000 m unless otherwise agreed by the Engineer. Notwithstanding the foregoing, all stream and river crossings that are to be encased in concrete shall be successfully pressure tested prior to the placing of the concrete encasing.

The Contractor shall make due allowance in the construction programme and in the tendered rates for the entire testing operation including for the provision of temporary end stops (flanges or bullnoses) and any other costs incurred as a result of testing the pipeline in intermediate sections.

The pipe shall not be tested until the associated structural concrete for anchorage has cured for 28 days or until such concrete has attained the specified design strength. Once filled, cement mortar lined pipe shall be left for 24 hours to permit maximum saturation of the linings.

The section to be tested shall be pressurised to the specified pressure and left for 24 hours, during which period, the pressure drop (if any) and the quantity of water required to be pumped in to restore the test pressure shall be measured and recorded. In addition, all flexible and flanged joints shall be visually inspected and there shall be no sign of leakage.

The permissible leakage for welded and flanged steel pipelines is zero (0) litres.

At all times when there is water in the pipeline, and particularly during filling, testing and draining of the pipeline, all air valves shall be in operation and their individual isolating valves shall be open.

PSL 7.3.1.2 Delete the Sub-Clauses 7.3.1.2

PSL 7.3.1.3 Delete the Sub-Clauses 7.3.1.3

PSL 7.3.3 Permissible Leakage Rates (Sub-Clause 7.3.3)

Delete the title of Sub-Clause and substitute the following:

Permissible Make-up Water

Add additional paragraph to the Sub-Clause as follows:

(c) Welded steel pipelines -- Nil

PSL 7.3.4 Initial Filling of Pipeline (New clause)

Add new Sub-Clause:

The entire process for filling the pipeline at any time during testing or disinfection shall be carried out under the supervision of the Engineer and will also be monitored by ORTDM personnel. Under no circumstances will the Contractor be allowed to carry out filling of the pipeline without the supervision of the Engineer, neither shall he/she permit any other persons to carry out such filling without the written permission of the Engineer.

Any damage to the pipeline caused by non-compliance with this clause shall be rectified at the Contractor's expense.

PSL 7.3.5 Connections After Testing (New Sub-Clause)

Add new Sub-clause:
The connections of the new pipework to the existing pipework shall only be carried out after the pipeline testing has been completed and accepted by the Engineer. For this reason, testing shall be carried out against a blank flange or bullnose end cap at these locations.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

PSL 7.3.6 Remedial Measures (New Sub-Clause)

Add new Sub-clause:

In the event that a pipe section fails a test, the Contractor shall carry out all remedial measures necessary to obtain a successful test of each individual section and the entire pipeline, at his/her own expense. Such remedial measures shall in no way compromise the original pipeline specifications.

PSL 7.3.7 Draining of the Pipeline (New Sub-Clause)

Add new Sub-clause:

The pipeline may have to be drained to carry out remedial measures. The pipeline shall be drained via the scour valves in a manner that does not cause erosion of the streambeds or negatively impact on the environment in any way. All such drainage of the pipeline shall be carried out under the supervision of the Engineer.

PSL 7.6 Commissioning (New Sub-Clause)

Add new Sub-clause:

The pipeline will be considered to have been commissioned and practically complete once all the associated structures are sufficiently complete to carry out their structural and hydraulic function and the hydraulic test of the entire pipeline has been successfully completed.

PSL 7.7 Water Tightness Test for Chambers (New Sub-Clause)

Add new Sub-clause:

On completion of each concrete valve chamber, and prior to completion of the backfilling around the chamber, a water tightness test shall be undertaken by the Contractor. This shall be carried out by excavating a trench approximately 0,5 m deep around the periphery of the chamber and continuously (for at least 4 hours) maintaining it full of water. Should there be any noticeable leaks into the chamber, the Contractor shall carry out at his/her own expense whatever measures are necessary to waterproof the chamber to the Engineer's satisfaction.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.2.1 Inspection, Acceptance, Loading and Transporting from Employer's pipeyard, Lay and Bed Pipes Fittings, Specials and Couplings

Add to sub-clause:

Where pipes are supplied 'free-issue' by the Employer, the rate for 'supply, lay, bed …etc' shall exclude the cost of supplying the pipes. A separate per meter length of pipe item will be scheduled for inspecting the pipes in the Employer's pipeyard together with Engineer, identifying and documenting any defects, acceptance of responsibility for pipes from Employer, loading, transporting to site and off-loading alongside the trench.

The tendered rate for inspection, accepting, loading, transporting and offloading on site shall cover the cost of inspecting in Employer's pipeyard, documenting any defects, formal acceptance (signing of acceptance certificate) of the pipes supplied to the Contractor by the Employer, taking full responsibility for the pipes thereafter, loading, transporting to site and off-loading and making good any damage, to the satisfaction of the Engineer, incurred in the process.

Where separate rates in respect of water for testing, disinfection and the hydraulic test itself are provided, the rate for "lay and bed pipes" excludes the cost associated with conveyance of water to fill the pipeline, the field pressure testing and disinfection of the pipeline. Separate items have been included in the Bill of Quantities for the cost associated with the conveyance of water required for testing, pressure testing, and disinfection of the pipeline.

A maximum payment of 85 % of the tendered rate may be made for the completed section of pipeline which has not yet been hydraulically pressure tested. A further payment of 15% of the tendered rate will be made upon successful completion of the pressure testing for the relevant section of pipeline.

PSL 8.2.15 Special Wrapping in Corrosive Soil

Delete the heading and substitute: Corrosion Protection

Delete the Sub-Clause and substitute the following:

The costs of making good the internal linings and external coatings on all butt welded and fillet welded joints on the pipeline are to be included in the tendered rates.

Add new items:

External corrosion protection to flanges, adaptor joints, valves…….. Unit : No

Separate items will be scheduled for each item by pipe nominal diameter.

In the case of valves, the rate shall include for protection of the whole of the valve body, all flanges integral to the valve, the connecting flanges to the valve (i.e. including the two flanges of the pipework connected to either side of the valve) and the packing of mastic (without tape or sheathing) over the gland adjusting bolts and nuts.

PSL 8.2.16 Cut Pipes (New Sub-Clause)

Add new item:

Extra over for forming scarf joint……..Unit : No

Add new item:

Extra over for forming mitre cut joint……Unit : No

Add new item:

Extra over for cutting pipe as closure……..Unit : No

The rates shall cover the cost of the cutting of the pipes and forming the joint and welding and making good of the internal lining and external coating, testing, and forming joint holes in trench in all materials to facilitate in-situ welding.

PSL 8.2.17 Cutting into and Connecting to Existing Pipeline (New Sub-Clause)

"Cutting into and connecting to existing pipeline Unit : Sum

The rate for cutting into and connecting to existing pipelines shall cover the cost of exposing the existing pipeline, making arrangements with the Employer's staff to temporarily shut off the existing pipeline whilst effecting the connection, cleaning and preparing the pipe for cutting, cutting, dealing with all water (including that from possible leaking valves), preparing the pipe ends for jointing, welding / jointing and connecting the new pipework, making good internal linings and external coatings, re-commissioning the pipeline, and including all temporary supports, bedding and backfilling.

Bidder:
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2. …….

Witness: ……..

DR. JSMLM:
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SECTION PSLB: BEDDING (PIPES) (Applicable to SABS 1200 LB - 1983)

PSLB 2.3 DEFINITIONS

Main fill:
Delete "150 mm" in second line and substitute "300 mm".

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

All bedding used for the cradle beneath and surrounding the pipes shall comply with the following requirements:

GRADING ANALYSIS RANGE	
SIEVE SIZE (mm)	PERCENTAGE PASSING
6,7	98 to 100
4,76	85 to 100
2,36	55 to 95
1,18	30 to 75
0,60	20 to 50
0,425	16 to 38
0,30	13 to 27
0,15	5 to 18
0,075	0 to 12

The material shall be free of organic matter and shall have a compactibility factor of not more than 0.4. The material shall be classified as silty to fine sand having a stiffness ratio of not less than 5,0 MPa. Furthermore, the materials shall, preferably, be obtained from river transported deposits since it is preferable that the larger grains (3,0 to 4,8 mm in size) be rounded and not sharp and angular.

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

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

PSLB 3.2 SELECTED FILL MATERIAL

Not required. All material up to the underside of backfill shall be measured as selected granular from commercial sources.

PSLB 3.4 SELECTION

PSLB 3.4.1 Suitable Material Available from Trench Excavation

Delete the Sub-Clause and substitute the following:

The excavation of a pipe trench shall comply with the requirements of Sub-Clause 5.4 of SABS 1200 DB and the provisions of Sub-Clause 3.7 of SABS 1200 DB (in terms of which, for the purposes of providing bedding materials, the Contractor is not required to use selective methods of excavating) shall apply. Nevertheless the Contractor shall take every reasonable precaution to avoid burying or contaminating material that is suitable and is required for bedding or covering the pipeline. If, in the opinion of the Engineer, bedding material can be produced from the excavated material, the Contractor shall, if so ordered by the Engineer, screen or otherwise treat (as scheduled) the excavated material in order to produce material suitable for bedding (see also Sub-Clause PSLB 8.1.2).

PSLB 5 CONSTRUCTION

PLSB 5.1 GENERAL

PSLB 5.1.2 DETAILS OF BEDDING

Delete and replace with:
Pipes shall be bedded and protected in accordance with the details shown on the drawings.

PSLB 5.1.2.1 Stone Drainage Layer beneath Bedding (New Sub-Clause)

Add new Sub-Clause:

Where indicated on the drawings, or as otherwise indicated by the Engineer, a 200 mm thick layer of 19 mm stone shall be placed beneath the bedding layer to act as a drainage channel for excessive groundwater. This layer shall be wrapped in bidim and provided with outlet pipes if and where indicated.

PSLB 5.1.4 Compacting

Delete the second line and substitute:
top of the pipeline) shall be 93% mod AASHTO.

Add to Sub-Clause 5.1.4:
Steps will have to be taken by the Contractor to ensure that flexible pipes do not deform excessively in cross-section during and after construction and backfilling operations. The maximum deflection which will be acceptable at any stage during or after construction is 2% of the pipe diameter horizontally or vertically. The Contractor will be required to provide the necessary apparatus and to monitor deflection during construction.

Pipe deformations will only be maintained within the specified tolerances by correct backfilling practice. No heavy compaction equipment will be permitted for compaction of any pipe bedding, only pneumatic or hand rammers being acceptable. To this end, and to achieve the 93% compaction specified it is required that the bedding material be brought up evenly on either side of the pipe. The use of complete saturation of the material as a method of achieving the specified compaction may, subject to the Engineer's approval, be used. However, in this regard, Tenderers are advised that the presence of excessive quantities of water in the pipe trench could lead to flotation of the pipe.

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2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

Prior to the commencement of pipe laying the Contractor will be required to submit, to the Engineer, for his approval, his proposed methods of placing, and compacting methods which he proposes to implement in order to ensure compliance with the specification.

PSLB 5.1.5 Testing (New Sub-Clause)

Flexible and flanged joints shall be left exposed with a minimum of 300 mm clearance around the bottom of the pipe during hydraulic pressure testing of the pipe to facilitate inspection.

PSLB 5.2.5 Stone Bedding (New Sub-Clause)

In areas where waterlogged conditions exist or where ordered by the Engineer, special drains consisting of a 200 mm thickness of single sized stone with a geofabric filter surround ("Bidim" Grade A4 or similar approved) extending the full width of the trench shall be provided below the bedding to the pipes. The excavation for these drains will be measured in cubic metres at the contract rate applying to unsuitable excavation below the bottom of the trench. The stone filling will be paid for per cubic metre and the geofabric filter will be paid for per square metre. All measurements in this connection will be to a width equal to the base widths and depths ordered.

PSLB 5.3 Placing and Compacting Flexible Pipes

PSLB 5.3 (a) Bedding Cradle

Delete the sub-clause and substitute the following:

The pipes shall be bedded on a minimum 100mm thick layer of compacted granular bedding material on which a 50 mm thick layer of uncompacted granular bedding material has been placed and spread. Loose granular bedding material lying next to the pipe shall be placed into the haunch area and compacted with suitable hand tools (covered with rubber to prevent damage to the pipe coating), and additional selected granular material shall be added and compacted in 150 mm thick layers up to the mid point of the pipe diameter in the vertical plane. The remainder of the bedding i.e. the selected fill blanket, shall be placed in layers up the sides of the pipe, each layer being compacted until a level of 300 mm above the crown of the pipe is reached.

PSLB 5.3(b) Selected Fill Blanket

Delete "200 mm" from title.

PSLB 6 TOLERANCES

PSLB 6.1 Moisture Content and Density

Add to the Sub-Clause:

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

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.1.3 Volume of Bedding Materials

Add to the Sub-Clause:

(c) The volume of bedding material shall be measured net i.e. the volume of the pipe is to be deducted.
(d) No additional payment will be made for bedding material placed in bell (fox) holes

PSLB 8.1.6 Freehaul

Delete the Sub-Clause and substitute the following:

All haul will be regarded as free haul. No overhaul will be paid for under this Contract.

PSLB 8.2.1 Provision of Bedding from Trench Excavation

Delete the Sub-Clause and substitute the following:

Without the need for screening:
a) Selected granular material Unit : m3
The rates shall cover the cost of acquiring, from any point along the trench excavation as may be selected by the Engineer, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, of making good any backfill deficiency from points where backfill has been acquired, and of disposing of displaced material.

Including for screening:
b) Selected granular material Unit : m3
The rates shall cover the cost of screening or otherwise treating excavated material, at any point along the trench excavation as may be selected by the Engineer, in order to produce bedding that complies with the relevant specification, delivering it to points alongside the trench, spaced to suit the Contractor's methods of working, of making good any backfill deficiency there may be from points where screened backfill material has been acquired, and of disposing of displaced material.

PSLB 8.2.2 Provision of Bedding by Importation

Delete the sub-clause and substitute the following:

Including for screening and/or other treatment:
a) Selected granular material Unit : m3
b) Bedding sand to specified bedding dimensions Unit : m3

The rates shall cover the cost of acquiring, loading, transporting, offloading, screening or otherwise treating excavated material in order to produce bedding that complies with the relevant specification, delivering it to points alongside the trench spaced to suit the Contractor's methods of working and of disposing of displaced material.

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2. ……..

Witness: ……..

DR. JSMLM:
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NOTE: The rate for the supply and laying of pipelines covers the cost of handling the bedding material from alongside the trench, placing it under the pipeline, forming joint holes and completing the bedding around and over the pipeline.

PSLB 8.2.4 Encasing of Pipes in Concrete

Delete the fifth and sixth lines and substitute the following:

encasing the pipe in concrete 150mm thick each side of the pipe and to 150mm above the crown of the pipe including the cost of formwork, (if any), etc. and the cost of formwork to form stop ends on either side of collars, couplings, joints etc if instructed by the Engineer.

The rate for concrete encasing shall include for the supply, installation and stripping of all formwork.

PSLB 8.2.5 Overhaul of Material for Bedding Cradle and Selected Fill Blanket

Delete the sub-clause.

PSLB 8.2.6 Drainage Layer (New Sub-Clause)

Add the new sub-clause:

Supply and place beneath pipe, 200mm crushed stone layer as ground water drainage layer. The excavation for these drains will be measured in cubic metres at the tendered rate applying to unsuitable excavation below the bottom of the trench (SABS 1200 DB 8.3.2 c).

The rate for stone filling shall be per cubic metre of stone fill, measured according to a width equal to the base widths and depths ordered. Unit : m3

Supply and installation of Geofabric filter material (BIDIM Grade A4 or similar) around stone. The rate shall be per square metre of Geofabric to enclose the stone material, measured net according to a width equal to the base widths and depths ordered. Unit : m2

PSLK VALVE INSTALLATIONS. (SANS 1200 LK)

PSLK3 MATERIALS

PSLK3-1 Resilient seal gate valves (RSV)

All normally-open gate valves supplied under this Contract for isolating valves or other purposes shall be constructed in accordance with SANS 664 for CI waterworks gate valves and as detailed in Subclause 3.1, except that the gate valves shall be double flanged, of the non-rising spindle type (except where scheduled otherwise) fitted with handwheels or cap as scheduled and shall be clockwise closing.

The valve gate shall be completely rubber sheathed (not with rubber stirrups only) to provide a resilient seal. The sheath shall be pinhole free. The valve spindle shall be either EN56B grade or other approved stainless steel and shall operate in a spindle nut of appropriate non-corrodible material. The design of the stuffing box shall be such that the "O" rings can be replaced while the valve is in service without having to remove the valve dome.

Should there be any danger of the main valve shaft shearing due to the high gearing of the valves, fail safe shear pins shall be fitted to the gearbox.

PSLK3-3 Wedge-gate valves

All normally-closed gate valves (e.g. scour valves) shall be wedge-gate valves with bronze channel guides and shoes.

PSLK3-5 Flanges

The provisions of PSL 3.8.3 shall apply.

PSLK3-7 Corrosion protection of all valves

The valve surfaces shall be coated with a fusion-bonded epoxy powder (FBE) in accordance with Subclause 3.14.2(f) to a total dry film thickness of 250 micrometres (minimum) and 500 micrometres (maximum).

The coating shall be such that all trimmings are covered by FBE for a distance of at least 5 mm to discourage bi-metal corrosion.

The sealing area of the flanges shall be treated to a dry film thickness of 150 micrometres (+ 25 micrometres) (i.e. masked off before the second coat is applied).

The above specified coating shall be applied once the valve has passed its hydraulic test.

All damage to the coating (if any) caused by the transporting and handling of the valves shall be repaired by the Contractor in accordance with the above specification, prior to the installation of the valves. Any damage to the coating caused by the installation of the valves shall be repaired in accordance with the paint manufacturer's specifications. The grinding down of the damaged area to Sa 2.5 and the feathering of the edges are an acceptable alternative to re-blast cleaning.

SECTION PSMJ: SEGMENTED PAVING (SANS 1200MJ)

PSMJ 3 MATERIALS

PSMJ 3.1.2 Class, strength and type

Add the following to Sub-clause 3.1.2:

Blocks shall be 80 mm thick pavers, S-A type, Class 35 to the colour and type specified by the Landscape Architect. Blocks are to be 80mm thick for roads and walkways and other non-vehicular areas.

PSMJ 3.3 Sand for bedding and jointing

Add the following to Sub-clause 3.3:

The sand used for the bedding layer shall not contain proportions of silt and clay materials smaller than 0.075 mm that exceed 15%.

PSMJ 5 CONSTRUCTION

PSMJ 5.3 Placing and compacting of sand bed.

Replace the first sentence of Sub-clause 5.3 with:

The bedding sand shall have a compacted thickness of 20mm.

Add the following to Sub-clause 5.3:

The Contractor must make allowance for the penetration of the bedding sand layer into the compacted subbase layer. Only the 20 mm homogenous bedding sand layer will be measured for payment purposes.

PSMJ 5.4 Laying of units

Replace the first paragraph of Sub-clause 5.4 with:

Blocks shall be laid in the herringbone pattern.

PSMJ 5.6.2 Paving subject to wheel loads exceeding 30 kN.

Add the following to Sub-clause 5.6.2:

The paving proposed will be subjected to wheel loads exceeding 30kN.

C3.4.3 PARTICULAR SPECIFICATIONS: ADDITIONAL SPECIFICATIONS

The following Particular Specifications are applicable to this Contract and are contained in this document.

C3.4.3.1 REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS

C3.4.3.2 ENVIRONMENTAL MANAGEMENT PLAN

C3.4.3.3 PROVISION OF STRUCTURED TRAINING

C3.4.3.4 REQUIREMENTS OF EXTEND PUBLIC WORKS PROGRAMME

C3.4.3.5 HIV /AIDS REQUIREMENTS

C3.4.3.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993: HEALTH AND SAFETY SPECIFICATION

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C3.4.3.1.2 SCOPE

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C3.4.3.1.4 OPERATIONAL CONTROL

ANNEXURE 1: MEASURING INJURY EXPERIENCE

ANNEXURE 2: EXECUTIVE SHE RISK MANAGEMENT REPORT

ANNEXURE 3: LIST OF RISK ASSESSMENTS

C3.4.3.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993 : HEALTH AND SAFETY SPECIFICATION

C3.4.3.1.1 Introduction

In terms of the Construction Regulation 4(1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, Dr JS Moroka Local Municipality, as the Client, is required to compile a Health & Safety Specification for any intended project and provide such specification to any prospective tenderer.

The Client's further duties are as in C3.5.1.3.1.1. below and in the Construction Regulations, 2003.

This specification has as objective to ensure that Principal Contractors entering into a Contract with the Dr JS Moroka Local Municipality achieve an acceptable level of OH&S performance. This document forms an integral part of the Contract and Principal and other Contractors should make it part of any Contracts that they may have with Contractors and/or Suppliers.

Compliance with this document does not absolve the Principal Contractor from complying with minimum legal requirements and the Principal Contractor remains responsible for the health & safety of his employees and those of his Mandataries.

C3.4.3.1.2 Scope

Development of a health & safety specification that addresses all aspects of occupational health and safety as affected by the abovementioned contract work.
The specification will provide the requirements that Principal Contractors and other Contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable.

C3.4.3.1.3 General Occupational Health & Safety Provisions

(a) Hazard Identification & Risk Assessment (Construction Regulation 7)

(i) Risk Assessments

Annexure 3 contains a list of Risk Assessment headings that have been identified by **Dr JS Moroka Local Municipality** as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is offered as assistance to Contractors intending to tender.

(ii) Development of Risk Assessments

Every Principal Contractor performing Construction work shall, before the commencement of any Construction work or work associated with the aforesaid Construction work and during such work, cause a Risk Assessment to be performed by a competent person, appointed in writing, and the Risk Assessment shall form part of the OH&S Plan and be implemented and maintained as contemplated in Construction regulation 5(1).

The Risk Assessment shall include, at least:

- the identification of the risks and hazards to which persons may be exposed to
- the analysis and evaluation of the risks and hazards identified
- a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified
- a monitoring plan and
- a review plan

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2. ……..

Witness: ……..

Based on the Risk Assessments, 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.

The Risk Assessments, together with the site-specific OH&S rules must be submitted to the **Dr JS Moroka Local Municipality** before mobilisation on site commences.
Despite the Risk Assessments listed in Annexure 7, the Principal Contractor is required to conduct a baseline Risk Assessment and the aforesaid listed Risk Assessments must be incorporated into the base-line Risk Assessment. The baseline Risk Assessment must further include the Standard Working procedures (SWP) and the applicable Method Statements based on the Risk Assessments

All out-of-scope work must be associated with a Risk Assessment.

(iii) Review of Risk Assessments

The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the Contract work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client, other Contractors and all other concerned-parties with copies of any changes, alterations or amendments as contemplated in above.

(b) Legal Requirements

All Contractors entering into a Contract with the **Dr JS Moroka Local Municipality** shall, as a minimum, comply with the

- Occupational Health & Safety Act and Regulations (Act 85 of 1993). A current, up-to-date copy of the OHS Act must be available on site at all times
- Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993). The principal Contractor will be required to submit a letter of Registration and "good-standing" from the Compensation Insurer before being awarded the Contract. A current, up-to-date copy of the COID Act must be available on site at all times.
- Where work is being carried out on mines' premises the Contractor will have to comply with the Mine Health & Safety Act and Regulations (Act. 29 of 19960 and any other OH&S requirements that the mine may specify. A current, up-to-date copy of the OHS Act must be available on site at all times.

(c) Structure and Responsibilities

(i) Overall Supervision and Responsibility for OH&S

* It is a requirement that the Principal Contractor, when he appoints Contractors (Sub-contractors) in terms of Construction Regulations 5(3), (5), (9), (10) and (12) he includes an OHS Act Section 37(2) agreement: "Agreement with Mandatary" in his agreement with such Contractors.
* Any OH&S Act (85/1993), Section 16(2) appointee/s as detailed in his/her/their respective appointment forms

(ii) Further (Specific) Supervision Responsibilities for OH&S

The Contractor shall appoint designated competent employees and/or other competent persons as required by the Act and Regulations. Below is a list of identified appointments and may be used to select the appropriate appointments for the current contract:

	Ref. Section/Regulation in OHS Act
Batch Plant Supervisor	(Construction Regulation 6(1)
Construction Vehicles/Mobile Plant/Machinery Supervisor	(Construction Regulation 21)
Demolition Supervisor	(Construction Regulation 12)
Drivers/Operators of Construction Vehicles/Plant	(Construction Regulation 21)
Electrical Installation and Appliances Inspector	(Construction Regulation 22)
Emergency/Security/Fire Coordinator	(Construction Regulation 27)
Excavation Supervisor	(Construction Regulation 11)
Explosive Powered Tool Supervisor	(Construction Regulation 19)
Fall Protection Supervisor	(Construction Regulation 8)
First Aider	(General Safety Regulation 3)
Fire Equipment Inspector	(Construction Regulation 27)
Formwork & Support work Supervisor	(Construction Regulation 10)
Hazardous Chemical Substances Supervisor	(HCS Regulations)
Incident Investigator	(General Admin Regulation 29)
Ladder Inspector	(General Safety Regulation 13A)
Lifting Equipment Inspector	(Construction Regulation 20)
Materials Hoist Inspector	(Construction Regulation 17)
OH&S Committee	(OHS Act Section 19)
OH&S Officer	(Construction Regulation 6(6)
OH&S Representatives	(OHS Act Section 17)
Person Responsible for Machinery	(General Machinery Regulation 2)
Scaffolding Supervisor	(Construction Regulation 14)
Stacking & Storage Supervisor	(Construction Regulation 26)
Structures Supervisor	(Construction Regulation 9)
Suspended Platform Supervisor	(Construction Regulation 15)
Tunneling Supervisor	(Construction Regulation 13)
Vessels under Pressure Supervisor	(Vessels under Pressure Regulations)
Working on/next to Water Supervisor	(Construction Regulation 24)
Welding Supervisor	(General Safety Regulation 9)

The appointments must be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information must be communicated and agreed with the appointees.

Copies of appointments must be submitted to the **Dr JS Moroka Local Municipality** together with concise CV's of the appointees. All appointments must be officially approved by **Dr JS Moroka Local Municipality** . Any changes in appointees or appointments must be communicated to **Dr JS Moroka Local Municipality** forthwith.

The Principal Contractor must, furthermore, provide **Dr JS Moroka Local Municipality** with an organogram of all Contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

Where necessary, or when instructed by the **Dr JS Moroka Local Municipality** or an Inspector of the Department of Labour, the Principal Contractor must appoint a competent OH&S Officer subject to the approval of the **Dr JS Moroka Local Municipality**

In addition **Dr JS Moroka Local Municipality** may require that a Traffic Safety Officer be appointed for any project.

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(iii) Designation of OH&S Representatives (Section 18 of the OHS Act)

Where the Principal Contractor employs more than 20 persons (including the employees of other Contractors (sub-contractors) he has to appoint one OH&S Representatives for every 50 employees or part thereof. General Administrative Regulation 6 requires that the appointment OR election and subsequent designation of the OH&S Representatives are executed in consultation with Employee Representatives or Employees. (Section 17 of the Act and General Administrative Regulation 6. & 7)

OH&S Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

(iv) Duties and Functions of the OH&S Representatives (Section 19 of the OHS Act)

The Principal Contractor must ensure that the designated OH&S Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor.

OH&S representatives must be included in accident/incident investigations

OH&S representatives must attend all OH&S committee meetings.

(v) Appointment of OH&S Committee (Section 20 of the OHS Act)

The Principal Contractor must establish an OH&S Committee consisting of all the designated OH&S Representatives together with a number of management representatives that are not allowed to exceed the number of OH&S representatives on the committee and a representative of the Client who shall act as the chairman without a vote. The members of the OH&S committee must be appointed in writing.

The OH&S Committee must meet minimum monthly and consider, at least, the following Agenda:

1. Opening & Welcome
2. Present/Apologies/Absent
3. Minutes of previous Meeting
4. Matters Arising from the previous Minutes
5. OH&S Reps Reports
6. Incident Reports & Investigations
7. Incident/Injury Statistics
8. Other Matters
9. Endorsement of Registers and other statutory documents by a representative of the Principal Contractor
10. Close/Next Meeting

(d) Administrative Controls and the Occupational Health & Safety File

The OH&S File (Construction Regulation 5 (7)

As required by Construction Regulation 5(7), the Principal Contractor and other Contractors will each keep an OH&S File on site containing the following documents as a minimum:

* *Notification of Construction Work (Construction Regulation 3.)*
* *Copy of OH&S Act (updated) (General Administrative Regulation 4.)*
* *Proof of Registration and good standing with a COID Insurer (Construction Regulation 4 (g)*
* *OH&S Programme agreed with the Client including the underpinning Risk Assessment/s & Method Statements (Construction regulation 5 (1)*
* *Copies of OH&S Committee and other relevant Minutes*
* *Designs/drawings (Construction Regulation 5 (8)*

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* *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 9)*
* *Appointment/Designation forms as per (a)(i) & (ii) above.*
* *Registers as follows:*
* *Accident/Incident Register (Annexure 1 of the General Administrative Regulations)*
* *OH&S Representatives Inspection Register*
* *Asbestos Demolition & Stripping Register*
* *Batch Plant Inspections*
* *Construction Vehicles & Mobile Plant Inspections by Controller*
* *Daily Inspection of Vehicles. Plant and other Equipment by the Operator/ Driver/User*
* *Demolition Inspection Register*
* *Designer's Inspection of Structures Record*
* *Electrical Installations, -Equipment & -Appliances (including Portable Electrical Tools)*
* *Excavations Inspection*
* *Explosive Powered Tool Inspection, Maintenance, Issue & Returns Register (incl. cartridges & nails)*
* *Fall Protection Inspection Register*
* *First Aid Box Contents*
* *Fire Equipment Inspection & Maintenance*
* *Formwork & Support work Inspections*
* *Hazardous Chemical Substances Record*
* *Ladder Inspections*
* *Lifting Equipment Register*
* *Materials Hoist Inspection Register*
* *Machinery Safety Inspection Register (incl. machine guards, lock-outs etc.)*
* *Scaffolding Inspections*
* *Stacking & Storage Inspection*
* *Inspection of Structures*
* *Inspection of Suspended Platforms*
* *Inspection of Tunnelling Operations*
* *Inspection of Vessels under Pressure*
* *Welding Equipment Inspections*
* *Inspection of Work conducted on or Near Water*
* *All other applicable records*

Greater Giyani Municipality will conduct an audit on the OH&S file of the Principal Contractor from time-to-time.

(e) OH&S Goals & Objectives & Arrangements for Monitoring & Review of OH&S Performance
The Principal Contractor is required to maintain a CIFR of at least 8 (See Annexure 1. to this document: "Measuring Injury Experience) and report on this to **Dr JS Moroka Local Municipality** on a monthly basis

(f) Notification of Construction Work (Construction Regulation 3.)

The Principal Contractor must, where the Contract meets the requirements laid down in Construction Regulation 3, within 5 working days, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure A in the Construction Regulations) for the purpose. A copy must be held on the OH&S File and a copy must be forwarded to **Dr JS Moroka Local Municipality** for record keeping purposes.

(g) Training, Awareness and Competence

The contents and syllabi of all training required by the Act and Regulations are to be included in the Principal Contractor's OH&S Plan.

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(ii) General Induction Training

All members of Contractor's Site management as well as all the persons appointed as responsible for OH&S in terms of the Construction and other Regulations will be required to attend a general induction session by the Client

All employees of the Principal and other Contractors to be in possession of proof of General Induction training.

(ii) Site Specific Induction Training

The Principal Contractor will be required to develop Contract work project specific induction training based on the Risk Assessments for the Contract work and train all employees and other Contractors and their employees in this.

All employees of the Principal and other Contractors to be in possession of proof of Site Specific OH&S Induction training at all times.

(iii) Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training as follows:

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
* OH&S Representatives (Section 18 (3) of the Act)
* Training of the Appointees indicated above
* Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 21)
* Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction regulation 27)
* Basic First Aid (General Safety Regulations 3)
* Storekeeping Methods & Safe Stacking (Construction Regulation 26)
* Emergency, Security and Fire Co-coordinator

(iv) Awareness & Promotion

The Principal Contractor is required to have a promotion and awareness scheme in place to create an OH&S culture in employees. The following are some of the methods that may be used:

- Toolbox Talks
- OH&S Posters
- Videos

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- Competitions
- Suggestion schemes
- Participative activities such as OH&S Safety circles.

(v) Competence

The Principal Contractor shall ensure that his and other Contractors personnel appointed are competent and that all training required to do the work safely and without risk to health, has been completed before work commences.

The Principal Contractor shall ensure that follow-up and refresher training is conducted as the contract work progresses and the work situation changes.

Records of all training must be kept on the OH&S File for auditing purposes.

(h) Consultation, Communication and Liaison

OH&S Liaison between the Client, the principal Contractor, the other Contractors, the Designer and other concerned parties will be through the OH&S committee as contemplated in above.

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.

Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.

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 the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/ situations etc.

The Principal Contractor will be required to do Site Safety Walks with **Dr JS Moroka Local Municipality** at least on a basis to be determined between the two parties.
The Principal and other Contractors will be required to conduct Toolbox Talks with their employees on a weekly basis and records of these must be kept on the OH&S File. Employees must acknowledge the receipt of Toolbox Talks which record must, likewise be kept on the OH&S File.
The Principal Contractors most senior manager on site will be required to attend all **Dr JS Moroka Local Municipality** OH&S meetings and a list of dates, times and venues will be provided to the Principal Contractor by **Dr JS Moroka Local Municipality**

(i) Checking, Reporting and Corrective Actions

(i) Monthly Audit by Client (Construction Regulation 1(d)

Dr JS Moroka Local Municipality will be conducting a Monthly Audit to comply with Construction Regulation 4(1)(*d*) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

(ii) Other Audits and Inspections by **Dr JS Moroka Local Municipality**:
Dr JS Moroka Local Municipality reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include Site Safety Walks.

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(iii) Conducting an Audit

A representative of the Principal Contractor must accompany **Dr JS Moroka Local Municipality** 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.

(iv) Contractor's Audits and Inspections

The Principal Contractor is to conduct his own monthly internal audits to verify compliance with his own OH&S Management system as well as of with this specification.

(v) Inspections by OH&S Representative's and other Appointees

OH&S Representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

(vi) Recording and Review of Inspection Results

All the results of the abovementioned inspections to be in writing, reviewed at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.

(vii) Reporting of Inspection Results

The Principal Contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 2: "SHE Risk Management Report"

(j) Incident Reporting and Investigation

Reporting of Accidents and Incidents (Section 24 and General Administrative Regulation 8 of the OHS Act)
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 **Dr JS Moroka Local Municipality** within two days and to the Provincial Director of the Department of Labour within seven days (Section 24 of the Act & General Administrative Regulation 8.) EXCEPT that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or

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may die or suffer a permanent physical defect, the incident must be reported to both **Dr JS Moroka Local Municipality** and the Provincial Director of the Department of Labour forthwith by telephone, telefax or E-mail.

The Principal Contractor is required to provide **Dr JS Moroka Local Municipality** with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

The Principal Contractor is required to provide **Dr JS Moroka Local Municipality** with copies of all internal and external accident/incident investigation reports including the reports contemplated below within 7 days of the incident occurring.

Accident and Incident Investigation (General Administrative Regulation 9)

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

The results of the investigation to be entered into the Accident/Incident Register listed in above.

The Principal Contractor is responsible for the investigation of all minor and 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.

The Principal Contractor is responsible for the investigation of all road traffic accidents and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The **Dr JS Moroka Local Municipality** reserves the right to hold its own investigation into an incident or call for an independent external investigation.

C3.4.3.1.4 Operational Control

(a) Emergency Preparedness, Contingency Planning and Response

The Principal Contractor must appoint a competent person to act as Emergency Controller/ Coordinator. The Principal Contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that **Dr JS Moroka Local Municipality** may have in place.

The Principal Contractor and the other Contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

(b) First Aid (General Safety Regulation 3)

The Principal Contractor must provide First Aid equipment (including a stretcher) and have qualified First Aider/s as required by General Safety Regulation 3 of the OHS Act.

The Contingency Plan of the Principal Contractor must include the arrangements for speedily and timeously transporting injured/ill person/s to a medical facility or of getting emergency medical aid to person/s that may require it.

The Principal Contractor must have firm arrangements with his other Contractors in place regarding the responsibility of the other Contractors injured/ill employees.

(c) Security

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.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period

(d) Fall Protection (Working in Elevated Positions (Construction regulation 8.)

A pre-emptive Risk Assessment will be required for any work to be carried out above two metres from the ground or any floor level and will be classified as "Work in Elevated Positions".

As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he/she is working at ground level and whilst working in this position be wearing a single belt with lanyard that will be worn to prevent the person falling from the platform, ladder or other device utilised. This safety belt will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length that the person will not be able to move over the edge.

Alternatively any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with guard rails at two different heights as prescribed in SABS 085: Code of Practice for the Design, Erection, Use and Inspection of Access Scaffolding.

Where the requirement in is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device OR the person must be attached to an approved, by AL, fall arrest system.

Where the requirements are not practicable, a suitable catch net must be erected.

Workers working in elevated positions must be trained to do this safely and without risk to health Where work on roofs is carried out, the Risk Assessment must take into account the possibility of persons falling through fragile material. Skylights and openings in the roof.

(e) Structures (Construction Regulation 9)

The Principal Contractor must ensure that:

- Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it
- No structure is overloaded to the extent where it becomes unsafe
- He/she has received from the designer the following information:
  - Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work
  - A geo-scientific report (where applicable)
  - The loading the structure is designed to bear
  - The methods and sequence of the construction process
  - all drawings pertaining to the design are on site and available for inspection

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(f) Formwork & Support Work (Construction Regulation 10.)

- Formwork & Support work (F&SW) must be carried out under the supervision of competent person designated in writing
- F&SW structures must be so designed, erected, supported, braced and maintained that it will be able to support any vertical or lateral loads that may be applied
- No load to be imposed onto the structure that the structure is not designed to carry
- F&SW must be erected in accordance with the structural design drawings for that F&WS and, if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the F&WS
- All drawings pertaining to the F&SW must be kept available on site
- All equipment used in the erection of F&WS must be checked by a competent person before use
- The foundation or base upon which F&SW is erected must be able to bear the weight and keep the structure stable
- Employees erecting F&SW must be trained in the safe work procedures for the erection, moving and dismantling of F&SW
- Safe access (and emergency escape) must be provided for workers
- A competent person must inspect F&SW structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the F&SW is stripped. The results of all inspections must be recorded in a register kept on site
- The F&SW must be left in place until the concrete has reached sufficient strength to bear its own weight plus any additional weight that may be imposed upon it and not until the designated competent person has authorised its stripping in writing
- Any damaged F&SW must be repaired/rectified immediately
- Deck panels must be secured against displacement
- The slipping of persons on release agents on deck panels prevented
- Persons health must be protected against the use of solvents, oils or other similar substances

(g) Excavations (Construction Regulation 11.)

Where excavations will exceed 1,5 m in depth the Contractor will be required to submit a Method Statement to Dr JS Moroka Local Municipality for approval before commencing with the excavation and Dr JS Moroka Local Municipality will issue a permit to proceed once the Risk Assessment and Method Statement are approved.

- Excavation work must be carried out under the supervision of a competent person who has been appointed in writing
- Before excavation work begins the stability of the ground must be evaluated
- Whilst excavation work is being performed, the contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material
- No person may be required or permitted to work in an excavation that has not been adequately shored or braced or where:
    - the excavation is in stable material or where
    - the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane
- The shoring or bracing may not be left out unless written permission has been obtained from the appointed competent person and shoring and bracing must be designed and constructed to safely support the sides of the excavation

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- Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavator
- No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the trench unless suitable shoring has been installed to be able to carry the additional load
- Any neighbouring building, structure or road that may be affected or endangered by the excavation must be protected from damage or collapse
- Every excavation must be provided with means of access that must be within 6 metres of any worker within the excavation
- The location and nature of any existing services such as water, electricity, gas etc. must be
- established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for workers in the excavation
- Every excavation including the shoring and bracing or any other method to prevent collapse must be inspected by the appointed competent person as follows:
    - Daily before work commences
    - After every blasting operation
    - After an unexpected collapse of the excavation
    - After substantial damage to any supports
    - After rain

The results of any inspections must be recorded in a register kept on site

- Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced to at least one metre high and as close to the excavation as practicable and
- Provided with warning lights or visible boundary indicators after dark or when visibility is poor
- Upon entering an excavation the requirements of General Safety Regulation 5 must be observed:
    - **any** confined space may only be entered after the air quality has been tested to ensure that it is safe to breathe and does not contain any flammable mixture or
    - **the** confined space has been purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes and
    - **the** safe atmosphere must be maintained or
    - **em**ployees have to be using breathing apparatus and wearing a safety harness with a rope with the free end of the rope being attended to by a person outside the confined space, furthermore,
    - **an** additional person trained in resuscitation must be in full-time attendance immediately outside the confined space and
    - **ad**ditional breathing and rescue apparatus must be kept immediately outside the confined space for rescue purposes
    - **al**l pipes, ducts etc. that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage
    - **the** employer must ensure that all employees have left the confined space after the completion of work
    - **where** flammable gas is present in a confined space no work may be performed in close proximity to the flammable atmosphere that may ignite the flammable gas or vapour.

(h) Demolition Work (Construction Regulation 12.)

- Demolition work to be carried out under the supervision of a competent person who has been appointed in writing
- A detailed structural engineering survey of the structure to be demolished to be carried out and a method statement on the procedure to be followed in demolishing the structure to be developed by a competent person, before any demolition may be commenced

- As demolishing progresses the structural integrity of the structure to be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature collapse
- Steps must be taken to ensure that where a structure is being demolished:
    - no floor. roof or any other part of the structure is overloaded with debris or material that would make it unsafe
    - precautions are taken to prevent the collapse of the structure when any frame or support is cut or removed
    - shoring or propping is applied where necessary
    - No person must be required or allowed to work under unsupported overhanging material

THE STABILITY OF AN ADJACENT BUILDING, STRUCTURE OR ROAD MUST BE MAINTAINED AT ALL TIMES

- The location and nature of any existing services such as water, electricity, gas etc. must be established before any demolition is commenced with and any service that may be affected by the demolition must be protected and made safe for workers
- Every stairwell in a building being demolished must be adequately illuminated
- Convenient and safe means of access must be provided
- A catch platform or net must be erected over every entrance to the building or structure being demolished where the likelihood exists of material or debris falling on persons entering and leaving and every other area where the likelihood exists of material or debris falling on persons, must be fenced or barricaded
- No material may be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded
- Waste and debris may only be disposed of from a height in a chute with the following design:

    - Adequately constructed and rigidly fastened
    - If inclined >45 degrees enclosed on all four sides
    - Fitted with a gate or control mechanism to control the flow of material that may not freefall down the chute
    - Discharged into a container or a barricaded area
    - Demolition equipment may only be used on floors or slabs that are able to support it

- Asbestos related work must be conducted to the requirements of the Asbestos regulations promulgated under the OHS Act and in particular Asbestos Regulation 21:

    - Demolition of asbestos may only be carried out by a registered (with the Department of Labour) Asbestos Contractor
    - All asbestos materials likely to become airborne must be identified
    - A Plan of Work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA) (approved by the Department of Labour) 30 days prior to commencement of demolishing work unless the Plan was drawn up by an AAIA and a signed (by all parties) copy must be submitted to the Department of Labour 14 days before commencement of the demolishing

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During demolition work:

- all asbestos containing material must be disposed of safely workers must be issued with appropriate PPE and the proper use thereof enforced
- After the demolition has been completed the area/premises must be thoroughly checked to ensure that all asbestos waste has been removed

- No person is allowed to:
  - Use compressed air or permit the use of compressed air to remove asbestos dust from any surface or person
  - Smoke, eat, drink or keep food or beverages in an area not specifically designated for this
  - Apply asbestos by spraying

Lead related work must be conducted to the requirements of the Lead regulations promulgated under the OHS Act

Where demolition work will involve the use of explosives a method statement must be developed by a competent person in accordance with applicable explosives legislation.

(i) Tunnelling (Construction Regulation 13.)

- To be performed in accordance with the Tunnelling Regulations as published under the Mines Health & Safety Act (29 of 1996)
- No person shall enter a *tunnel that has a height dimension less than 800 mm
  - ***** Definition of Tunnelling: "the construction of any tunnel beneath the natural surface of the earth for the purpose other than the searching for or winning of a mineral

(j) Access Scaffolding (Construction Regulation 14)

Access Scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 14 and SA Bureau of Standards Code of Practice, SANS 085 entitled, "The Design, Erection, Use & Inspection of Access Scaffolding.

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly.

Scaffolding may only be erected, altered or dismantled by a person who has adequate training and experience in this type of work or under the supervision of such a person.

(k) Suspended Platforms & Boatswains Chairs (Construction Regulation 15 & 16)

The Contractor to design, erect, use and maintain suspended platforms in accordance with the requirements of Construction Regulation 15.

Boatswains chairs are to be erected, used maintained and inspected in accordance with the requirements of Construction Regulation 16.

(l) Batch Plants (Construction Regulation 18)

The Contractor to erect, operate and maintain Batch Plants in accordance with the requirements of Construction Regulation 18.

Explosive Powered Tools (Construction Regulation 19)

Every Explosive Powered Tools (EPT) must be:

- Provided with a guard around the muzzle to confine flying fragments or particles
- A firing mechanism that will prevent the EPT from firing unless it is pushed against the surface and at right angle (where the EPT is fitted with an intermediate piston between the charge and the nail this requirement is waived)

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Witness: ……..

The Contractor or user must ensure that:

- Only the correct type of cartridge is used
- The EPT is cleaned inspected and cleaned daily before use by an appointed competent person who keeps register with the findings of his inspection and the details of cleaning, service and repairs
- The safety devices are in good working order before the EPT is use
- When the EPT is not being used it is stored in an unloaded condition together with the cartridges in a safe/secure place inaccessible to unauthorised persons
- A warning notice is displayed at the point where the EPT is in use
- The issue and return of cartridges must be by issue/returns register signed by both issuer and user and empty cartridge cases must be returned with unspent cartridges
- Users/operators of the EPT have received the necessary training and has been authorised as competent to use/operate the EPT
- Users/operators must wear the prescribed PPE whilst using/operating the tool

(m) Cranes & Lifting Equipment (Construction Regulation 20)

Cranes and Lifting equipment must be designed and constructed in accordance with generally accepted technical standards and operated, used, inspected and maintained in accordance with the requirements of Driven Machinery Regulation 8 of the OHS Act:

- to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the a table should be used by the driver/operator
- each winch on a lifting machine must al all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit
- fitted with a brake or other device capable of holding the MML. This brake or device to automatically prevent the downward movement of the load when the lifting power is interrupted
- fitted with a load limiting device that automatically arrest the lift when
- the load reaches its highest safe position or
- when the mass of the load is greater than the MML
- every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
  - chains – 4 (four)
  - steel wire ropes - 5 (five)
  - fibre ropes - 10 (ten)
- every hook or load attaching device must be designed such or fitted with a device that will prevent the load from slipping off or disconnecting
- every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturers prescription or to 110% of the MML
- in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety
- devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person
- all maintenance, repairs, alterations and inspection results must be recorded in a log book
- and each lifting machine must have its own log book.
- no person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by the inspector of the Department of Labour
- every jib crane with an MML of 5 000 kg or more at minimum jib radius must be provided
- with a load indicator or a load lifting limiting device

Lifting Tackle:

- to be manufactured of sound material, well constructed and free from patent defects
- to be clearly and conspicuously marked with ID number and MML
- factor of safety:
  - Natural fibre ropes - 10(ten)
  - Man-made fibre ropes & woven webbing - 06(six)
  - Steel wire ropes – single rope - 06(six)
  - Steel wire ropes – combination slings - 08(eight)
  - Mild Steel chains - 05(five)
  - High tensile/alloy steel chains - 04(four)
- steel wire ropes must be discarded (not used any further for lifting purposes) when excessive wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded.

Operator

- Every lifting machine operator must be trained specifically for the type of lifting machine that he/she is operating
- Operators of Jib cranes with a MML of 5 00 kg or more must be in possession of a certificate of training issued by an accredited (by The Department of Labour) training provider.

Construction Regulation 20:

Where tower cranes (TC) are used:

- account must be taken of the effects of wind force on the structure
- account must be taken of the bearing capacity of the ground on which the TC is to be erected
- the bases for the TC and tracks for rail mounted TC's must be firm and level
- must be erected at a safe distance from excavations
- clear space must be provided and maintained for erection, operation, maintenance and dismantling
- TC operators must be competent to carry out the work safely
  TC operators must be in possession of a valid medical certificate testifying that the holder is physically and psychologically fit to work on a TC.

All lifting operations where the lift will exceed 2000 kg must be planned by a competent person and the plan submitted to Dr JS Moroka Local Municipality for approval and permission to carry out the lift.

(n) Construction Vehicles & Mobile Plant (Construction Regulation 21)

Construction Vehicles and Mobile Plant will be inspected by Dr JS Moroka Local Municipality prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHS Act and Regulations.

Construction Vehicles and Mobile Plant (CV&MP) to be:

- of acceptable design and construction
- maintained in good working order
- used in accordance with their design and intention for which they were designed
- operated/driven by trained, competent and authorised operators/ drivers. No unauthorised persons to be allowed to drive CV&MP
- operators and drivers of CV&MP must be in possession of a valid medical certificate declaring the operator/drive physically and psychologically fit to operate or drive CV&MP

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Witness: ……..

- provided with safe and suitable means of access
- fitted with adequate signalling devices to make movement safe including reversing
- excavations and other openings must be provided with sufficient barriers to prevent CV&MP from falling into same
- provided with roll-over protection
- inspected daily before start-up by the driver/operator/user and the findings recorded in a register/log book
- CV&MP to be fitted with two head and two tail lights whilst operating under poor visibility conditions
- No loose tools, material etc. is allowed in the driver/operators compartment/cabin nor in the compartment in which any other persons are transported
- CV&MP used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported

No person may ride on a CV&MP except for in a safe place provided for the purpose
The construction site must be organised to facilitate the movement of CV&MP and that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated
CV&MP left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights reflectors or barricades to prevent moving traffic to come into contact with the parked CV&MP.
In addition CV&MP left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely
Workers employed adjacent or on public roads must wear reflective safety vests

All CV&MP inspection records must be kept in the OH&S File

(o) Electrical Installations (Construction Regulation 22)

The installation of temporary electricity for Construction shall be in accordance with the Construction regulation 22 and the Electrical Installation Regulations.

The Contractor must ensure that:

- existing services are located and marked before construction commences and during the progress thereof
- where the abovementioned is not possible, workers with jackhammers etc. are protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etc
- electrical installations and -machinery are sufficiently robust to withstand working conditions on site
- temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the OH&S File
- electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the OH&S File
- all temporary electrical installations must be controlled by a competent person appointed in writing

(p) Electrical & Mechanical Lock-Out

An electrical and mechanical lock-out procedure must be developed by the Principal Contractor and submitted to Dr JS Moroka Local Municipality for approval before construction commences. This lock-out procedure to be adhered to by all Contractors on site

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(q) Use & Storage of Flammables (Construction Regulation 23)

The Contractor to ensure that:

- No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions are taken
- No flammable is used or applied e.g. in spay painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose unless there is no danger of fire or explosion due to the application of adequate ventilation
- The workplace is effectively ventilated. Where this cannot be achieved:
  - Employees must wear suitable respiratory equipment
  - No smoking or other sources of ignition is allowed in the area
  - The area is conspicuously demarcated as "flammable"
- Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with access control measures in place and sufficient fire fighting equipment installed and fire prevention methods practised e.g. proper housekeeping
- Flammables stored in a permanent flammables store are stored so that no fire or explosion is caused i.e.:
  - stored in a locked well-ventilated reasonably fire resistant container, cage or room conspicuously demarcated as "Flammable Store – No Smoking or Naked Lights"
  - the flammables store to be constructed of two-hour fire retardant walls and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall
  - Adequate and suitable fire fighting equipment installed around the flammables store and marked with the prescribed signs
  - All electrical switches and fittings to be of a flameproof design
  - Any work done with tools in a flammables store or work areas to be of a non-sparking nature
  - No Class A combustibles such as paper, cardboard, wood, plastic, straw etc. to be stored together with Flammables
  - The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored
  - A sign indicating the capacity of the store to be displayed on the door
  - Only one day's quantity of Flammable is to be kept in the workplace
  - Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas
  - Metal containers to be bonded to earth whilst decanting to prevent build-up of static
  - Welding and other flammable gases to be stored segregated as to type of gas and empty and full cylinders

(r) Working on or Near Water (Construction Regulation 24)

The Principal Contractor must ensure that, where construction work is being carried out over or in close proximity to water:

- Measures are in place to prevent workers from falling into the water and drowning. These measure to include the availability of lifejackets
- Measures are in place to rescue any worker/ that has fallen into the water
- Measures for the timeous warning of flooding are in place

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(s) Housekeeping (Construction Regulation 25)

The Contractor to ensure that:

- Housekeeping is continuously implemented
- Materials & equipment are properly stored
- Scrap, waste & debris are removed regularly
- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to free flow of pedestrian and vehicular traffic
- Waste & debris not to be removed by throwing from heights but by chute or crane
- Where practicable, Construction sites are fenced off to prevent entry of unauthorised persons
- Catch platforms or –nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects
- An unimpeded work space is maintained for every employee
- Every workplace is kept clean, orderly and free of tools etc. that are not required for the work being done materials
- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials
- The walls and roof of every indoors workplace is sound and leak-free
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fences, boarded over or provided with protection to prevent persons from falling

(t) Stacking & Storage (Construction Regulation 27)

The Contractor/Employer must ensure that:

- A competent person is appointed in writing to supervise all stacking and storage on a construction site
- Adequate storage areas are provided and demarcated
- The storage areas are kept neat and under control
- The base of any stack is level and capable of sustaining the weight exerted on it by the stack
- The items in the lower layers can support the weight exerted by the top layers.
- Cartons and other containers that may become unstable due to wet conditions are kept dry
- Pallets and containers are in good condition and no material is allowed to spill out
- The height of any stack does not exceed 3X the base unless stepped back at least half the depth of a single container at least every fifth tier or
- the approval of an inspector has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead off the stack and no items may overhang)
- The articles that make up a single tier are consistently of the same size, shape and mass
- Structures for supporting stacks are structurally sound and able to support the mass of the stack
- No articles are removed from the bottom of the stack first but from the top tier first
- Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him/her
- Stacks that are in danger of collapsing are broken down and restacked
- Stability of stacks are not threatened by vehicles or other moving plant and machinery
- Stacks are built in a header and stretcher fashion and that corners are securely bonded
- Stepped back at least half the depth of a single container at least every fifth tier

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- Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations

(u) Storage of Flammables and Hazardous Chemicals (Hazardous Chemical Substances Regulations)
See (u) above and (v) below.

Fire Prevention and Protection

The Principal Contractor must ensure that:

- The risk of fire is avoided
- Sufficient & suitable storage of flammables is provided
- Sources of ignition is obviated wherever flammable or highly combustible material is present in the workplace e.g.:
  - notices prohibiting smoking is displayed and enforced
  - welding and flame cutting is only allowed under controlled conditions that includes written hot work permits
  - only spark-free hand and power tools are used
  - no grinding, cutting and shaping of ferrous metals are allowed using electrically driven power tools that produces sparks
  - flameproof switches & fittings are to be used in the flammable atmosphere
  - Good housekeeping is maintained to prevent the accumulation of unnecessary combustibles
  - Adequate ventilation is maintained
  - Adequate and suitable fixed and portable fire appliances is provided and maintained in good working order.
  - Maintenance must include:
  - Regular inspection by a competent person appointed in writing and keeping a register
  - Annual inspection and service by an accredited service provider
- All employees are instructed in the use of the Fire equipment and know how to attempt to extinguish a fire
- A sufficient number of employees are appointed and trained to act as Emergency Team to deal with fires and other emergencies
- Employees are informed re. emergency evacuation procedures and escape routes
- Emergency escape routes are kept clear at all times
- After evacuation assembly points are demarcated
- Evacuation is practised to ensure that all is evacuated timeously
- Roll-call is held after evacuation to account for all personnel and ensure that no-one has been left behind.
- A clearly audible to all persons on site siren or alarm is fitted

(v) Eating, Changing, Washing & Toilet Facilities (Construction Regulation 28)

The following will be the minimum requirements:

Toilets

The provision of Toilets is required in terms of the National Building Regulations and Construction Regulation 28.

Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of 1 toilet per 30 workers

Showers

At least cold water showers of some sort have to be provided to a ratio of 1 shower per 15 workers.

Change Rooms

Some form of screened off changing facility must be provided separately for each sex.

Eating Facility
Some form of shelter from the sun, wind and rain must be provided

(w) Living Accommodation

Where the site is in a remote location and transport home is not readily available, reasonable and suitable living accommodation must be provided.

(x) Personal & Other Protective Equipment (Sections 8/15/23 or the OHS Act)

The Contractor is required to identify the hazards in the workplace and deal with them. He must either remove them or, where impracticable take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions.
Personal Protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of PPE is considered.
Where it is not possible to create an absolutely safe and healthy workplace the Contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.
It is a further requirement that the said equipment be maintained by the Contractor, that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s.
Employees do not have the right to refuse to use/wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternative solution has to be found that may include relocating or discharging the employee.
The Contractor may not charge any fee for protective equipment prescribed by him/her but may charge for equipment under the following conditions:

- Where the employee requests additional issue in excess of what is prescribed
- Where the employee has patently abused or neglected the equipment leading to early failure
- Where the employee has lost the equipment

All employees shall, as a minimum, be required to wear the following PPE on any Dr JS Moroka Local Municipality projects:

- **Protective overalls**
- **Protective footwear**
- **Protective headwear**
- **Eye/face protection**

(y) Portable Electrical Tools & Equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 amp. plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etc. In addition electrical appliances such as fridges, hotplates, heaters, etc. must be inspected and maintained to the same standards as portable electrical tools and appliances.
The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing
- Inspection results must be recorded in a register
- Only competent authorised persons are allowed to use portable electrical tools and equipment

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- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment

Portable Electrical Tools

- Must be maintained in good condition at all times to prevent an electrical shock to the user
- The main source must incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such
- All equipment must be fitted with a switch to allow for safe & easy starting and stopping

Portable Lights

- Must be fitted with a robust non-hygroscopic non-conducting handle
- Live metal parts/parts which may become live must be protected against contact
- The lamp must be protected by a strong guard
- The cable lead-in must withstand rough handling
- It is suggested that a register be kept for each piece of equipment and findings of regular
- inspections must be entered
- Inspections must concentrate on plug, cord, switch and any obvious faults
- When used in wet/damp/metal container conditions, it must be protected as for portable
- electrical tools, above

(z) Public Health & Safety (Section 9 of the OHS Act)

The Principal Contractor will be responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes:

- Non- employees entering the site for whatever reason
- The surrounding community
- Passers by to the site

Appropriate signage must be posted to this effect and all employees on site must be instructed on ensuring that non-employees are protected at all times
All non-employees entering the site must receive induction into the hazards and risks and the control measures for these.

(aa) Hazardous Chemical Substances

The Contractor/Employer must ensure that:

- Employees receive the necessary information & training to be able to use and store HCS safely
- Employees obey lawful instructions regarding:
  - the wearing and use of protective equipment
  - the use and storage of HCS
  - the prevention of the release of HCS
  - the wearing of exposure monitoring and measuring equipment
  - the cleaning up and disposal of materials containing HCS
  - housekeeping, personal hygiene and the protection of the environment
  - the Risk Assessments required in terms of Construction Regulation 7 include employee exposure to HCS and that the necessary to protect persons from being detrimentally affected by HCS present or used in the workplace, are taken
  - suppliers provide the necessary information in the form of a Material Safety Data Sheet (MSDS) regarding an HCS required to ensure the safe use and storage of that HCS

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  - an up-to-date list is kept on site of HCS's stored and used together with the MSDS's of the said HCS's
- HCS containers are clearly marked as to the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the HCS on the list indicated above
- HCS e.g. Asbestos dust is not cleared by the use of compressed air but is vacuumed
- No person eats or drinks in a HCS workplace
- HCS waste is disposed of safely in terms of hazardous waste disposal requirements

(ab) Project/Site Specific Requirements

See Annexure 3
Annexure 1: Measuring Injury Experience
Annexure 2: Executive SHE Risk Management Report
Annexure 3: List of Risk Assessments

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Witness: ……..

ANNEXURE 1: MEASURING INJURY EXPERIENCE

Injury experience has traditionally been measured by the use of a disabling injury frequency rate, the so-called "DIFR". The DIFR is calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of man-hours worked.

Lately the DIFR has been replaced internationally with a DIIR: disabling injury incidence rate. The only difference between the two rates are that the 10 million in the calculation is replaced with 200 000. (200 000 purported to be the number of hours and average person works in a lifetime.)

The use of the two rates above has proved to be somewhat problematical as they are open to manipulation and disabling injuries are often "hidden" by returning the injured employee to the workplace so as not to lose a shift and therefore having to register a disabling injury.

The Construction Industry recently decided to promote the use of a new frequency rate based on the number of compensation injury claims as these are more difficult to hide or manipulate because the reporting of compensable injuries is a legal requirement.

The industry is hoping that adoption of this new measurement of injury experience will enable the industry to monitor itself as far as work related injuries are concerned.

Below follows an explanation of this new rating system.

COMPENSATION INCIDENCE FREQUENCY RATE (CIFR)

FORMULA

No. of Compensation Claims X 200 000

*220 man hours X No. of Employees

DEFINITIONS

No. of Compensation

Claims: **The number of claims lodged with the COID insurer for the period under review**

200 000: The fixed factor to align the rate with other rates used internationally

Man-hours Worked

Include:
* Hourly Paid Employees
* Sub-contactors (No. of Employees X *220 each)
* Staff (No. of Employees X *220 hours each)

220 man-hours: The *average number of hours worked by one employee in one month in the Construction industry.

* Overtime, absence on leave or sick leave, unrecorded after hours time worked by senior and middle management factored into this average.

No. of Employees: The actual or average number of employees employed for the period under review.

2002/03CIFRSystem

ANNEXURE 2: EXECUTIVE SHE RISK MANAGEMENT REPORT

The SAFCEC OH&S committee recently developed the following report in an attempt to standardise on reporting and assist contractors in obtaining a clear picture of their SHE Risk Management performance. It is hoped that clients will also accept this standardised report. Your comments/suggestions for improvement is invited.

EXAMPLE ONLY: ALL INFORMATION IS FICTITIOUS

Xyz construction

*SHE RISK MANAGEMENT REPORT

PERIOD JANUARY TO MARCH 2002

*(SHE = Safety, Health & Environment)

1. Introduction

We hope that this new format of quarterly SHE Risk Management reporting will provide a clear picture of the company's performance as far as occupational health & safety is concerned.

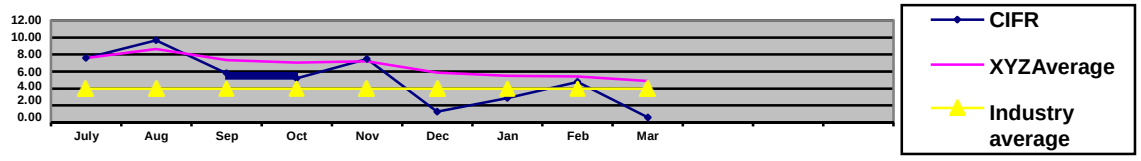
The first quarter of 2002 generally reflected an improvement in injury experience and shows a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2001 figures. A sub-contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation in May of the new electronic SHE Management system that will make the tools to implement the SHE programme available to all management and supervisory staff.

2. Incident Statistics

Compensation Incident Frequency Rate (CIFR)

CIFR = Total No. of Claims against the Workmen's Compensation Fund X 200 000
Man-hours worked



2.

2. Disabling Injury Incidence Rate (DIIR)

DIIR = No. Disabling Injuries X 200 000
Manhours worked

Bidder:
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Witness: ……..

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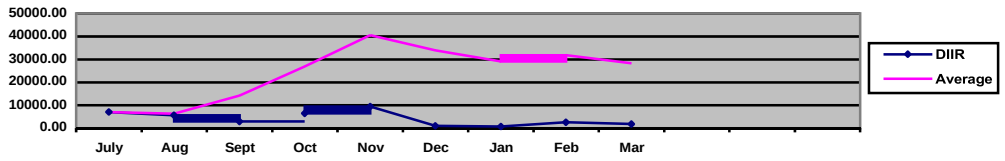

2.3. Other Major Incidents

Three other major incidents were experienced in the period under review:

2.3.1. A major trench collapsed at Job. 00123: XYZ Head Office, Bochum: No personnel injured, extensive damage to foundations: 3 days delay.

2.3.2. A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Polokwane. The driver jumped off and was not injured. Cost of damage to façade: R45 000.

2.3.3. A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and levelling machines. Cost of replacing the hut and machines: R30 000

3. RISK AREAS

The following items of concern need priority consideration by management:

3.1. New employees must undergo pre-employment medical examinations to:

- protect XYZ from claims at a later stage
- ensure that only healthy persons are employed
- prevent injuries and illness in the workplace
- enhance XYZ image

3.2. Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

4. AUDITS

Three SHE audits were conducted in February and March:

4.1.

Job 00432:	Gillooly's Mall	Compliance: 56%(*)
Job 00786:	Cullinan Head Office	Compliance: 83%(****)
Job 00589:	Cleveland Station	Compliance: 76%(***)

4.2. TRAINING

One hundred and forty two employees, representing 7% of employees, attended nine training courses. * Our objective is to train 5,5% of employees quarterly.

Month	No. of Employees Trained	Course	Source
January	26	Induction	Internal

	15 3	OH&S Reps Crane Drivers	Consultant External
February	23 17	Induction OH&S Reps	Internal Consultant
March	43 9 3 3	Induction OH&S Reps Bomag Rollers First Aiders	Internal Consultant Supplier St. John's

6. LEGAL ISSUES

6.1. An inspector of the Department of Labour issued an improvement notice on Job 00987: Gillooly's Mall. The notice requires that all scaffolding comply with the SABS standards for the Erection and Maintenance of Access Scaffolding (SABS 085). This is currently being attended to and the inspector will return on 15 April 2002 to ascertain if the notice has been complied with.

8. OCCUPATIONAL AIND OTHER HEALTH MATTERS

8.1. HIV Aids

The proposed SAFCEC clinic will soon be operational and we will then be able to send our employees who have tested positive to the clinic for counselling and eventual treatment when necessary

The mobile clinic saw and tested fifty employee volunteers at 3 sites this month. Eighteen of them tested positive.

8.2. Tuberculosis

The mobile clinic will be calling at Gillooly's Mall and Cleveland Station on 15 and 16 October respectively to screen employees for TB.

8.3. Noise

All suspected noise pollution areas have been tested and the results are awaited. Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

9. ENVIRONMENTAL MEASURES

- Inspectors from the Botswana Department of the Environment visited Djwaneng and inspected the site and yard. They gave it a "clean bill of health" and advised that we should increase the dust control measures by spraying roads three times per day instead of the present twice per day.

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ANNEXURE 3: LIST OF RISK ASSESSMENTS

* Clearing & Grubbing of the Area/Site
* Site Establishment including:
  - Office/s
  - Secure/safe storage for materials, plant & equipment
  - Ablutions
  - Sheltered eating area
  - Maintenance workshop
  - Vehicle access to the site
* Dealing with existing structures
* Location of existing services
* Installation and maintenance of temporary construction electrical supply, lighting and equipment
* Adjacent land uses/surrounding property exposures
* Boundary and access control/Public Liability Exposures (NB: the Employer is also responsible for the OH&S of non-employees affected by his/her work activities.)
* Health risks arising from neighbouring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning etc.
* Exposure to noise
* Exposure to vibration
* Protection against dehydration and heat exhaustion
* Protection from wet & cold conditions
* Dealing with HIV/Aids and other diseases
* Use of Portable Electrical Equipment including
  - Angle grinder
  - Electrical drilling machine
  - Skill saw
* Excavations including
  - Ground/soil conditions
  - Trenching
  - Shoring
  - Drainage of trench
* Welding including
  - Arc Welding
  - Gas welding
  - Flame cutting
  - Use of LP gas torches and appliances
* Loading & offloading of trucks
* Aggregate/sand and other materials delivery
* Manual and mechanical handling
* Lifting and lowering operations
* Driving & operation of construction vehicles and mobile plant including
  - Trenching machine
  - Excavator
  - Bomag roller
  - Plate compactor
  - Front end loader
  - Mobile cranes and the ancillary lifting tackle
  - Parking of vehicles & mobile plant
  - Towing of vehicles & mobile plant

* Use and storage of flammable liquids and other hazardous substances

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* Layering and bedding
* Installation of pipes in trenches
* Pressure testing of pipelines
* Backfilling of trenches
* Protection against flooding
* Gabion work
* Use of explosives
* Protection from overhead power lines
* As discovered by the Principal Contractor's 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.

C3.4.3.2 ENVIRONMENTAL MANAGEMENT PLAN

CONTENTS

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C3.4.3.2.1. SCOPE

This environmental management programme (EMP) sets out the methods by which proper environmental controls are to be implemented by the contractor. The duration over which the contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by the General Conditions of Contract, and the project specifications, as the defects notification period (maintenance period).
The provisions of this EMP are binding on the contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract. In the event that any conflict occurs between the terms of the EMP and the project specifications or Record of Decision, the terms herein shall be subordinate.
The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any substantial changes shall be submitted to the Roads Agency in writing for approval.
The EMP identifies the following:
Construction activities that will impact on the environment.
Specifications with which the contractor shall comply in order to protect the environment from the identified impacts.
Actions that shall be taken in the event of non-compliance.

C3.4.3.2.2. DEFINITIONS

Alien Vegetation: alien vegetation is defined as undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

Construction Activity: a construction activity is any action taken by the contractor, his subcontractors, suppliers or personnel during the construction process as defined in the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7, 1998)

Environment: environment means the surroundings within which humans exist and that could be made up of -

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Environmental Aspect: an environmental aspect is any component of a contractor's construction activity that is likely to interact with the environment.

Environmental Impact: an impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

Record of Decision: a record of decision is a written statement from the Department of Economic Development, Environment and Tourism that records its approval of a planned undertaking to improve, upgrade or rehabilitate a section of road and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

Road Reserve: the road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Road Width: for the purposes of the EMP, the road width is defined as the area within the road reserve i.e. fence line to fence line, but also includes all areas beyond the road reserve that are affected by the continuous presence of the road, e.g. a reach of a water course.

C3.4.3.2.3. IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

The contractor shall identify likely aspects before commencing with any construction activity. Examples of environment aspects include:

- waste generation
- stormwater discharge
- emission of pollutants into the atmosphere
- chemical use operations
- energy use operations
- water use operations
- use of natural resources
- noise generation

Thereafter the contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified and the activity planned so as to prevent any impact from happening. If prevention is not practicable, or in the event of mishap or misapplication, the contractor shall provide plans and measures for the engineer's approval, which will limit and contain the magnitude, duration and intensity of the impact. The contractor shall demonstrate that he/she is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce an approved construction programme according to subclause 8.3 as amended by Particular Condition of the general conditions of contract and clause B1204 of these project specifications.
Listed below are some environmental impacts that could adversely alter an aspect of the environment through usual construction activities:
Pollution of atmosphere, soil or water
Destruction or removal of fauna and flora and effect on biological diversity
Deformation of the landscape
Soil erosion
Destruction of historical/heritage sites
Effect on the built environment
Effect on agricultural land and wetlands
General good construction practice will play an important role in avoiding the occurrence of an Impact. The contractor's attention is drawn, in this regard, to C1008. Environmental Management of Construction Activities

C3.4.3.2.4. LEGAL REQUIREMENTS

a) General

Construction will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The contractor should note that obligations imposed by the EMP are legally binding in terms of environmental statutory

legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

b) Statutory and other applicable legislation

The contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

C3.4.3.2.5. ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

a) Appointment of a Designated Environmental Officer (DEO)

For the purposes of implementing the conditions contained herein, the contractor shall submit to the engineer for approval the appointment of a nominated representative of the contractor as the DEO for the contract. The request shall be given, in writing, at least fourteen days before the start of any work clearly setting out reasons for the nomination, and with sufficient detail to enable the engineer to make a decision. The engineer will, within seven days of receiving the request, approve, reject or call for more information on the nomination. Once a nominated representative of the contractor has been approved he/she shall be the DEO and shall be the responsible person for ensuring that the provisions of the EMP are complied with during the life of the contract. The engineer will be responsible for issuing instructions to the contractor where environmental considerations call for action to be taken. The DEO shall submit regular written reports to the engineer, but not less frequently than once a month.
The engineer shall have the authority to instruct the contractor to replace the DEO if, in the engineer's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMP or this specification. Such instruction will be in writing and shall clearly set out the reasons why a replacement is required.
There shall be an approved DEO on the site at all times.

b) Administration

Before the contractor begins each construction activity the DEO shall give to the engineer a written statement setting out the following:
The type of construction activity.
Locality where the activity will take place.
Identification of the environmental aspects and impacts that might result from the activity.
Methodology for impact prevention for each activity or aspect.
Methodology for impact containment for each activity or aspect.
Emergency/disaster incident and reaction procedures.
Treatment and continued maintenance of impacted environment.
The contractor may provide such information in advance of any or all construction activities provided that new submissions shall be given to the engineer whenever there is a change or variation to the original.
The engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

c) Good Housekeeping

The Contractor shall undertake "good housekeeping" practices during construction as stated in clause 1217 of the COLTO Standard Specifications for Roads and Bridges and subclauses 4.18 and 11.11 of the General Conditions of Contract. This will help avoid disputes on responsibility and allow for the smooth

running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

C3.4.3.2.6. TRAINING

The designated environmental officer (DEO) must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.
The contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.

In the case of permanent staff the contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the contractor shall inform the engineer when and how he/she intends concluding his environmental training obligations.

C3.4.3.2.7. ACTIVITIES/ASPECTS CAUSING IMPACTS

A list of possible causes of environmental impacts that occur during construction activities is given in Table 7/1: Aspects or Activities that Cause Environmental Impacts during Construction Activities, which is to be found at the end of this part. This list is not exhaustive, and shall be used for guideline purposes only.

C3.4.3.2.8 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

a) Site Establishment

i) Site Plan

The contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the contractor shall submit to the engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place.
The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted not later than the first site meeting.
Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the engineer for consultation during rehabilitation of the site. Read with COLTO Specification 1302(a), 1402 (e).

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ii) Vegetation

The contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.
The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring shall be re-established.
The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding. (Read in conjunction with COLTO Specification 5801(b), 5802(b), (c), (d) and (e), 5804, 5805, 5806 and 5807). Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Rehabilitation

The area where the site offices were erected will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas shall be removed from the site on completion of the contract.

iv) Water for human consumption

Water for human consumption shall be available at the site offices and at other convenient locations on site.
All effluent water from the camp / office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc). Only domestic type wastewater shall be allowed to enter this drain.

v) Heating and cooking fuel

The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage treatment

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of project management, the local authorities and legal requirements.
Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage treatment will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall

be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the engineer. Read with COLTO Specifications 1402(g) and 1404(a).
Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.
Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the engineer.

c) Waste Management

The contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid Waste

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the engineer. Disposal of solid waste shall be at a Department of Water Affairs and Forestry (DWAF) licensed landfill site or at a site approved by DWAF in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried at or near the site offices, or anywhere else on the site, including the approved solid waste disposal site. Read with COLTO Specification 1404(a).

ii) Litter

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.
Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the contractor shall provide litter collection facilities for later safe disposal at approved sites. (Read with COLTO Specification 1302(b)).

iii) Hazardous waste

Hazardous waste such as bitumen, tar, oils etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care shall be taken to avoid spillage of tar or bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.
Under no circumstances shall the spoiling of tar or bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected tar or bituminous products shall be returned to the supplier's production plant. Any spillage of tar or bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the engineer.

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d) Control at the workshop

The contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e. at the place of construction activity or at a formalised workshop).

i) Safety

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the contractor to, and used or worn by, the staff whose duty it is to manage and maintain the contractor's and his subcontractor's and supplier's plant, machinery and equipment.

ii) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials e.g. tar or bitumen binders shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of tar or bituminous products shall only take place using suitable containers to the approval of the engineer.
The contractor shall provide proof to the engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected the contractor shall furnish the engineer with details of the preventative measures he proposes to install in order to mitigate against pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

iii) Fuel and Gas Storage

Fuel shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.
Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area.

iv) Oil and Lubricant Waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.
All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

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e) Clearing the Site

In all areas where the contractor intends to, or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the engineer for his approval.
The plan shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections. The contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, road construction has to be stored temporarily or otherwise within the road reserve, or at designated or instructed areas outside the road reserve. This responsibility shall extend until expiry of the defects notification period.

f) Soil Management

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil from the site for later re-use. Topsoil is considered to be the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include the storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved Department of Water Affairs and Forestry waste disposal site. (Read with COLTO Specifications 3104(a), 5802(a), (g), 5804(a), (b) and (c)). The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water. Stockpiles of topsoil shall not exceed a height of 2m, and if they are to be left for longer than 6 months, shall be analysed, and if necessary, upgraded before replacement. Stockpiles shall be protected against infestation by weeds.
The contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be topsoiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the engineer. The contractor's responsibility shall also extend to the clearing of drainage or water systems within and beyond the boundaries of the road reserve that may have been affected by such negligence.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the engineer, and stored separately from the topsoil if not used for road building. This soil shall be replaced in the excavation in the original order it was removed for rehabilitation purposes.

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g) Drainage

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users / receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.
Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products.
The contractor shall submit to the engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions.

h) Earthworks and Layerworks

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the contractor shall have complied with the requirements of sections C1008 (e) and C1008 (g). In addition, the contractor shall take cognisance of the requirements set out below.

i) Quarries and borrow pits

The contractor's attention is drawn to the requirement of the Department of Minerals and Energy that before entry into any quarry or borrow pit, an EMP for the establishment, operation and closure of the quarry or borrow pit shall have been approved by the Department. It is the responsibility of the contractor to ensure that he is in possession of the approved EMP or a copy thereof, prior to entry into the quarry or borrow pit. The conditions imposed by the relevant EMP are legally binding on the contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific EMP and these specifications the former shall apply. The cost of complying with the requirements shall be deemed to be included in existing rates in the Bill of Quantities. (Read with COLTO Specification 3100 and 3200).

ii) Excavation, hauling and placement

The contractor shall provide the engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail the number of personnel and plant to be used and the measures by which the impacts of pollution (noise, dust, litter, fuel, oil, and sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition from rainfall overnight or over periods when there is no construction activity. (Read with COLTO Standard Specification clauses 1217 and 3309)

iii) Spoil sites

The contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the engineer. No spoil site shall be located within 500m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.
The use of approved spoil sites for the disposal of hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments. The engineer will assist the contractor in obtaining the necessary approval if requested by the contractor.
Spoil sites will be shaped to fit the natural topography. These sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Slopes shall not exceed a vertical: horizontal ratio of 1:3. Only under exceptional circumstances will approval be given to exceed this ratio. Appropriate grassing measures to minimise soil erosion shall be undertaken by the contractor. This will include both strip and full sodding. The contractor may motivate to the engineer for other acceptable stabilising methods. The engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the contractor of a landowner's clearance notice and an engineer's certificate certifying slope stability (Read with COLTO standard Specifications clause 1214). The contractor's costs incurred in obtaining the necessary certification for opening and closing of spoil sites shall be deemed to be included in the Tendered rates for spoiling.

iv) Stockpiles

The contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the engineer for his approval, together with the contractor's proposed measures for prevention, containment and rehabilitation against environmental damage.
The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the contractor shall at all times ensure that they are:

- Positioned and sloped to create the least visual impact;
- Constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment; and
- Kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated / deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the contractor's cost until clearance from the engineer and the relevant Authority is received.
Material milled from the existing road surface that is temporarily stockpiled in areas approved by the engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in-situ milling or any detritus of material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract drawing or under instruction from the engineer

In all cases, the engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their clause only when they have been satisfactorily rehabilitated. (Read with COLTO Specification 3203 and 4306).

v) Blasting activities

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives. In addition, the contractor shall, prior to any drilling of holes in preparation for blasting, supply the engineer with a locality plan of the blast site on which shall be shown the zones of influence of the ground and air shock-waves and expected limits of fly-rock. The plan shall show each dwelling, structure and service within the zones of influence and record all details of the dwellings/structures/services including existing positions, lengths and widths of cracks, as well as the condition of doors, windows, roofing, wells, boreholes etc. The contractor, alone, shall be responsible for any costs that can be attributed to blasting activities, including the collection of fly-rock from adjacent lands and fields. The submission of such a plan shall not in any way absolve the contractor from his responsibilities in this regard. The contractor shall also indicate to the engineer the manner in which he intends to advertise to the adjacent communities and/or road users the times and delays to be expected for each individual blast.

i) Batching sites

Asphalt plants are considered scheduled processes listed in the second schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965). Should the use of an asphalt plant be considered on site, the contractor shall be responsible to obtain the necessary permit from the Department of Environmental Affairs and Tourism, regardless of where they are sited.
Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the Department of Minerals and Energy legislation as well as the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relative authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under section C1008(h)(iii), with the exception that the contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard the contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant national authority, as shall approval of closure. The engineer will assist the contractor in his submissions to the relevant authority.
Effluent from concrete batch plants and crusher plants shall be treated in a suitable designated sedimentation dam to the legally required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the engineer for approval.
The contractor shall invite the relevant department to inspect the site within 2 months after any plant is commissioned and at regular intervals thereafter, not exceeding 12 months apart

j) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and tar or bituminous products. In the event of a spillage, the contractor shall be liable to arrange for professional service providers to clear the affected area.
Responsibility for spill treatment lies with the contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to his/her DEO or to the engineer. The Designated

Environmental Officer will assess the situation in consultation with the engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil / water shall be determined by the contractor in consultation with the DEO and the engineer. Areas cleared of hazardous waste shall be re-vegetated according to the engineer's instructions
Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the engineer. The costs of containment and rehabilitation shall be for the contractor's account, including the costs of specialist input.

k) Areas of Specific Importance

Any area, as determined and identified within the project document as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the approved EMP. The contractor may offer alternative solutions to the engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection shall not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall require ad hoc treatment.

i) Archaeological Sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the engineer of such discovery. The South African Heritage Research Agency (SAHRA) is to be contacted who will appoint an archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. (Read with COLTO General Condition of Contract Subclause 4.24 as amended by Particular Condition).

ii) Graves and middens

If a grave or midden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/middens shall be stopped and the engineer informed of the discovery. The South African Heritage Research Agency (SAHRA) should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The employer will be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred. (Read with COLTO General Conditions of Contract Subclause 4.24 as amended by Particular Condition).

l) Noise Control

The contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during daylight hours. Compliance with the appropriate legislation with respect to noise shall be mandatory. Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.

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m) Dust Control

Dust caused by strong winds shall be controlled by means of water spray vehicles. Dust omission from batching plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant office of the Department of Minerals and Energy.

n) Alien Vegetation

The contractor shall be held responsible for the removal of alien vegetation within the road reserve disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily or otherwise within the road reserve. This responsibility shall extend for the duration of the defects notification period.

C3.4.3.2.9. RECORD KEEPING

The engineer and the DEO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the engineer shall issue to the contractor a notice of non-compliance whenever transgressions are observed. The DEO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the engineer in the monthly report.
Copies of any record of decision or EMP's for specific borrow pits or quarries used on the project shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

C3.4.3.2.10. COMPLIANCE AND PENALTIES

The contractor shall act immediately when such notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at the monthly site meetings. Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

THE FOLLOWING PENALTIES SHALL APPLY FOR ENVIRONMENTAL VIOLATIONS:

A) UNNECESSARY REMOVAL OR DAMAGE TO TREES

- 2600MM GIRTH OR LESS : R 5 000 PER TREE
- GREATER THAN 2600MM, BUT LESS THAN 6180MM GIRTH : R10 000 PER TREE
- GREATER THAN 6180MM GIRTH : R30 000 PER TREE

B) Serious violations:

- Hazardous chemical/oil spill and/or dumping in Non-approved sites. : R10 000 per incident
- General damage to sensitive environments. : R 5 000 per incident
- Damage to cultural and historical sites. : R 5 000 per incident
- Uncontrolled/unmanaged erosion (plus rehabilitation at contractor's cost). : R 1 000 to R5 000 per incident
- Unauthorised blasting activities. : R 5 000 per incident
- Pollution of water sources. : R10 000 per incident

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

C) Less serious violations:

- Littering on site. : R1 000 per incident
- Lighting of illegal fires on site. : R1 000 per incident
- Persistent or un-repaired fuel and oil leaks. : R1 000 per incident
- Excess dust or excess noise emanating from site. : R1 000 per incident
- Dumping of milled material in side drains or on grassed Areas : R1 000 per incident
- Possession or use of intoxicating substances on site. : R 500 per incident
- Any vehicles being driven in excess of designated speed limits. : R 500 per incident
- Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife : R2 000 per incident
- Illegal hunting. : R2 000 per incident
- Urination and defecation anywhere except in designated areas. : R 500 per incident

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.
Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

C3.4.3.2.11. MEASUREMENT AND PAYMENT

"The cost of complying with this specification shall be deemed to be included in the rates tendered for this contract."

Item			**Unit**
C100.01	**Penalty for unnecessary removal or damage to trees** for the following diameter sizes		
	(a)	2600mm girth or less	number (No)
	(b)	Greater than 2600mm, but less than 6180mm girth	number (No)
	(c)	Greater than 6180mm girth	number (No)

The unit of measurement shall be the number of trees by diameter size removed unnecessary or damaged. The penalty rates applied shall be those stated in clause C3.5.2.10.

Item			**Unit**
C100.02	**Penalty for serious violations**		
	(a)	Hazardous chemical/oil spill and/or dumping in non-approved sites	number (No)
	(b)	General damage to sensitive environments	
	(c)	Damage to cultural and historical sites	number (No)
	(d)	Pollution of water sources	number (No)

(e)	Unauthorised blasting activities	number (No)
(f)	Uncontrolled/unmanaged erosion per incident, depending on environment impacts, plus rehabilitation at contractor's cost)	number (No)

The unit of measurement for C100.02 (a) to (f) shall be the number of serious violation incidents. The penalty rates to be applied shall be those stated in clause C3.5.2.10.

Item		**Unit**
C100.03	**Penalty for less serious violations**	
•	Littering on site	number (No)
•	Lighting of illegal fires on site	number (No)
•	Persistent or un-repaired fuel and oil leaks	number (No)
•	Excess dust or excess noise emanating from site	number (No)
•	Dumping of milled material in side drains or on grassed areas	number (No)
•	Possession or use of intoxicating substances on site	number (No)
•	Any vehicles being driven in excess of designated speed limits	number (No)
•	Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife	number (No)
•	Illegal hunting	number (No)
•	Urination and defecation anywhere except in designated areas	number (No)

The unit of measurement shall be the number of less serious violation incidents. The penalty rates applied shall be those stated in clause C3.5.2.10.

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.
Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

Table 1: Mechanisms that Cause Environmental Impacts during Construction Activities

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
1300	Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1400	Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1500	Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1600	Overhaul	Spillage Storage Noise/lights Dust control Exhaust fumes Washing waste	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation Preserve topsoil	

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SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
1700	Clearing and grubbing	Waste treatment Hazardous waste Water supply Noise /lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Protection of indigenous vegetation Preserve topsoil	
2100 - 2400	Drainage	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3100	Borrow pits	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3200	Stockpiling	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3300	Mass Earthworks	Waste treatment Hazardous waste Water supply Spillage	Selection of site Preserve indigenous vegetation	Selection of site Preserve indigenous vegetation	Preserve indigenous vegetation Preserve topsoil	

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SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
		Storage	Preserve topsoil	Preserve topsoil	Management of weeds	
3400 - 3900	Pavement layers	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
4100	Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control Smoke control Storage of materials	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	
5000	Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
6000	Structures	Waste treatment Hazardous waste Water supply	Selection of site Preserve indigenous	Selection of site Preserve indigenous	Preserve indigenous vegetation	

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SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
		Spillage Storage	vegetation Preserve topsoil	vegetation Preserve topsoil	Preserve topsoil Management of weeds	
7000	Concrete pavements etc	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	

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C3.4.3.3 PROVISION OF STRUCTURED TRAINING

CONTENTS

C3.4.3.3.1 SCOPE
C3.4.3.3.2 GENERIC TRAINING
C3.4.3.3.3 ENTREPRENEURIAL SKILLS TRAINING
C3.4.3.3.4 MEASUREMENT AND PAYMENT

C3.4.3.3 PROVISION OF STRUCTURED TRAINING

C3.4.3.3.1 SCOPE

This specification covers the requirements for the provision of structured training to be arranged by the contractor over the period of this contract.

C3.4.3.3.2 GENERIC TRAINING

C3.4.3.3.2.1 The contractor shall, from the commencement of the contract, implement a structured Progressive training programme.

C3.4.3.3.2.2 The generic training will inter alia comprise, but not be limited to the following subjects:

COURSE DESCRIPTION		ESTIMATED No. OF TRAINEES	ESTIMATEDDURATION (DAYS)
1	ROAD SAFETY FOR CONSTRUCTION WORKERS	……	
2	FIRST AIDER	……..	
3	CONCRETE HANDLING, PLACING AND FINISHING	……	
4	PIPE FITTING	……	

C3.4.3.3.2.3 Training shall be at or by an approved accredited organisation and shall be delivered by suitably qualified and experienced trainers.

C3.4.3.3.2.4 The tenderer shall provide with his tender full details of the structured training programme he intends to implement, which details shall include the following:

(a) The name of the training institution and programme
(b) The manner in which the training is to be delivered.
(c) The numbers and details of the trainers

Such details shall be entered on or attached to Form RDP 6 (E) included herein.

C3.4.3.3.2.5 The contractor shall be responsible for the provision of everything necessary for the delivery of the generic training programme, including the following:

(a) A suitable venue with sufficient furniture, lighting and power
(b) All necessary stationery consumables and study material
(c) Transport of the students (as necessary)

C3.4.3.3.2.6 Generic training courses shall commence within one month of possession of site and be completed before the end of the contract period.

C3.4.3.3.2.7 The contractor's training programme shall be subject to the approval of the engineer, and the contractor shall if so instructed by the engineer alter or amend the programme and course content if a need is identified once the contract commences.

C3.4.3.3.2.8 The contractor shall keep comprehensive records of the training given to each student and whenever required shall provide copies of such records to the engineer. At the successful completion of each course each student shall be issued with a certificate indicating the course contents as proof of attendance and completion.

In addition to the above, a monthly return shall be submitted by the contractor. An example of the form is illustrated in Part C5 of this document (form RDP 10 (E))

C3.4.3.3.3 ENTREPRENEURIAL SKILLS TRAINING

C3.4.3.3.3.1 Small contractors, subcontractors and the Project Steering Committee (PSC) will be entitled to receive a structured training programme, which will comprise both management skills as well as business development skills.

C3.4.3.3.3.2 The contractor shall closely monitor the performance of all small subcontractors in the execution of their contracts and shall identify all such subcontractors who, in his opinion, display the potential to benefit from structured training as may be provided for in the contract and where required by the engineer, shall make recommendations in this regard. The final list of candidates will be decided between the contractor and the engineer.

C3.4.3.3.3.3 The training will be delivered by trainers who are accredited by the Civil Engineering Training Scheme (CEITS) or other institutions recognised by the Department of Labour. Accredited training refers to both the trainers as well as to the training material.

C3.4.3.3.3.4 The contractor shall facilitate in the delivery thereof, by instructing and motivating the subcontractor regarding attendance and participation therein.

C3.4.3.3.3.5 The contractor shall further make all reasonable efforts to co-ordinate the programming of the subcontractor's work with that of the delivery of the structured training.

C3.4.3.3.3.6 The structured training will comprise out of the following as decided by the Employer:

COURSE DESCRIPTION	**ESTIMATED DURATION (DAYS)**
1. BASIC BUSINESS PRINCIPLES	To be determined
2. BASIC SUPERVISION	To be determined
3. RUNNING A BUSINESS	To be determined
4. LEGAL PRINCIPLES	To be determined
5. ACHIEVING STANDARDS	To be determined

C3.4.3.3.3.7 The contractor shall provide with his tender, full details of the structured training programme, which he intends to implement, which details shall include the following:

(a) The name of the training institution and programme
(b) The various aspects of each type of training comprised in the programme
(c) The manner in which the training is to be delivered
(d) The numbers and details of the trainers to be utilised.

Such details of the proposed entrepreneurial training programme shall be entered on or attached to form RDP 7 (E) of the forms to be completed by the tenderer.

C3.4.3.3.3.8 The contractor shall be responsible for the provision of everything necessary for the delivery of the entrepreneurial training programme, including the following:

(a) A suitably furnished venue (if required) with lighting and power.
(b) All necessary consumables, stationery and study material
(c) Transport of the subcontractors (as necessary)

C3.4.3.3.3.9 All entrepreneurial training shall take place within normal working hours.

C3.4.3.3.3.10 The contractor's training programme shall be subject to the approval of the engineer, and the contractor shall if so instructed by the engineer alter or amend the programme and course content if a need is identified once the contract commences.

C3.4.3.3.3.11 The contractor shall keep comprehensive records of the training given to each subcontractor and whenever required shall provide copies of such records to the engineer. At the successful completion of each course each subcontractor shall be issued with a certificate indicating the course contents as proof of attendance and completion.

I n addition to the above, a monthly return shall be submitted by the contractor. An example of the form to be used is illustrated in Part C5 of this document, (form RDP 11 (E)).

C3.4.3.3.4 MEASUREMENT AND PAYMENT

ITEM		**UNIT**
BE12.05	Provision for accredited training	
(a)	Generic skills	Provisional sum
(b)	Entrepreneurial skills	Provisional sum
(c)	Handling cost and profit in respect of sub-itemE12.05(a) and (b) above	percentage (%)
(d)	Training venue (only if required)	lump sum

The prime cost sums are provided to cover the actual costs (including wages) for attendance of accredited training courses as agreed with the engineer and shall be expended in accordance with the provisions of sub-clause 48(2) of the general conditions of contract. The tendered percentage in sub-item E4.1(c) is a percentage of the amount actually spent under sub-items E4.1(a) and (b) which shall include full compensation for the contractor's handling cost, profit, mentoring, record keeping, reporting and all other costs in connection therewith.

The lump sum tendered for E4.1(d) shall include full compensation for the provision of the training venue, for all necessary lighting, power, furniture, stationery, consumables and study material and for transportation of the students to and from the training venue. Payment of the lump sum will be made in two installments as follows:

(i) The first installment, 75% of the lump sum, will be paid after the contractor has met all his obligations regarding the provision of the training venue as specified.
(ii) The second and final installment, 25% of the lump sum, will be paid after the provision of all the accredit training as specified in the document.

C3.4.3.5 HIV/AIDS REQUIREMENTS

CONTENTS

SH 01 SCOPE
SH 02 DEFINITIONS AND ABBREVIATIONS
SH 03 HIV/AIDS EDUCATION AND TRAINING
SH 04 PROVIDING WORKERS WITH ACCESS TO CONDOMS
SH 05 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNCILLING
SH 06 MONITORING

C3.4.3.5 HIV/AIDS REQUIREMENTS

SH 01 SCOPE

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers

  Informing Workers of their rights with regard to HIV/AIDS in the workplace

- Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices

SH.02 DEFINITIONS AND ABBREVIATIONS

SH 02.01 DEFINITIONS

Worker: Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in total.

SH 02.02 ABBREVIATIONS

HIV	:	Human Immunodeficiency Virus
AIDS	:	Acquired Immune Deficiency Syndrome
STI	:	Sexually Transmitted Infection

SH 03 HIV/AIDS EDUCATION AND TRAINING
DISPLAYING OF PLASTIC LAMINATED POSTERS AND DISTRIBUTION OF INFORMATION BOOKLETS

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Public Works
The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's
Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover
Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds
The posters on display must always be intact, clear and readable
Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site

SH 04 PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain

condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health.
At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover.
Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.

SH 05 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers

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SH 06. MONITORING

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent

The attached SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent

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Witness: ……..

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C3.5 MANAGEMENT

C3.5.1 MANAGEMENT MEETINGS

The following meetings will be required as minimum for the management of the contract.

(a) Monthly client site meeting (using standard agenda for management control).
(b) Technical meetings as required for each phase of the work.
(c) Monthly safety meetings in terms of the OHS requirements.
(d) Weekly progress meetings

C3.5.2 QUALITY CONTROL

Contractor to supply details of quality plan and procedures. These shall include:

- Accommodation of traffic.
- Inspection and test plans.
- Approval process.
- Hold-points.
- Milestones.

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

PART C4: SITE INFORMATION

C4.1 SITE INFORMATION 218

C4.2 LOCALITY PLAN 219

C4.1 SITE INFORMATION

C4.1.1 Material site investigation

Please refer to the geotechnical investigations report attached.

C4.1.2 Working Drawings

Working drawings and other information will also be made available to the successful tenderer.

C4.2 LOCALITY PLAN

The project area (Weltevreden, Siyabuswa) falls under the jurisdiction of the Dr JS Moroka Local Municipality; the start and stop co-ordinates of the pipeline are as follows:

Start Co-ordinates **:** Latitude -25.115 & Longitude 28.987

End Co-ordinates **:** Latitude -25.086 & Longitude 29.010

PART C5: ANNEXURES

C5.1 PROFORMA DOCUMENTS.....C.215

C5.2 CONTRACT DRAWINGS.....C.249

C5.3 GEOTECHNICAL INVESTIGATIONS REPORT.....C.251

C5.1 PROFORMA DOCUMENTS

The following is a list of proforma documents and examples that are required to be completed by the successful Tenderer.

C5.1.1 EXAMPLE OF ABE DECLARATION AFFIDAVIT C.216

C5.1.2 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT C.224

C5.1.3 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT C.225

C5.1.4 FORM RDP 11(E) : GENERIC TRAINING REPORT C.226

C5.1.5 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT C.227

C5.1.6 FORM RDP 13(E) : ENGINEERING TRAINING REPORT C.228

C5.1.7 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT.....C.229

C5.1.1 EXAMPLE OF ABE DECLARATION AFFIDAVIT

(facsimiles will be provided by the Employer to be completed by ABEs)

1. Name of firm : ……
   Postal address : ……
   Telephone no. : ……Fax no ……
   Contact person : ……
   VAT registration no. : ……
2. Type of firm (tick as appropriate)
   - Partnership……..
   - One person business/sole trader……..
   - Close corporation: registration no……..
   - Date of registration……..
   - Company: registration no……..
   - Pty Ltd: registration no……..
3. Principal Business Activities :……
4. Service/work to be performed on this contract: ……
5. Participation in this contract
   - as a Sub-contractor Yes/No
   - in a Joint Venture Yes/No
   - with main contractor Yes/No
   - with a sub-contractor Yes/No
6. List all partners, proprietors and shareholders:

Name	ID. No.	Citizen of RSA Yes/No	PDI status Yes/No	%owned

7. List the last four contracts/assignments completed by your firm. If required, a separate sheet may be used and attached to this page. Reference may be called from the Employers of the projects listed.

PROJECT AND WORK PERFORMED	EMPLOYER (NAME, ADDRESS, TEL, FAX)	VALUE OF RANDS

Bidder:
Initial: Authorised signatory/ies: **1.** ……
2. ……..

DR. JSMLM:
Initial: DR. JSMLM……..

Witness: ……..

Notes to Tenderer:

Under column 1 state the assignment or contract (e.g. Contract XYZ0103): Construction of rural roads) and follow this with the work carried out (e.g. construction of pipe culverts).

Under column 2, if it was a sub-contract give the required details of the employer for the main contract and also of the Contractor who employed you.

Under column 3 give the value of the main contract (if any and if known) and also the value of the work carried out by you.

8. Declaration

I, ... , being duly authorised to sign on behalf of the firm, affirm that the PDI equity in this business is as stated above and that the information furnished is true and correct.

Signature
Name (print)
Date
Signed on behalf of (print name)
Address

Telephone no.

Commissioner of Oath
Date

Note: In the case of Company a certificate of authority for signatory must be provided.

EXAMPLE

C5.1.2 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT

CONTRACT NO.

REPORT ON EMPLOYMENT ON THE ABOVE CONTRACT FOR THE MONTH OF										2013
NAME OF COMPANY OR FIRM AND VENDOR NUMBER	AGE OF COMPANY OR FIRM	EMPLOYMENT GROUP	EMPLOYMENT							
			MALE	FEMALE	TOTAL	PERSON/HOURS			VALUE (RAND)	
						MALE	FEMALE	TOTAL	MALE	FEMALE
		Unskilled (US)								
		Semi-Skilled (SS)								
		Skilled (SK)								
		Lab.Tech (LT)								
		Surveyor (SUR)								
		Eng. Tech (ET)								
		Engineer (EN)								
		Admin (AD)								
		Others (o)								
								TOTALS		
								GRAND TOTALS		

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

C5.1.3 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT

CONTRACT NO.

REPORT ON THE EMPLOYMENT OF SUPERVISORY STAFF ON THE ABOVE CONTRACT FOR THE MONTH OF _____ 2013				
POSITION HELD	**NAME**	**PDI**	**NON-PDI**	**TOTAL**
Site Agent				
Senior Materials Technician				
Senior Surveyor				
Earthworks Surveyor				
Compaction Supervisor				
Surfacing Supervisor				
Structures Supervisor				
Others: - List				
	TOTALS			

C5.1.4 FORM RDP 11(E) : GENERIC TRAINING REPORT

CONTRACT NO.

REPORT ON GENERIC TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF 2013											
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING	
					NUMBER ATTENDING		CERTIFICATES AWARDED			
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
						TOTAL				
						TOTAL ALL TRAINEES				

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

EXAMPLE

C5.1.5 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT

CONTRACT NO.

REPORT ON ENTERPRENEURIAL TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF										2013
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING	
					NUMBER ATTENDING		CERTIFICATES AWARDED			
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

EXAMPLE

C5.1.6 FORM RDP 13(E) : ENGINEERING TRAINING REPORT

CONTRACT NO.

REPORT ON ENGINEERING TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF										2013
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE – IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING	
					NUMBER ATTENDING		CERTIFICATES AWARDED			
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
								TOTAL		
								TOTAL ALL TRAINEES		

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

EXAMPLE

C5.1.7 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT

CONTRACT NO.

REPORT ON COMMUNITY LIAISON MEETINGS ON THE ABOVE CONTRACT FOR THE MONTH OF						
DATE OF MEETING	COMPANY/FIRM OR ORGANISATION RESPONSIBLE FOR ARRANGING THE MEETING		NUMBER OF COMMUNITY MEMBERS PRESENT	DURATION OF MEETING (hours)	TOTAL COST OF THE MEETING	COMMENTS
	NAME	VENDOR NO.				

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……

DR. JSMLM:
Initial: DR. JSMLM……..

C5.2 CONTRACT DRAWINGS

The following is a list of contract drawings included in the document

DRAWING NO.	REV	DRAWING DESCRIPTION

APPENDIX B: TYPES OF INFRASTRUCTURE WHICH ARE SUITABLE FOR CONSTRUCTION USING LABOUR INTENSIVE METHODS

B.1 Roads

The following operations may be carried out using labour intensive methods:

1. Site clearance

2 Layer work construction including loading, hauling and spreading material.
Note: All compaction should be done using conventional compaction equipment and where necessary the use of heavy machinery may be employed to loosen material for excavation by hand. Where significant use of blasting is indicated, then the Works are probably not suitable for labour-intensive methods.

3 Where high categories of roads are to be constructed, the following operations may be included:
- Macadam base course either dry, water bound or emulsion bound; foamed bitumen gravel; emulsion treated gravel; or slurry bound or composite macadams.
- Application of bitumen bound surface treatment (cold) including spreading and dragging of chips.
- Slurry treatments to existing or new road surfaces.
- In situ concrete roads.
- Segmented block paved roads.
- Cast in-situ block pavements (hysen-cells);
- Road markings.

4 Fencing.

5 Erection of road signs.
6 Grass maintenance.
7 Road reserve maintenance.
8 Rubble masonry bridges, culverts and retaining walls

B.2 Stormwater

The following operations may be constructed using labour-intensive construction methods:

1. Gabions and Reno mattresses.
2. Small diameter pre-cast concrete elements (pipes and arches).
3. Grassed or lined water channels

B.3 Sewers

The following operations may be constructed using labour-intensive construction methods:

1. Sewer manholes either in brickwork or using specially manufactured pre-cast manhole rings (individual mass less than 320kg).
2. Sewer manhole covers and lids using specially designed pre-cast units.
3. Maturation or flocculation ponds with least dimension not exceeding 100m.

B.4 Water

The following operations may be constructed using labour-intensive construction methods:

1. Laying of water pipelines, fittings and house connections in all materials (including steel) where the mass of individual pipe lengths does not exceed 320kg.
2. Construction of ferro-cement reservoirs.
3. Excavation for membrane lined and floating roof reservoirs.
4. Construction of small masonry reservoirs.
5. Spring and well protection measures

B.4 Haul of Material

Where the haul of any material exceeds 200m, consideration should be given to the use of local resources for transporting material. This includes the use of animal-drawn vehicles and small trailer combinations utilising locally sourced tractors. All loading and off-loading can be done by hand.

B.5 Electricity

The following operations may be constructed using labour-intensive methods:

1. Excavation of trenches for reticulation of all voltages.
2. Excavation for and erection of poles for overhead lines.
3. Installation of all electricity cables (joints and terminations by qualified persons).

B.6 Houses, schools and clinics

Housing is seen as labour-intensive, but the number of local people that could be employed may be enhanced by one or more of the following:

1. Manufacture of masonry elements on site.
2. Excavation of all foundation trenches by hand.
3. Manufacture of roof trusses on site.
4. Adoption of the BESA System

Note: 1) In the BESA system walls are constructed using bitumen emulsion stabilised adobe blocks and mortar. External and internal wall surfaces can be finished in a variety of ways using a mortar mix or a cement/sand plaster.

2) The BESA Building System is the subject of an open certificate issued by Agreement South Africa. The concept of an open certificate is that the technology is not the intellectual property of any company or individual and the information is available to anyone who wishes to use it. Any competent person, company or institution who wishes to use this system and is capable of carrying out this work in accordance with the terms and conditions of certification and undertakes to do so, may apply to Agreement South Africa to be registered as a holder of this open certificate.

GENERAL CONDITIONS OF CONTRACT

THE NATIONAL TREASURY

Republic of South Africa

GOVERNMENT PROCUREMENT:

GENERAL CONDITIONS OF CONTRACT

July 2010

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

GENERAL CONDITIONS OF CONTRACT
July 2010

NOTES

The purpose of this document is

(i) Draw special attention to certain general applicable conditions government bids, contracts and

(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and

- The General Conditions of Contract will form all bid and may not be

- Special Conditions of Contract (SCC) relevant to a bid should be compiled separately for every bid (if (applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions

a) TABLE OF CLAUSES

1. Definitions
2. Application
3. General
4. Standards
5. Use of contract documents and information; inspection
6. Patent rights
7. Performance security
8. Inspections, tests and analysis
9. Packing
10. Delivery and documents
11. Insurance
12. Transportation
13. Incidental services
14. Spare parts
15. Warranty
16. Payment
17. Prices
18. Contract amendments
19. Assignment
20. Subcontracts
21. Delays in the supplier's performance
22. Penalties
23. Termination for default
24. Dumping and countervailing duties
25. Force Majeure
26. Termination for insolvency
27. Settlement of disputes
28. Limitation of liability
29. Governing language
30. Applicable law
31. Notices
32. Taxes and duties
33. National Industrial Participation Programme (NIPP)
34. Prohibition of restrictive practices

General Conditions of Contract

1. Definitions

1. The following terms shall be interpreted as indicated:

1.1 "Closing time" means the date and hour specified in the bidding documents for the receipt of bids.

1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 "Country of origin" means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 "Day" means calendar day.

1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.

1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.

1.10 **"**Delivery into consignees store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receiptis obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 ”Force majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non- competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 “GCC” means the General Conditions of Contract.

1.15 “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17 “Local content” means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18 “Manufacture” means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 “Order” means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 “Project site,” where applicable, means the place indicated in bidding documents.

1.21 “Purchaser” means the organization purchasing the goods.

1.22 “Republic” means the Republic of South Africa.

1.23 “SCC” means the Special Conditions of Contract.

1.24 “Services” means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 “Written” or “in writing” means handwritten in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated inthe bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications

5. Use of Contrat documents and informatio n; inspection.

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 he supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

7. Performance

7.1 Within thirty (30) days of receipt of the notification of contract award, **security** the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or

(b) a cashier's or certified cheque

7.3 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies and services which are referred to in clauses 8.2and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing

The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate

- the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.1 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and Documents

10.1 Delivery of the goods shall be made by the supplier in accordance with

the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC

13. Incidental

13.1 The supplier may be required to provide any or all of the following **services** services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;

(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;

(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and

(b) in the event of termination of production of the spare parts:

(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing inthe country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within theperiod specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid

validity extension, as the case may be

18. Contract amendments

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.

21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without canceling the contract, be entitled to purchase supplies of a similar quality and upto the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buysuch goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the Supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer / Authority will, at the discretion of the Accounting Officer / Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first- mentioned person, and with which enterprise or person the first- mentioned person, is or was in the opinion of the Accounting Officer / Authority actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

(i) the name and address of the supplier and / or person restricted by the purchaser;
(ii) the date of commencement of the restriction
(iii) the period of restriction; and
(iv) (iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sectorfor a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or antidumping or countervailing duties are imposed, or the amount of a provisional payment or anti- dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longerrequired or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall ondemand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render

in terms of the contract or anyother contract or any other amount which may be due to him

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent thathis delay in performance or other failure to perform his obligationsunder the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptlynotify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by theforce majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written **for insolvency** notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules f procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
b) the purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice

Bidder:
Initial: Authorised signatory/ies: **1.** ……

2. ……..

Witness: ……..

DR. JSMLM:
Initial: DR. JSMLM……..

32. National Industrial Participation (NIP) Programme

32.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

33. Prohibition of Restrictive practices

33.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder (s) is / are or a contractor(s) was / were involved in collusive bidding (or bid rigging).

34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998

34.3 If a bidder(s) or contractor(s), has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

C5.2 TENDER DRAWINGS