

O. R. TAMBO DISTRICT MUNICIPALITY



O.R. TAMBO
DISTRICT MUNICIPALITY

CONTRACT NO.: MIS 271 056 C

DESCRIPTION: LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU
BULK WATER INFRASTRUCTURE AUGMENTATION

CONTRACT 3

OCTOBER 2022

NAME OF TENDERER:

TENDER AMOUNT:

CSD SUPPLIER NUMBER:

SARS TAX COMPLIANCE STATUS PIN:

CLOSING DATE & TIME: **14 DECEMBER 2022 @ 12H00**

Prepared for:

The Municipal Manager

O. R. Tambo District Municipality
Private Bag x 6043
MTHATHA
5100
Tel. No. (047) 501 6400

Prepared by:

The Engineering Services Manager

O. R. Tambo District Municipality
Private Bag X6043
MTHATHA
5100
Tel. No. (047) 501 6425

CHECK-LIST FOR TENDER SUBMISSION

The Tenderer is to indicate in the check-boxes provided that he has completed the required section of the tender document. Completion of this checklist will assist the Tenderer in ensuring that he has attended to all the required items for submission with this tender.

Page	Description	Completed		For office use		
		yes	no	yes	no	Comments
Cover	Name of tenderer					
	Contact Details					
	Tender Sum					
RD.5	Compulsory Site Inspection Certificate					
RD.6	Relevant Experience					
RD.9	Curriculum Vitae of Key Personnel					
RD.15	Schedule of Plant and Equipment					
RD.16	Schedule of Sources of Supply of Material					
RD.17	Proposed Specialist Sub-Contractors					
RD.18	Alterations by Tenderer					
RD.19	Authority of Signatory					
RD.21	Contractor's Health and Safety Declaration					
RD.23	Contractor's Certificate of Registration with CIDB					
RD.24	Contractor's COID Registration Details					
RD.25	Tax Clearance Certificate					
RD.26	Tenderers Financial Standing					
RD.27	Form of Intent to Provide a Performance Guarantee					
RD.28	VAT Registration Certificate					
RD.29	Company Registration Certificate and Shareholding Details					

Page	Description	Completed		For office use		
		yes	no	yes	no	Comments
RD.30	Certified Copies of Directors'/Members' Identity Documents					
RD.31	Preferential Procurement Data					
RD.36	Preliminary Programme and Cashflow					
RD.37	Compulsory Enterprise Questionnaire					
RD.40	Declaration of Bidders' Past Supply Chain Management Practices					
RD.42	Declaration of Interest					
RD.44	Joint Venture Agreement					
RD.45	Current Commitments Schedule					
RD.46	Certificate of Independent Bid Determination					
RD.49	Good Standing with Municipal Accounts					
RD.50	Declaration Certificate for Local Production and Content					
RD.54	Method Statements					
RD.55	Record of Addenda to Tender Document					
RD.56	Declaration for Procurement above R10 Million					
RD.58	Database Registration					
RD.59	Procurement Form					
C.2	Form of Offer					
C.16	Contract Data (Part 2)					
PD.5	Bill of Quantities					

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Volumes		Contents			
Number	Description	Number	Heading	Page Colour	Page No
Volume 1	Tender	Tendering Procedures			
		T1.1	Tender Notice and Invitation to Tender	White	TP.1
		T1.2	Tender Data	Pink	TP.7
		Returnable Documents			
		T2.1	List of Returnable Documents	Yellow	RD.2
		T.2.2	Returnable Schedules	Yellow	RD.3
	Contract	Part 1: Agreement and Contract Data			
		C1.1	Form of Offer and Acceptance	Yellow	C.2
		C1.2	Contract Data	Yellow	C.6
		C1.3	Forms of Securities	White	F.1
		C1.4	Adjudicators Agreement	White	F.3
		C1.5	Occupational Health and Safety Agreement	White	F.5
		C1.6	Transfer of Rights (Proforma)	White	F.9
		C1.7	Supply Chain Management Policy	White	F.11
		Part 2: Pricing Data			
		C2.1	Pricing Instructions	Yellow	PD.1
		C2.2	Bill of Quantities	Yellow	PD.5
		Part 3: Scope of Work			
		C3.1	Description of the Works	Blue	SW.3
		C3.2	Engineering	Blue	SW.5
		C3.3	Procurement	Blue	SW.7
		C3.4	Construction	Blue	SW.8
		C3.5	Management	Blue	SW.14
C3.6	Particular Specifications	Blue	SW.29		
C3.7	Variations and Additions to SABS 1200 Standardized Specifications and Particular Specifications	Blue	SW.101		
C3.8	Generic Labour-Intensive Specification	Blue	SW.148		
Part 4: Site Information					
C4.1	Conditions on Site	Green	SI.2		
Part 5: Drawings					



**O.R. TAMBO
DISTRICT MUNICIPALITY**

VOLUME 1

TENDER

T1. TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER



LIBODE SECONDARY BULK: CONSTRUCTION OF BULK PIPELINE FROM MAGCAKINI TO MAMBETHU. CONTRACT 3

Tenderers are hereby invited from experienced and suitably qualified service providers for the construction of the Magcakeni to Mambethu Water Secondary Bulk Infrastructure Augmentation, located in the O. R. Tambo District Municipality of Eastern Cape.

Contract Number	Name and Description	CIDB	Contract period
MIS 271 056 C	Libode Secondary Bulk: Construction of Bulk Pipeline from Magcakeni to Mambethu	6CEPE / 7CE	08 months

A compulsory site visit and clarification meeting will be conducted by the Employer on the 23rd of November 2022 at 10H00 at the Nyandeni Local Municipality Offices- Libode.

THE MUNICIPALITY WILL NOT REPEAT ANY MATTERS ALREADY COVERED IN THE COMPULSORY BRIEFING MEETING TO THE BIDDERS WHO ARRIVE MORE THAN 10 MINUTES LATE TO THE MEETING, NOR WILL IT ALLOW SUCH BIDDERS TO COMPLETE THE ATTENDANCE REGISTER. ANY BID RECEIVED FROM A BIDDER WHO DID NOT ATTEND THE BRIEFING MEETING AND SIGN THE ATTENDANCE REGISTER WILL NOT BE CONSIDERED AND WILL BE RETURNED TO THE BIDDER UNOPENED.

Bid documents should be downloaded on the e-Tender website (www.etenders.gov.za) alternatively on the OR Tambo website (www.ortambodm.gov.za) at no cost.

Bids must be completed tenders in black ink, enclosed in a sealed envelope and clearly marked with the **“Project Name and Project Number”** and must be placed in the tender box, Ground Floor, O. R. Tambo District Municipality Building, Nelson Mandela Drive, Myezo Park, Mthatha, Eastern Cape, not later than **Wednesday, 14 December 2022**.

It must be expressly understood that the Municipality does not accept no responsibility for ensuring that bid submissions sent by courier or post, or delivered in any other way, are deposited in the Tender Box. It is therefore preferable for the bidder to ensure that its bid submission is placed in the Tender Box by its own staff or representative(s).

Tender submissions will be opened in public at {Insert time, day & date of closure}. Bids will be opened at the Supply Chain Management Unit, Ground Floor, O. R. Tambo House, Myezo, Mthatha. The Municipality reserves the right not to accept the only or lowest priced tender or any tender at all, or to accept the whole or part of any tender.

RETURNABLE DOCUMENTS TO BE SUBMITTED WITH BID:

- Copy of business registration documents, as issued by CIPC.
- Certified copy of identity documents of directors/ shareholders/ partners / members, as the case may be.
- Original Valid Tax Clearance Certificate or a Confirmation of Tax Validity with the pin issued by SARS.
- Original or certified copy of BBBEE certificate; or sworn affidavit confirming annual total revenue and level of black
- Proof of latest municipal rates and taxes statement **of the bidder** indicating that rates and taxes are not in arrears for more than 3 months.

- Proof of latest municipal rates and taxes statement of each **company director** indicating that rates and taxes are not in arrears for more than 3 months.
- Proof of latest municipal water and sanitation charges statement **of the bidder** indicating that rates and taxes are not in arrears for more than 3 months for bidders who reside in the O. R. Tambo District Municipality area.
- Proof of latest municipal water and sanitation charges statement of each **company director** indicating that rates and taxes are not in arrears for more than 3 months for bidders who reside in the O. R. Tambo District Municipality area.
- Confirmation of address from a ward councillor where the bidder and company directors operate and reside in a peri-urban area where no rates and taxes and service charges are not billed.
- A copy of a valid lease agreement where the bidder does not own the property they are operating from.

NB: CERTIFICATION OF DOCUMENTS MUST NOT BE MORE THAN SIX (6) MONTHS FROM DATE CERTIFIED BY COMMISSIONER OF OATHS.

THE BID WILL BE REJECTED IF THE BIDDER FAILS TO:

- Complete fully the bid document or to provide the information requested, or to sign the bid at the appropriate spaces provided or next to errors.
- Fill and properly sign the form of offer.
- Attach proof of registration with CSD.
- Attach joint Venture Agreement or Consortium Agreement signed and initialled on each page (if applicable).
- Attach audited annual financial statements of the bidding entity (for projects in excess of R10 million);
- Attach unaudited annual financial statements for close corporations, as required by the Close Corporations Act (if applicable);

PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT NO 5, 2000 (PPPFA) POINTS WILL BE AWARDED AS FOLLOWS: -

The bids will be evaluated in two stages, namely:

- Stage 1 - Functionality
- Stage 2 - Price and BBBEE Points

Item	Weight
Stage 1 of Evaluation-Functionality	100
• Company Experience with respect to similar projects	30
• Experience of key staff assigned to the contract	30
• Preliminary Quality Assurance Plan	20
• Availability of key plant and equipment	10
• Preliminary Programme	10
Stage 2 of Evaluation- Price & B-BBEE	100
• B-BBEE	20
• Price	80

Tenders may only be submitted on tender documentation issued. No late, faxed, e-mailed, or other form of tender will be accepted.

Technical enquiries: Mr N. Noto 047 501 6400 / 6425, or email nkosiyabon@ortambodm.gov.za All **Supply Chain Management enquiries** may be directed to Mr. S. Hopa, telephone number 047 501 6449 or email: sakhiwoh@ortambodm.org.za during office hours: Monday to Friday 08H00-13H00 and 13H30-16H30.

Tenders will be evaluated in terms of the Supply Chain Management policy of the O. R. Tambo District Municipality and the lowest tender will not necessarily be accepted and the right to accept the whole or part of any tender or not to consider any tender not suitably endorsed is fully reserved by the O. R. Tambo District Municipality. A 80/20 point system shall apply where 80 points is for the price and 20 points is in terms of B-BBEE status level of contributor as follows:

B-BBEE status level of contributor	Number of points
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

Joint Ventures 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 B-BBEE scorecard is prepared for every separate tender.

S. Mkhize
Municipal Manager

PART A INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF O. R. TAMBO DISTRICT MUNICIPALITY			
BID NUMBER:	MIS 271 056 C	CLOSING DATE:	14 DECEMBER 2022
DESCRIPTION:	LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU BULK WATER INFRASTRUCTURE AUGMENTATION		
		CLOSING TIME:	12H00

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

TENDER BOX, GROUND FLOOR, O. R. TAMBO DISTRICT MUNICIPALITY BUILDING

NELSON MANDELA DRIVE

MYEZO PARK

MTHATHA

EASTERN CAPE

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:	CSD No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	<input type="checkbox"/> Yes <input type="checkbox"/> No	B-BBEE STATUS LEVEL SWORN AFFIDAVIT	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS OFFERED		TOTAL BID PRICE	R
SIGNATURE OF BIDDER	DATE	
CAPACITY UNDER WHICH THIS BID IS SIGNED			

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	SCM DEPARTMENT	CONTACT PERSON	MR. N NOTO
CONTACT PERSON	MR. SAKHIWO HOPA	TELEPHONE NUMBER	047 501 6425
TELEPHONE NUMBER	047 501 6557	FACSIMILE NUMBER	N/A
FACSIMILE NUMBER	N/A	E-MAIL ADDRESS	nkosiyabon@ortambodm.gov.za
E-MAIL ADDRESS	sakhiwoh@ortambodm.org.za		

PART B

TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

- 1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
- 1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED).**
- 1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

- 2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.
- 2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.
- 2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
- 2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

- 3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? YES NO
- 3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA? YES NO
- 3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? YES NO
- 3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? YES NO
- 3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? YES NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

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

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

T1.2 TENDER DATA

The conditions of tender are the **Standard Conditions of Tender** as contained in Annexure F of the 10 July 2015 edition of the **CIDB Standard for Uniformity in Construction Procurement**. The Standard Conditions of Tender Procurements make several references to the Tender Data for details that apply specifically to the Tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of Tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

Please note that the word “Client” is used in this document and referred to as “Employer” in the Standard Conditions of Tender document.

Clause Number	
F.1	General
F.1.1	The Client is: O. R. Tambo District Municipality Private Bag X6043 Mthatha, 5099
F.1.2	The Tender documents issued by the Client comprise: Tender T1.1 Tender Notice and invitation to tender T1.2 Tender Data T2.1 List of Returnable Documents T2.2 Returnable Documents for tender evaluation purposes T2.3 Returnable Documents to be incorporated into the contract
	Contract Part 1: Agreements and Contract data C1.1 Form of Offer and Acceptance C1.2 Contract Data C1.3 Form of Guarantee C1.4 Adjudicators Agreement C1.5 Agreement in Terms of Section 37(2) of the Occupational Health and Safety Act No 85 of 1993 C1.6 Transfer of Rights (Proforma) C1.7 Supply Chain Management Policy Part 2: Pricing Data C2.1 Pricing Instructions C2.2 Bill of Quantities Part 3: Scope of Work C3.1 Description of the Works C3.2 Engineering C3.3 Procurement C3.4 Construction C3.5 Management C3.6 Particular Specifications C3.7 Variations and Additions to SABS 1200 Standardized Specifications and Particular Specifications C3.8 Generic Labour-Intensive Specification Part 4: Site Information C4.1 Site Information Part 5: Additional Relevant Documents Part 6: Contract Drawings

F1.3	Interpretation 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 tender conditions.		
F.1.4	Communication: Communication with all stakeholders shall be through the O. R. Tambo Municipality's PMU Manager. Communications shall be in the English language. The Employer shall not take any responsibility for non-receipt of communications from or by a tenderer.		
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> The Employer is O. R. Tambo District Municipality Private Bag x 6043 Mthatha 5099 Tel: (047) 501 6425 Email: nkosiyabon@ortambodm.gov.za Contact person: Mr. N. Noto </td> <td style="width: 50%; vertical-align: top;"> The employer's agent is: Lead Consultant Umpisi Consulting Engineers cc Suite 108 iL Palazzo Building 5 Zenith Drive, Umhlanga Ridge Durban, 4319 Contact Person : Mr S. Sithole Sub-Consultant GIBB 36 Stanford Terrace Mthatha, 5099 Contact Person : Ms A. Dabula </td> </tr> </table>	The Employer is O. R. Tambo District Municipality Private Bag x 6043 Mthatha 5099 Tel: (047) 501 6425 Email: nkosiyabon@ortambodm.gov.za Contact person: Mr. N. Noto	The employer's agent is: Lead Consultant Umpisi Consulting Engineers cc Suite 108 iL Palazzo Building 5 Zenith Drive, Umhlanga Ridge Durban, 4319 Contact Person : Mr S. Sithole Sub-Consultant GIBB 36 Stanford Terrace Mthatha, 5099 Contact Person : Ms A. Dabula
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F.1.5	The employer's right to accept or reject any tender offer		
F.1.5.1	Reject or accept 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 a cancellation and rejection, but will give written reasons for such action upon written request to do so.		
F.1.6	Procurement procedures		
F.1.6.1	A contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.		
F.2	Tenderer's obligations		
F.2.1.1	Eligibility CIDB registration and grading: Only tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 6CEPE/7CE or Higher of construction work, are eligible to submit tenders. Only those Tenderers who satisfy the following eligibility criteria are eligible to submit tenders: (a) the Tenderer submits an original valid Tax Clearance Certificate issued by the South African Revenue Services; (b) Tenderers must be a minimum 3 level B-BBEE status contributor; (d) The tenderer has purchased the tender document and has attended the Compulsory Briefing Session. (e) The tenderer has completed and signed the Form of Offer; (f) the Tenderer submits a letter of intent from an approved insurer undertaking to provide the Performance Guarantee to the format included in Part C1.3 of this procurement document; (g) The Tenderer has registered on the Central Supplier Database; (h) The Tenderer and its own directors is not in arrears for more than 30 days with municipal rates and taxes and municipal service charges (Water and Sanitation). The latest municipal account is to be attached. (i) the Tenderer and / or any of its directors / shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; (i) The Tenderer has not: (i) abused the Employer's Supply Chain Management System; or		

	<p>(ii) failed to perform on any previous contract and has been given a written notice to this effect;</p> <p>(j) The Tenderer has completed the Declaration of Interest and the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state are permitted to submit tenders or participate in the contract;</p> <p>(k) All Sub Contractors shall not be a subsidiary of the main Contractor, nor shall they share the same Directors.</p> <p>(l) Only those tenderers who 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 tenders.</p> <p>(m) The tenderer submitting the tender shall not be insolvent, in receivership, bankrupt or being wound up, have their affairs administered by a court or judicial officer, have suspended their business activities, or be subject to legal proceedings;</p> <p>(n) Joint Ventures are eligible to submit tenders provided that:</p> <p>(i) every member of the joint venture is registered with the CIDB;</p> <p>(ii) the lead partner has a Contractor grading designation in the 7CE class of construction work;</p> <p>(iii) the combined Contractor grading 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 7CE class of construction work;</p> <p>(iv) when the joint venture is dissolved, the Lead Partner will remain liable in terms of the contract including latent defects. The Lead Partner shall be nominated in the returnable document and shall have at least a 7CE classification. The Lead Member accepts all liability in terms of the Contract and that this liability will continue for 10 years, after Completion of the contract.</p> <p>(v) Included in their tender is a letter from each of the proposed joint venture members stating their undertaking that in the event of the joint venture tender being successful, the said members will enter into a joint venture agreement, which shall be based on and comply with the CIDB Sample Joint Venture Agreement.</p>	
F.2.1.2	<p>CIDB Grading The required CIDB grading for this project is 6CE PE/ 7CE or Higher.</p>	
F.2.2	<p>Cost of tendering Accept that the Employer will not compensate the tenderers 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.</p>	
F.2.3	<p>Check documents Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.</p>	
F.2.4	<p>Confidentiality and copyright 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.</p>	
F.2.5	<p>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.</p>	
F2.6	<p>Acknowledge Addenda Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension of the closing time stated in the tender data, in order to take the addenda into account.</p>	
F.2.7	<p>The arrangements for a compulsory clarification meeting are:</p>	
	<p>Date: Wednesday, 23 November 2022 Starting time: 10h00</p>	<p>Location: Nyandeni Local Municipality Offices, Libode Municipal Offices Libode</p>

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.
F2.10	Pricing the tender
F.2.10.1	Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.
F.2.10.2	Show VAT payable by the employer separately as an addition to the tendered total of the prices.
F.2.10.3	Provide rates and prices that are fixed for the duration of the Contract, and not subject to adjustment except as provided for in the conditions of contract identified in the Contract data.
F.2.10.4	State the rates and prices in South African Rand
F2.11	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 Alternative offers may be submitted 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.2.13.5	The Client's address for delivery of Tender offers and identification details to be shown on each Tender offer package are: Location of Tender box: Tender Box, Ground Floor, O. R. Tambo District Municipality Building, Nelson Mandela Drive, Myezo Park, Mthatha, Eastern Cape. Physical address: O. R. Tambo House, Nelson Mandela Drive, Mthatha
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 The closing times for submission of Tenders are 12H00pm Wednesday, 14 December 2022.
F.2.15	Telephonic, telegraphic, telex, facsimile or e-mailed Bid offers will not be accepted.
F.2.16	Tender offer validity The Tender offer validity period is 90 Days as stated in the tender data.
F.2.17	Clarification of tender offer after submission The tenderer shall 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.
F.2.18	Provide other material The tenderer shall, when requested by the Employer to do so, 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.
F2.20	Submit securities, bonds, policies Submit to the employer before formation of the contract, certificates of insurance required in terms of the conditions of contract identified in the contract data.
F.2.23	The tenderer is required to submit with his tender: (1) a valid Tax Verification Pin issued by the South African Revenue Services; and (2) Certified copy of the original of all the Companies / CC Registration documents. (3) Joint Venture Agreement where applicable in CIDB format (signed and initialed on each page). (4) Proof of registration with CIDB

	(5) Certified copies of the original green bar-coded ID copies of Members of the companies.
F.3	The employer's undertakings
F.3.1	Respond to requests from the tenderer
F.3.1.1	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.3.4	Opening of tender submissions
F.3.4.1	The employer shall open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.
F.3.4.2	Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.
F.3.4.3	The Client shall not be obliged to make available the record outlined in F.3.4.2 to any tenderer who fail to attend the tender opening.
F.3.6	Non-disclosure The client shall 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.
F3.9	Arithmetical errors, omissions and discrepancies
F.3.9.1	Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.
F.3.9.2	Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for: a) the gross misplacement of the decimal point in any unit rate; b) omissions made in completing the pricing schedule or bills of quantities; or c) arithmetic errors in: i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or ii) The summation of the prices.
F.3.9.3	Notify the tenderer of all errors or omissions that are identified in the tender offer and invite the tenderer to either confirm the tender offer as tendered or accept the corrected total of prices.
F.3.9.4	Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows: a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected. b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.
F.3.10	Clarification of a tender offer Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F3.11

Evaluation of tender offers

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

The procedure for evaluation of responsive tender offers will be method 2 of table F.1 of SANS 294: 2004. Financial offer & Preferences. The bid will be awarded to the bidder who has scored the highest points for price and preferences combined **BUT** the prerequisite will be to obtain at least **60 points** for quality (functionality), which will be explained in Stage 1 below.

Nevertheless, O. R. Tambo District Municipality retains the right to accept any bid.

C. First stage in evaluation: Compliance with Bid Rules and other Requirements

The bids will be checked to ensure that they comply with the bid rules and all other requirements of the project document. In particular, the following documentation must be completed and/or included within the bid.

- The form of Offer and Acceptance
- Audited financial statements for any tender price over R10million
- Certified company registration documents and ID of members
- Form C: Compulsory Enterprise Questionnaire
- Form D: Certificate of Authority for Signature
- Form E: Amendments, Qualifications and Alternatives
- Form H: Certificate of Good Standing
- Form I: Relevant experience
- Form J: Details of key staff and CVs
- Form M: Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2017

Note:

- All information supporting the above forms such as Curricula Vitae of staff who will work on the project and their functions, details of ownership, relevant experience etc.
- Addenda issued during the bid period, if any.
- The pricing schedule

Failure to supply the required information will compromise the bid

D. Next Stage in Evaluation: Quality / Functionality; Price & BBBEE Status Level

The next state in the evaluation process will consist of two stages, as follows:

STAGE 1: FUNCTIONALITY/QUALITY EVALUATION

ITEM	WEIGHT
Functionality (see detailed criteria below)	100
• Experience with respect to similar projects	30
• Qualifications and Experience of key staff assigned to the contract	30
• Preliminary Quality Assurance Plan	20
• Availability of key plant and equipment	10
• Preliminary Programme	10

Only bidders who score **60 points or more** on stage 1 will be evaluated further and therefore eligible for award.

The maximum score for functionality shall be **100**, distributed as follows:

Tender functionality / quality claimed		
	Category of Quality / Functionality	Maximum tender evaluation points provided
B1.1	Experience on similar projects	30
	Experience on similar projects completed within the last five (5) years: Proven experience in the construction of Water Supply pipelines, concrete reservoirs etc. or Waterborne Sewer pipelines contracts. Copies of Certificate of Completion MUST be submitted with the bid. No points will be awarded where Certificates of Completion have not been submitted with the Bid. If the value of completed project is not reflected on the certificate, provide contractor's appointment or letter from the client with values.	30
	The Contractor has successfully completed at least Four (4) projects that satisfies the sub-criteria and provided evidence whose total sum of a value of R70 Million .	30
	The Contractor has successfully completed at least Three (3) projects that satisfies the sub-criteria and provided evidence whose total sum of a value of R60 Million .	20
	The Contractor has successfully completed at least Two (2) projects that satisfies the sub-criteria and provided evidence whose total sum of a value of R50 Million .	10
	Contractor failed to provide evidence of experience.	0
B1.2	Qualifications and Experience of key personnel (NB no key personnel member may be assigned more than one duty on the Contract, i.e. different personnel must be assigned for each of the following key positions) Contracts Manager = Minimum ND Civil Engineering/ NQF level 6, Site Agent = Minimum N6 Civil Engineering and Foreman = Minimum Grade 12/ N3 Civil Engineering/ Plumbing. Bidders must submit CV's/Resume and contactable references.	30
	Contracts Manager, Site Agent, Foreman	
	Favourable previous experience in the Civil Engineering field with a minimum of 5 years; Contracts Manager = 12 points, 3-4 years = 10 points & 1-2 years = 8 points.	12
	Favourable previous experience in the Civil Engineering field with a minimum of 5 years; Site Agent = 10 points, 3-4 years = 8 points & 1-2 years = 6 points.	10
	Favourable previous experience in the Civil Engineering field with a minimum of 5 years; Foreman = 8 points, 3-4 years = 6 points & 1-2 years = 4 points.	8
	Contractor failed to provide evidence of qualification and experience.	0
B1.3	Preliminary Quality Assurance Plan must outline processes, procedures and associated resources, applied by whom and when to ensure sufficient quality Control Procedures are in place to meet the requirements and manage risks and what contribution can be made regarding value management. Particular attention in the plan must be given to Execution, Testing and Commissioning	20
	The Quality Assurance Plan specifies important issues approach in an innovative and efficient way, indicating that the Bidder has outstanding knowledge of state-of-the-art, Practical and Coherent Systems and approaches. The approach provides detailed ways to improve the	20

	project outcomes.	
	Bidder failed to provide a Quality Assurance Plan.	0
B1.4	Availability of key machinery and equipment (Points will only be awarded for the mentioned machinery proof of registration with traffic authority must be submitted and to include the current license disc. Note irrelevant machinery to the project will not be considered. For hire provide a <u>signed confirmation letter</u> from a reputable service provider together with <u>proof of ownership</u>). For compaction equipment Portfolio of Evidence POE should include the submission of Tax Invoices, Serial Numbers and Photographic Evidence.	10
	Bidder owns three (3) or will hire three (3) of the machinery required for the execution of the contract; namely, Excavator or TLB, 8 Ton Trucks (Flatbed or Dropside), compaction equipment (Pedestrian roller/ trench compactor/ Vibrating plates), and the machinery/equipment is available for the project.	10
	Bidder owns two (2) or will hire Two (2) of the machinery required for the execution of the contract; namely, Excavator or TLB, 8 Ton Trucks (Flatbed or Dropside), compaction equipment (Pedestrian roller/ trench compactor/ Vibrating plates), and the machinery/equipment is available for the project.	5
	The Bidder failed to provide proof of ownership of plant/equipment.	0
B1.5	Preliminary Programme: The tenderer shall attach a preliminary programme reflecting the proposed sequence of execution of the activities required for the contract. The programme shall be in accordance with the information supplied in the Project Specification, the contract data and with all aspects of this Tender.	10
	Detailed Programme provided in Gantt Chart format, correlated to the scope of work.	10
	No Programme provided or where provided, the activity schedule is generic with no correlation to the Scope of Work.	0

STAGE 2: EVALUATION FOR PRICE AND PREFERENCE (80/20)

The procedure for Stage 2 of evaluation of responsive tenders is **Method 2**

a) PRICE: 80

b) B-BBEE STATUS LEVEL OF CONTRIBUTION: 20

a) Points Awarded for Price (Ps)

A total of 80 points will be awarded to the Tenderer with the lowest balanced price. The **other tenders will be awarded points on the ratio to bench mark price as follows**

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

Where

- Ps = Points scored for price of bid under consideration
- Pt = Rand value of bid under consideration
- Pmin = Rand value of lowest acceptable bid

b) Points awarded for B-BBEE Status Level of Contribution

	<p>In terms of Regulation 5 (2) and 6 (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:</p> <table border="1"> <thead> <tr> <th>B-BBEE Status Level of Contributor</th> <th>Number of points (80/20 system)</th> </tr> </thead> <tbody> <tr><td>1</td><td>20</td></tr> <tr><td>2</td><td>18</td></tr> <tr><td>3</td><td>14</td></tr> <tr><td>4</td><td>12</td></tr> <tr><td>5</td><td>8</td></tr> <tr><td>6</td><td>6</td></tr> <tr><td>7</td><td>4</td></tr> <tr><td>8</td><td>2</td></tr> <tr> <td>Non-compliant Contributor</td> <td>0</td> </tr> </tbody> </table> <p>The total calculated points will be rounded to the second decimal place.</p>	B-BBEE Status Level of Contributor	Number of points (80/20 system)	1	20	2	18	3	14	4	12	5	8	6	6	7	4	8	2	Non-compliant Contributor	0
B-BBEE Status Level of Contributor	Number of points (80/20 system)																				
1	20																				
2	18																				
3	14																				
4	12																				
5	8																				
6	6																				
7	4																				
8	2																				
Non-compliant Contributor	0																				
F.3.13	Acceptance of tender offer																				
F3.13.1	<p>Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer:</p> <ul style="list-style-type: none"> a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement, b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract, c) has the legal capacity to enter into the contract, d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing, e) complies with the legal requirements, if any, stated in the tender data, and is able, in the opinion of the employer, to perform the contract free of conflicts of interest. 																				
F3.13.2	<p>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.</p>																				
F.3.14	<p>Notice to unsuccessful tenderers After the successful tenderer has acknowledged the employer's notice of acceptance, after written request, the employer will notify the tenderers that their tender offers have not been accepted in O.R Tambo District Municipality's website: www.ortambodm.gov.za by listing the successful tender.</p>																				
F.3.15	<p>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:</p> <ul style="list-style-type: none"> 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 the schedule of deviations attached to the form of offer and acceptance, if any. 																				
F.3.16	<p>Issue final contract Prepare and issue the final draft of the contract 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).</p>																				



**O.R. TAMBO
DISTRICT MUNICIPALITY**

VOLUME 1

TENDER

T2. RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

FORMS TO BE COMPLETED BY THE TENDERER

Form	Page	
T2.2 Returnable Documents		
A.	Compulsory Site Inspection Certificate	RD.5
B.	Relevant Experience	RD.6
C.	Key Personnel and Schedule	RD.9
D.	Schedule of Plant and Equipment	RD.15
E.	Schedule of Sources of Supply of Material	RD.16
F.	Proposed Specialist Sub-Contractors	RD.17
G.	Alterations by Tenderer	RD.18
H.	Authority of Signatory	RD.19
I.	Contractor's Health and Safety Declaration	RD.21
J.	Contractor's Certificate of Registration with CIDB	RD.23
K.	Contractor's COID Registration Details	RD.24
L.	Tax Clearance Certificate	RD.25
M.	Tenderer's Financial Standing	RD.26
N.	Form of Intent to Provide a Performance Guarantee	RD.27
O.	VAT Registration Certificate	RD.28
P.	Company Registration Certificate and Shareholding Details	RD.29
Q.	Copies of Directors' / Members' Identity Documents	RD.30
R.	Preferential Procurement Data	RD.31
S.	Preliminary Programme and Cashflow	RD.36
T.	Compulsory Enterprise Questionnaire	RD.37
U.	Declaration of Bidders' Past Supply Chain Management Practices	RD.40
V.	Declaration of Interest	RD.42
W.	Joint Venture Agreement	RD.44
X.	Current Commitments Schedule	RD.45
Y.	Certificate of Independent Bid Determination	RD.46
Z.	Good Standing with Municipal Accounts	RD.49
AA.	Declaration Certificate for Local Production and Content	RD.50
BB.	Method Statements	RD.54
CC.	Record of Addenda to Tender Document	RD.55
DD.	Declaration for Procurement above R10 Million	RD.56
EE.	Central Supplier Database Registration	RD.58
FF.	Procurement Form	RD.59
C1.1 Form of Offer		C.2
C2.2 Bill of Quantities		PD.4

Failure to complete the forms as directed may lead to the Tender being rejected.

T2.2 RETURNABLE SCHEDULES

TENDER CERTIFICATE

This Tender Certificate is submitted by:

(Name of Tenderer)

Form

T2.2 Returnable Documents

- A. Compulsory Site Inspection Certificate
- B. Relevant Experience
- C. Key Personnel and Schedule
- D. Schedule of Plant and Equipment
- E. Schedule of Sources of Supply of Material
- F. Proposed Specialist Sub-Contractors
- G. Alterations by Tenderer
- H. Authority of Signatory
- I. Contractor's Health and Safety Declaration
- J. Contractor's Certificate of Registration with CIDB
- K. Contractor's COID Registration Details
- L. Tax Clearance Certificate
- M. Tenderer's Financial Standing
- N. Form of Intent to Provide a Performance Guarantee
- O. VAT Registration Certificate
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- Y. Certificate of Independent Bid Determination
- Z. Good Standing with Municipal Accounts
- AA. Declaration Certificate for Local Production and Content
- BB. Method Statements
- CC. Record of Addenda to Tender Document
- DD. Declaration for Procurement above R10 Million
- EE. Central Supplier Database Registration
- FF. Procurement Form

C1.1 Form of Offer

C2.2 Bill of Quantities

I/We the undersigned do hereby certify as follows:

1. Inspection of Site and Examination of Site Data

- 1.1. I/We have inspected and examined the Site and its surroundings.
- 1.2. I/We have examined the Site Data made available by the Employer (if applicable).

2. Comprehension of Documents

- 2.1. I/We have acquainted myself/ourselves with the Tendering Procedures, General Conditions of Contract, Contract Data, Scope of Work, Site information, Drawings, and Specifications for the above Contract for which I/We have submitted this Tender.
- 2.2. I/We note that the O. R. Tambo District Municipality is not bound to accept the lowest or any tender that may be received.
- 2.3. I/We note that the O. R. Tambo District Municipality may for any reason withdraw this tender and re-tender without having to furnish any reason thereof.

Name(s) _____

Signature(s) _____

For the Tenderer _____

(Name and address of organization)

**Name and
signature of
witness**

Date

A. COMPULSORY SITE INSPECTION CERTIFICATE

A compulsory site inspection will be held at {INSERT VANUE OF MEETING} on {INSERT DATE OF MEETING} at {INSERT TIME OF MEETING}.

Special Requirements: Tenderers are to meet the Engineer at the Nyandeni Municipal Offices as per the Advert at 10h00, before proceeding to site.

CERTIFICATE OF ATTENDANCE

It is hereby certified that I have attended the Compulsory Briefing Session and have satisfied myself of the conditions and circumstances which may influence the Works and the cost thereof.

(Print clearly)

NAME OF REPRESENTATIVE	
ON BEHALF OF TENDERER	
ADDRESS	
TELEPHONE NUMBER	
SIGNATURE (FOR TENDERER)	

FOR OFFICIAL USE ONLY

I CONFIRM THAT THE TENDERER WAS PRESENT AT THE COMPULSORY BRIEFING SESSION	OFFICIAL DATE STAMP
---	----------------------------

B. RELEVANT EXPERIENCE

The following is a statement of work of a similar nature (E.g. Bulk pipelines and water retaining structures) successfully executed by myself / ourselves within the past 5 years with a value exceeding R13 Million:

ENGINEER: CONTACT PERSON AND TELEPHONE NUMBER	EMPLOYER NAME & DESCRIPTION OF WORK	VALUE OF WORK (inclusive of VAT)	COMPLETION DATE
(name)			
(tel.)			
(email)			
(fax)			
(name)			
(tel.)			
(email)			
(fax)			
(name)			
(tel.)			
(email)			
(fax)			
(name)			
(tel.)			
(email)			
(fax)			

A separate schedule, clearly referenced, may be inserted here. Tenderers are to note that the Engineer will submit the following Assessment of Contractor’s performance schedule to at least two of the references listed in the above table. Completion certificate for each project must be provided.

SIGNATURE: DATE:
 (of person authorised to sign on behalf of the Tenderer)

EXPERIENCE OF TENDERER (Cont.)

The following is a statement of work of a similar nature (E.g. Bulk pipelines and water retaining structures) successfully executed by myself / ourselves within the past 5 years with a value exceeding R13 Million:

ENGINEER: CONTACT PERSON AND TELEPHONE NUMBER	EMPLOYER NAME & DESCRIPTION OF WORK	VALUE OF WORK (Inclusive of VAT)	COMPLETION DATE
(name)			
(tel.)			
(email)			
(fax)			
(name)			
(tel.)			
(email)			
(fax)			
(name)			
(tel.)			
(email)			
(fax)			
(name)			
(tel.)			
(email)			
(fax)			

A separate schedule, clearly referenced, may be inserted here. Tenderers are note that the Engineer will submit the following Assessment of Contractor’s performance schedule to at least two of the references listed in the above table. Completion certificate for each project must be provided.

SIGNATURE: DATE:
 (of person authorised to sign on behalf of the Tenderer)

ASSESSMENT OF CONTRACTOR’S PERFORMANCE BY INDEPENDENT REFERENCE
(This will be sent by the Engineer to the references listed in The Experience of Tenderer schedule)

Please assess the Contractor (Name:)
 on his/her performance on the following Contract. Contract No.
 Name of Contract: Year of execution:
 Contract Start Date: Contract Completion Date:
 Contract value: .R..... Employer:
 Contract duration: Engineer:
 Reference’s Position in Contract:

Your assessment of the Contractor’s performance in the following areas: <i>(please tick one of the blocks on the right hand side)</i>	Not true	True
“Contractor’s Management was adequate for the contract”		
“Contractor provided suitably qualified Site personnel”		
“Contractor complied with Health & Safety requirements”		
“Contractor’s provided adequate resources for the contract”		
“Contractor’s communication and compliance to instructions was good”		
“Quality of work produced was to drawings and specification”		
“Contract was completed on time”		

Any other comments:

Name of person completing this assessment form (Reference):

ECSA Prof. Reg. No: Representing firm:

Please return by fax to: or e-mail to:

Signature of Reference/Validator.....

Date of Assessment:

C. KEY PERSONNEL AND SCHEDULE

In terms of the Project Specification and the Conditions of Tender, unskilled workers may only be brought in from outside the local community if such personnel are not available locally.

The Tenderer shall list below the personnel which he/she intends to utilize on the Works, including key personnel which may have to be brought in from outside if not available locally.

CATEGORY OF EMPLOYEE	NUMBER OF PERSONS					
	KEY PERSONNEL, PART OF THE CONTRACTOR'S ORGANISATION		KEY PERSONNEL TO BE IMPORTED IF NOT AVAILABLE LOCALLY		UNSKILLED PERSONNEL TO BE RECRUITED FROM LOCAL COMMUNITY	
	HDI	NON-HDI	HDI	NON-HDI	HDI	NON-HDI
Site Agent, Project Managers						
Foremen and Quality Control						
Technicians, Surveyors, etc.						
Artisans and other Skilled workers						
Plant Operators						
Unskilled Workers						
Health & Safety Agent						
Others:.....						

The Tenderer shall attach hereto the *curricula vitae*, in the form included hereafter, of at least the site agent and the project manager. The information is necessary for evaluation of the tender.

SIGNATURE: DATE:
 (of person authorised to sign on behalf of the Tenderer)

C. KEY PERSONNEL AND SCHEDULE (continued)

SITE AGENT	
Name:	Date of birth:
Profession:	Nationality:
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	Years with firm:
<u>Employment Record:</u>	
<u>Experience Record Pertinent to Required service:</u>	
* Include Certified Copy (Not older than 3 months) of Qualification	

CV and Certified copies of qualifications are to be attached to this schedule.

Certification:

I, the undersigned, certify that to the best of my knowledge and belief that this data correctly describes me, my qualifications, and my experience.

.....
 SIGNATURE OF THE INCUMBENT IN THE SCHEDULE

.....
 DATE

C. KEY PERSONNEL AND SCHEDULE (continued)

SITE SUPERVISOR	
Name:	Date of birth:
Profession:	Nationality:
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	Years with firm:
<u>Employment Record:</u>	
<u>Experience Record Pertinent to Required service:</u>	
* Include Certified Copy (Not older than 3 months) of Qualification	

CV and Certified copies of qualifications and relevant experience are to be attached to this schedule.

Certification:

I, the undersigned, certify that to the best of my knowledge and belief that this data correctly describes me, my qualifications and my experience.

.....
SIGNATURE OF THE INCUMBENT IN THE SCHEDULE

.....
DATE

C. KEY PERSONNEL AND SCHEDULE (continued)

CONCRETE FOREMAN	
Name:	Date of birth:
Profession:	Nationality:
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	Years with firm:
<u>Employment Record:</u>	
<u>Experience Record Pertinent to Required service:</u>	
* Include Certified Copy (Not older than 3 months) of Qualification	

CV and Certified copies of qualifications and relevant experience are to be attached to this schedule.

Certification:

I, the undersigned, certify that to the best of my knowledge and belief that this data correctly describes me, my qualifications, and my experience.

.....
SIGNATURE OF THE INCUMBENT IN THE SCHEDULE

.....
DATE

C. KEY PERSONNEL AND SCHEDULE (continued)

PIPELINE FOREMAN	
Name:	Date of birth:
Profession:	Nationality:
Qualifications:	
Professional Registration Number:	
Name of Employer (firm):	
Current position:	Years with firm:
<u>Employment Record:</u>	
<u>Experience Record Pertinent to Required service:</u>	

CV and Certified copies of qualifications and relevant experience are to be attached to this schedule.

Certification:

I, the undersigned, certify that to the best of my knowledge and belief that this data correctly describes me, my qualifications, and my experience.

.....
 SIGNATURE OF THE INCUMBENT IN THE SCHEDULE

.....
 DATE

D. SCHEDULE OF PLANT AND EQUIPMENT

The Tenderer must state below what plant and equipment will be available for the work should he be awarded the contract.

DESCRIPTION, SIZE, CAPACITY	YEAR OF MANUFACTURE	NUMBER

NB: After the award of the contract, the Contractor must satisfy the Engineer that all the above plant and equipment or equivalent plant and equipment will be on the site at all times when required. The Contractor shall maintain all plant and equipment in a good working order for the duration of the contract.

The Contractor also undertakes to bring onto the site, without additional costs to the Employer, any additional plant and equipment which, in the opinion of the Engineer, is necessary for completing the contract within the tendered contract period.

.....
SIGNATURE OF TENDERER

E. SCHEDULE OF SOURCES OF SUPPLY OF MATERIALS

The Tenderer shall list below the proposed type; source or trade name of the materials he wishes to use.

The acceptance of this tender shall not be construed as approval of all or any of the listed materials. Should any or all of the materials not be approved subsequent to acceptance of tender, this shall in no way invalidate this tender and the tendered unit rates for the various items of work shall remain final and binding.

MATERIAL	TYPE OR TRADE NAME	SOURCE
SAND (Concrete)		
SAND (Mortar)		
SAND (Bedding)		
STONE		
CEMENT		
STEEL PIPES		
uPVC PIPES		
HDPE PIPES		
VALVES		
OTHER		

.....
SIGNATURE OF TENDERER

F. SCHEDULE OF PROPOSED SPECIALIST SUB-CONTRACTORS

The Tenderer shall list below any Sub-Contractors he wishes to employ to carry out part(s) of the Work.

For construction related contracts, the service provider should ensure that a minimum 30% of the contract, as detailed below, is sub-contracted to qualifying previously disadvantaged companies within the approved emerging contractors' incubator project, within the area of jurisdiction of the municipality. First preference will be given to those in the Magcakeni and Mambethu area. Contractors must submit a list of Specialist Sub-Contractors with their tender in the table below.

Specialist Sub-Contractor Name	Specialty	Address	Contact details	Years of Experience

G. ALTERATIONS BY TENDERER

1. Should the Tenderer not be able to meet any requirement of the Tender Documents, he shall state below:

Qualifications to Tender

And set out details of the requirements which he cannot meet and his proposal.

Note: A qualified tender is a non-conforming tender and may be rejected.

2. Should the Tenderer have completed a full conforming tender but wishes in addition to submit an alternative offer, he shall state below.

Alternative Offer

And set out details of the items for which he proposes an alternative.

In both cases, the Tenderer may prepare the details under a covering letter and refer to them on this form.

Page or Item	Alteration Proposed by Tenderer

.....
SIGNATURE OF TENDERER

H. AUTHORITY OF SIGNATORY

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

A Company	B Partnership	C Joint Venture	D Sole Proprietor	E Close Corporation

A. Certificate for Company

I,, chairperson of the board of
, hereby confirm that by resolution
 of the board (copy attached) taken on 202.....,
 Mr./Ms.

acting in the capacity of, was authorised to sign
 all documents in connection with this tender for Contract No: and any contract resulting
 from it on behalf of the company.

As witnesses:

1. Chairman:
2. Date:

B. Certificate for Partnership

We, the undersigned, being the key partners in the business trading as
, hereby authorise Mr./Ms.
, acting in the capacity of, to sign all documents in
 connection with this tender for Contract No.: MIS 271 056 C any contract resulting from it on our behalf.

Name	Address	Signature	Date

Note: This certificate is to be completed and signed by all key partners upon whom rests the direction of the affairs of the Partnership as a whole.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby
 authorise Mr./Ms., authorised signatory of the company
, acting in the capacity of lead
 partner, to sign all documents in connection with this tender for Contract No: and any
 contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised
 signatories of all the partners to the Joint Venture.

Name of Firm	Address	Authorising Name and Capacity	Authorising Signature
Lead Partner:			

D. Certificate for Sole Proprietor

I,, hereby confirm that I am
 the sole owner of the business trading as

As witnesses:

1. Sole Owner:
2. Date:

E. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as
, hereby authorise Mr./Ms.
 acting in the capacity of, to sign all to sign all documents in connection
 with this tender for Contract No..... and any contract resulting from it on our behalf.

Name	Address	Signature	Date

*Note: This certificate is to be completed and signed by all key partners upon whom rests the direction
 of the affairs of the Partnership as a whole.*

I. CONTRACTOR'S HEALTH AND SAFETY DECLARATION

In terms of Clause 5(h) of the OHS Act 1993 Construction Regulations 2014 (referred to as "the Regulations" hereafter), a Contractor may only be appointed to perform construction work if the Employer is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act No 85 of 1993 and the OHS Act 1993 Construction Regulations 2014.

To that effect a person duly authorised by the tenderer must complete and sign the declaration hereafter in detail.

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the OHS Act 1993 Construction Regulations 2014.
2. I hereby declare that my company has the competence and the necessary resources to safely carry out the construction work under this contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.
3. I hereby confirm that adequate provision has been made in my tendered rates and prices in the Bill of Quantities to cover the cost of all resources, actions, training and all health and safety measures envisaged in the OHS Act 1993 Construction Regulations 2014, including the cost of the specific items listed in the tables hereafter.

TABLE 1: SAFETY PERSONNEL

PERSONNEL
Construction Supervisor
Construction Safety Officer
Health and Safety Representatives
Health and Safety Committee

TABLE 2: SAFETY EQUIPMENT (As applicable)

EQUIPMENT
Hard Hats
Safety Boots
Masks
Gloves
Personal Protective Equipment
Other items deemed necessary due to the nature of the contract/site

4. I hereby undertake, if my tender is accepted, to provide, before commencement of the works under the contract, a suitable and sufficiently documented Health and Safety Plan in accordance with Regulation 5(1) of the Construction Regulations, which plan shall be subject to approval by the Employer.
5. I confirm that copies of my company's approved Health and Safety Plan, the Employer's Safety Specifications as well as the OHSA 1993 Construction Regulations 2014 will be provided on site and will at all times be available for inspection by the Contractor's personnel, the Employer's personnel, the Engineer, visitors, and officials and inspectors of the Department of Labour.
6. I hereby confirm that, I will be liable for any penalties that may be applied by the Employer in terms of the said Regulations (Regulation 30) for failure on the Contractor's part to comply with the provisions of the Act and the Regulations.
7. I agree that my failure to complete and execute this declaration to the satisfaction of the Employer will mean that I am unable to comply with the requirements of the OHSA 1993 Construction Regulations 2014, and accept that my tender will be prejudiced and may be rejected at the discretion of the Employer.

SIGNATURE: DATE:
(of person authorised to sign on behalf of the Tenderer)

J. CONTRACTOR'S CERTIFICATE OF REGISTRATION WITH CIDB

The Tenderer shall attach hereto the Contractor's Certificate of Registration with CIDB or insert his CRS №. Failure to submit the certificate or number with the tender document will lead to the conclusion that the Tenderer is not registered with the CIDB and the tender offer will be deemed as not valid/incomplete. The certificate must be valid by close of tender.

K. CONTRACTOR'S COID REGISTRATION DETAILS

The Tenderer shall attach hereto their COID Registration details. Failure to submit a valid Letter of Good Standing (COID) with the tender document will lead to the conclusion that the Tenderer is not registered.

L. TAX CLEARANCE CERTIFICATE

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

1. In order to meet this requirement bidder are required to complete in full form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.
2. SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
3. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
4. In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.
5. Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.
6. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

Tenderers are to note that copies, including certified copies, will not be accepted.

Attach valid and original Tax Clearance Certificates behind this page.

NOTE: Failure to do so will lead to your tender being disqualified. Alternatively tenderers can submit their unique Tax Status Compliance pin in order to verify their tax status.

M. TENDERER'S FINANCIAL STANDING

In terms of the Tender Data the tenderer must obtain a bank rating from the Tenderer's bank.

To that end the Tenderer must provide with his tender a bank rating, certified by his banker, to the effect that he will be able to successfully complete the contract at the tendered amount within the specified time for completion and attach the documentation/rating certificate to this page.

Name of account holder: _____

Name of Bank: _____

Branch: _____

Account number: _____

Type of account: _____

Telephone number: _____

Facsimile number: _____

Name of contact person (at bank): _____

Failure to provide the required bank details and a certified bank rating with his tender, will lead to the conclusion that the Tenderer does not have the necessary financial resources at his disposal to complete the contract successfully within the specified time for completion. Tenderers who receive a Bank Rating ≤ D will be disqualified.

The Employer undertakes to treat the information thus obtained as confidential, strictly for the use of evaluation of the tender submitted by the Tenderer.

Note that the Tenderer should have a Bank Rating of C or above to be considered eligible to Tender. Tenderers with a Bank Rating of D and below will be disqualified.

SIGNATURE: DATE:
(of person authorised to sign on behalf of the Tenderer)

N. FORM OF INTENT TO PROVIDE A PERFORMANCE GUARANTEE

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

Only a Performance Guarantee in the format indicated in Section C1.3 on pages F1 and F2 will be accepted by the Employer.

O. VAT REGISTRATION CERTIFICATE

The Tenderers VAT Registration Certificate is to be attached here.

P. COMPANY REGISTRATION CERTIFICATE AND SHAREHOLDING DETAILS

The Tenderer's Company Registration details are to be attached here, including shareholding details.

Q. COPIES OF DIRECTORS' / MEMBERS' IDENTITY DOCUMENTS

Certified copies of Identity Documents of all Directors/Members of a Close Corporation are to be attached here.

R. PREFERENTIAL PROCUREMENT DATA

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 R 50 million (all applicable taxes included); and
 - the 90/10 system for requirements with a Rand value above R 50 million (all applicable taxes included).
- 1.2 The value of this bid is estimated to be up to R50 million (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable;
- 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 PREFERENCE POINT SYSTEMS

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

80/20

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

Where ;

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

4. POINTS AWARDED FOR 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 (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	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. DECLARATION WITH REGARD TO COMPANY/FIRM

- 7.1 Name of company/firm:.....
- 7.2 VAT registration number:.....
- 7.3 Company registration number:.....

7.4 TYPE OF COMPANY/ FIRM

[TICK APPLICABLE BOX]

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

7.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

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

7.6 COMPANY CLASSIFICATION

[TICK APPLICABLE BOX]

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

7.7 MUNICIPAL INFORMATION

Municipality where business is situated:.....
Registered Account Number:
Stand Number:.....

7.8 Total number of years the company/firm has been in business:.....

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

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;

- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
- (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person’s conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

<p>WITNESSES</p> <p>1.</p> <p>2.</p>
--

<p>..... SIGNATURE(S) OF BIDDERS(S)</p> <p>DATE:</p> <p>ADDRESS</p> <p>.....</p> <p>.....</p>

S. PRELIMINARY PROGRAMME AND CASHFLOW

The Tenderer shall attach a preliminary programme reflecting the proposed sequence and duration of the various activities comprising the work for this Contract. The programme shall be in accordance with the information supplied in the Contract, requirements of the Project Specifications and with all other aspects of this Tender.

Note: The programme must be based on the completion time as specified in the Contract Data. No other completion time that may be indicated on this programme will be regarded as an alternative offer, unless it is listed on Form G: Alternative Offers, in the Returnable Schedules section and supported by a detailed statement to that effect, all as specified in the Tender Data.

Any changes in Key Personnel are to be pre-approved by O. R. Tambo District Municipality.

T. COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of Enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: Particulars of sole proprietors and partners in partnerships

Name *	Identity Number *	Personal Income Tax Number *

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

Section 5: Particulars of companies and close corporations

Company registration number

Close corporation number

Tax reference number

Section 6: Record in the services of the state

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

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

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

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

* Insert separate page if necessary

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

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

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

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

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

* Insert separate page if necessary

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

- (i) Authorises the Employer to obtain a tax clearance from the South African Revenue Services that my/our tax matters are in order;
- (ii) Confirms that neither the name of the enterprise nor the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- (iii) Confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- (iv) Confirms that I/we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- (v) Confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed: _____ Date: _____

Name: _____ Position: _____

Enterprise Name: _____

U. DECLARATION OF BIDDERS' PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1. This Municipal Bidding Document must form part of all bids invited.
2. It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
3. The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a) abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b) been convicted for fraud or corruption during the past five years;
 - c) willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d) been listed in the Register for Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act (N° 12 of 2004).
4. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid:

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteran partem</i> rule was applied).	Yes •	No •
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act (N° 12 of 2004)?	Yes •	No •
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes •	No •
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal	Yes •	No •

Item	Question	Yes	No
	entity, or to any other municipality / municipal entity, that is in arrears for more than three months?		
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ·	No ·
4.7.1	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

V. DECLARATION OF INTEREST

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

- | | | | |
|--------|---|-------|---------------|
| 3.1 | Full Name: | | |
| 3.2 | Identity Number: | | |
| 3.3 | Company Registration Number: | | |
| 3.4 | Tax Reference Number: | | |
| 3.5 | VAT Registration Number: | | |
| 3.6 | Are you presently in the service of the state*: | | Yes/No |
| 3.6.1 | If yes, furnish particulars: | | |
| 3.7 | Have you been in the service of the state for the past twelve months? | | Yes/No |
| 3.7.1 | If yes, furnish particulars: | | |
| 3.8 | Do you have any relationship (family, friend, other) with persons in the service of the O. R. Tambo District Municipality | | Yes/No |
| 3.8.1 | If yes, furnish particulars | | |
| 3.9 | Are you aware of any relationship (family, friend, other) between bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? | | Yes/No |
| 3.9.1 | If yes, furnish particulars | | |
| 3.10 | Are any of the company's director, managers, principle shareholders or stakeholders in service of the state: | | Yes/No |
| 3.10.1 | If yes, furnish particulars | | |
| 3.11 | Are any spouse, child or parent of the company's director, managers, principle stakeholders or stakeholders in service of the state? | | Yes/No |
| 3.11.1 | If yes, furnish particulars hereunder: | | |

*MSCM Regulations: “in the service of the state” means to be

- (a) a member of –
 - (i) any municipal council:
 - (ii) any provincial legislature: or
 - (iii) the national Assembly or the national Council of provinces:
- (b) a member of the board of directors of any municipal entity
- (c) an official of any municipality or municipal entity
- (d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act 1999 (Act N° 1 of 1999):
- (e) a member of the accounting authority of any national or provincial public entity: or
- (f) an employee of Parliament or a provincial legislature.

Signature

Date

Position

Name of Bidder

W. JOINT VENTURE AGREEMENT

The Tenderer must attach to this page a joint venture agreement, if applicable.

X. CURRENT COMMITMENTS SCHEDULE

Employer and Contract Description	Contract Amount	Duration and Completion Date	Consulting Engineer

SIGNATURE: DATE:
(of person authorised to sign on behalf of the Tenderer)

Y. CERTIFICATE OF INDEPENDENT BID DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
3. Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a) take all reasonable steps to prevent such abuse;
 - b) reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c) cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
4. This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
5. In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

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

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

Y. CERTIFICATE OF INDEPENDENT BID DETERMINATION (Continued)

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of: _____ that:

(Name of Bidder)

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

- (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

Z. PROOF OF GOOD STANDING WITH MUNICIPAL ACCOUNTS

The tenderer is to affix to this page:

- Proof that they are not in arrears for more than 30 days with municipal rates and taxes and municipal service charges. The latest municipal account statement is to be attached.

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this tender not being further considered for the award of the contract.
2. Should this tender be considered for award of the contract, based on proof of submission and should proof of such submission be found to be invalid, erroneous or inaccurate, the tender will no longer be considered for the award of the contract.

Attach latest municipal account statement to this page.

SIGNATURE: DATE:
(of person authorised to sign on behalf of the Tenderer)

AA. DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT

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, 2011 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:201x.

1. General Conditions
- 1.1. Preferential Procurement Regulations, 2017 (Regulation 13.(1) and 13.(3) make provision for the promotion of local production and content.
- 1.2. Regulation 13.(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Regulation 13.(2) prescribes that where there is no designated sector, a specific bidding condition may be included, that only locally produced services, works or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.
- 1.4. Where necessary, for bids referred to in paragraphs 1.2 and 1.3 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.
- 1.5. 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.
- 1.6. The local content (LC) as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 201x as follows:

$$LC = 1 - \left(\frac{x}{y}\right) \times 100$$

Where

x = Imported content

y = bid price excluding value added tax (VAT)

Prices referred to in the determination of P_{IC} must be converted to Rand (ZAR) by using the exchange rate published by the South African Reserve Bank (SARB) at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid as required in paragraph 4.1 below.

- 1.7. A bid will be disqualified if:
 - the bidder fails to achieve the stipulated minimum threshold for local production and content indicated in paragraph 3 below; and
 - this declaration certificate is not submitted as part of the bid documentation.

2. Definitions
- 2.1. **“bid”** includes advertised competitive bids, written price quotations or proposals;
- 2.2. **“bid price”** price offered by the bidder, excluding value added tax (VAT);
- 2.3. **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.4. **“designated sector”** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;
- 2.5. **“duly sign”** means a Declaration Certificate for Local Content that has been signed by the 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).
- 2.6. **“imported content”** means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;
- 2.7. **“local content”** means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;
- 2.8. **“stipulated minimum threshold”** means that portion of local production and content as determined by the Department of Trade and Industry; and
- 2.9. **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.

3. The stipulated minimum threshold(s) for local production and content for this bid is/are as follows:

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
Gate Valves	70%
Control Valves	70%
Air Valves	70%

4. Does any portion of the services, works or goods offered have any imported content? YES / NO
- 4.1. If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.6 of the general conditions must be the rate(s) published by the SARB for the specific currency at 12:00 on the date, one week (7 calendar days) prior to the closing date 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:

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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 Municipality / Municipal Entity):

NB 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.

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 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.
- (c) The local content has been calculated using the formula given in clause 3 of SATS 1286, the rates of exchange indicated in paragraph 4.1 above and the following figures:

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

If the bid is for more than one product, a schedule of the local content by product shall be attached.

- (d) I accept that the Procurement Authority / Municipality /Municipal Entity has the right to request that the local content be verified in terms of the requirements of SATS 1286.
- (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, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

BB. METHOD STATEMENTS

The Tenderer must attach a proposed work plan/method statement based on the scope of work and other information provided in the document which must briefly describe the following:

- (a) Construction procedures / methodology
- (b) Resources (personnel) to be used
- (c) Materials and plant to be used
- (d) Quality control measures
- (e) Storage of materials
- (f) Risk management
- (g) Health and Safety measures to be taken
- (h) Environmental control measures to be taken

The above information may be in the form of a summary but should not exceed 5 pages.

SIGNATURE: DATE:
(of person authorised to sign on behalf of the Tenderer)

CC. RECORD OF ADDENDA TO TENDER DOCUMENT

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

ADD №	DATE	TITLE OR DETAILS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

*Attach additional pages if more space is required.

SIGNATURE: DATE:
(of person authorised to sign on behalf of the Tenderer)

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

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

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

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

.....
.....

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

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

2.2 If yes, provide particulars.

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

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

3.1 If yes, furnish particulars

.....
.....

* Delete if not applicable

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

(Please use block capitals when completing the section below)

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:
(of person authorised to sign on behalf of the Tenderer)

NAME:

POSITION:

* Delete if not applicable

EE. CENTRAL SUPPLIER DATABASE REGISTRATION

Name of Tenderer:

Database Registration Number:

No awards will be made to a tenderer who is not registered and compliant on the Central Supplier Database (CSD).

The establishment of a Central Supplier Database (CSD) will result in one single database to serve as the source of all supplier information for all spheres of government. The purpose of centralising government's supplier database is to reduce duplication of effort and cost for both supplier and government while enabling electronic procurement processes.

Registration on the Central Supplier Database must be done online via the website:

<https://secure.csd.gov.za/>

SIGNATURE: DATE:
(of person authorized to sign on behalf of the Tenderer)

FF. PROCUREMENT FORM

Acceptable Tenders will be evaluated using a system that awards points on the basis of Tender price and the meeting of specific goals.

DEFINITIONS

“Acceptable Tender” means any Tender which, in all respects, complies with the conditions of Tender and specifications as set out in the Tender document, including conditions as specified in the Preferential Procurement Policy Framework Act (Act 5 of 2000) and the Supply Chain Management of Council.

“Council” refers to the O. R. TAMBO DISTRICT Municipality.

“Equity ownership” refers to the percentage ownership and control, exercised by individuals within an enterprise and they are involved in the day to day running of the Company.

“HDI equity ownership” refers to the percentage of an enterprise, which is owned by individuals, or in the case of a company, the percentage shares that are owned by individuals meeting the requirements of the definition of a HDI.

“Historically disadvantaged individuals (HDIs)” means all South African citizens –

- (i) Who had no franchise in national elections prior to the introduction of the 1983 and 1993 constitutions (Referred to as Previously Disadvantaged Individuals (PDIs) in this document)
- (ii) Women
- (iii) Disabled persons.

“SMME’s” (small, medium and micro enterprises) refers to separate and distinct business entities, including co-operative enterprises and NGOs, managed by one owner or more, as defined in the National Small Business (Act 102 of 1996). Refer to the attached addendum for a definition of SMME’s for different economic sectors.

Tenders are adjudicated in terms of NDM Procurement Policy, and the following framework is provided as a guideline in this regard.

1. Technical adjudication and General Criteria

- Tenders will be adjudicated in terms of inter alia:
- Compliance with Tender conditions
- Technical specifications

If the Tender does not comply with the Tender conditions, the Tender will be rejected. If technical specifications are not met, the Tender may also be rejected.

With regard to the above, certain actions or errors are unacceptable, and warrants **REJECTION OF THE TENDER**, for example:

- A Tax Verification Pin. (**Only valid tax verification pin** must be attached to the Tender document).
- Pages to be completed, removed from the Tender document, and have therefore not been submitted.
- Failure to complete the schedule of quantities as required
- Scratching out without initialling next to the amended rates or information.
- Writing over / painting out rates / the use of tippex or any erasable ink, eg. Pencil.
- Failure to attend compulsory site inspections
- The Tender has not been properly signed by a party having the authority to do so, according to the **Form 2.2.2 – “Authority for Signatory”**
- No authority for signatory submitted.
- Form of Offer not completed.
- Particulars required in respect of the Tender have not been provided – non-compliance of Tender requirements and/or specifications.
- The Tenderer’s attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract.
- The Tender has been submitted after the relevant closing date and time
- Each page of the Contract portion of this Tender document (Part C1 – C4) must be initialled by the authorised person in order for the document to constitute a proper Contract between the Employer (ORTDM) and the undersigned.
- If any municipal rates and taxes or municipal service charges owed by that Tenderer or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months.
- If any Tenderer who during the last five years has failed to perform satisfactorily on a previous contract with the municipality or any other organ of state after written notice was given to that Tenderer that performance was unsatisfactory.

2. Size of enterprise and current workload

Evaluation of the Tenderer’s position in terms of:

- Previous and expected current annual turnover
- Current contractual obligations
- Capacity to execute the contract

3. Staffing profile

Evaluation of the Tenderer’s position in terms of:

- Staff available for this contract being Tendered for
- Qualifications and experience of key staff to be utilized on this contract

4. Financial ability to execute the contract:

Evaluation of the Tenderer's financial ability to execute the contract. Emphasis will be placed on the following:

- Contact the Tender's bank manager to assess the Tenderer's financial ability to execute the contract and the Tenderer hereby grants his consent for this purpose.

5. Good standing with SA Revenue Services

- Determine whether an original valid tax verification pin has been submitted.
- The Tenderer must affix an original valid Tax Verification Pin to page T2.2.9 of the Tender document.

6. Penalties

The O. R. Tambo District Municipality will if upon investigation it is found that a preference in terms of the Contract has been obtained on a fraudulent basis, or any specified goals are not attained in the performance of the contract, on discretion of the Municipal Manager, one or more of the following penalties will be imposed:

- Cancel the contract and recover all losses or damages incurred or sustained from the Tenderer.
- Impose a financial penalty of twice the theoretical financial preference associated with the claim, which was made in the Tender.
- Restrict the suppliers, its shareholders and directors on obtaining any business from the O. R. Tambo District Municipality for a period of 5 years.

DECLARATION

I/We the undersigned, who warrants that he/she is duly authorised to do so on behalf of the firm, certifies that the items mentioned in part of the foregoing procurement form and returnable documents qualifies/qualify for the preference(s) shown and acknowledge(s) that:

The information furnished is true and correct.

The contractor may be required to furnish documentary proof to the satisfaction of the O. R. Tambo District Municipality that the claims are correct.

If the claims are found to be inflated, the O. R. Tambo District Municipality may, in addition to any other remedy it may have, recover from the contractor all cost, losses or damages incurred or sustained by the O. R. Tambo District Municipality as a result of the award of the contract and/or cancel the contract and claim any damages which the O. R. Tambo District Municipality may suffer by having to make less favourable arrangements after such cancellation.

Signature of Tenderer

Signed at _____ on _____ day of _____ 202_____

For the tenderer

WITNESSES:

1. _____

2. _____



**O.R. TAMBO
DISTRICT MUNICIPALITY**

VOLUME 1

CONTRACT

C1. AGREEMENT AND CONTRACT DATA

O. R. Tambo District Municipality

Tender No: MIS 271 056 C

DESCRIPTION: LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU BULK WATER INFRASTRUCTURE AUGMENTATION

C1.1 Form of Offer and Acceptance

A: Offer

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

Contract No: MIS 271 056 C: LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU BULK WATER INFRASTRUCTURE AGUMENTATION

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

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance the Tenderer offers to perform all of the obligations and liabilities of the Service Provider 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 VAT IS:

(in words)

.....
.....
.....Rands; 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 including the Schedule of Deviations (if any) to the Tenderer before the end of the agreed period of validity, or other period as agreed, whereupon the Tenderer becomes the party named as the Service Provider in the conditions of contract identified in the Contract Data.

Signature(s)		
Name(s)	-----	
Capacity	-----	
For the Tenderer:		
Name& signature of witness	Name and address of organization	Date

B: ACCEPTANCE

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

The terms of the contract are contained in:

- Part 1 Agreement, and Contract Data, (which include this Agreement)
- Part 2 Pricing Data, including the Bill of Quantities
- Part 3 Scope of Work
- Part 4 Site Information
- Part 5 Drawings
- Part 6 Annexures

The schedules, forms, drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 6 above.

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

The Tenderer shall deliver the Guarantee in terms of Clause 6 of the General Conditions of Contract 2015 within the period stated in the Contract Data, and he shall, immediately 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 other bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data, within 14 days of the date on which this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature: *(of person authorized to sign the acceptance)* :

Name: *(of signatory in capitals)* :

Capacity: *(of Signatory)* :

Name of Employer : O. R. Tambo District Municipality

Address : Nelson Mandela Drive
Myezo Park, Mthatha

As Witness Signature : **Name:** *(in capitals)*:

Date:

C: SCHEDULE OF DEVIATIONS

The extent of deviations from the tender documents issued by O. R. Tambo District Municipality prior to the tender closing date is limited to those permitted in terms of the Tender Data and the Conditions of Tender.

A Tenderer’s covering letter will not necessarily 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.

Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.

Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

- 1. **Subject:**.....
Details:.....
- 2. **Subject:**.....
Details:.....
- 3. **Subject:**.....
Details:.....
- 4. **Subject:**.....
Details:.....
- 5. **Subject:**.....
Details:.....
- 6. **Subject:**.....
Details:.....
- 7. **Subject:**.....
Details:.....

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

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

FOR THE TENDERER:

Signature:

Name:

Capacity:

Tenderer: *(Name and address of organisation)*.....
.....
.....

Witness:

Signature:

Name:

Date:

FOR O. R. TAMBO DISTRICT MUNICIPALITY:

Signature:

Name:

Capacity:

Witness:

Signature:

Name:

Date:

C1.2 CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

The *General Conditions of Contract for Construction Works (2015) 3rd edition*, published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685, is applicable to this Contract and is obtainable from www.saice.org.za.

Copies of these Conditions of Contract may be obtained from the South African Institution of Civil Engineering, Tel: 011 805 5947.

CONTRACT SPECIFIC DATA

The following contract specific data are applicable to this Contract:

Clause	
1.1.1.13	The Defects Liability Period is 365 days [measured from the date of the Certificate of Completion]
1.1.1.14	The time for achieving Practical Completion of the entire Works is 38 calendar weeks [measured from the Commencement Date , including Saturdays and Sundays, but excluding special non-working days; the above duration includes a total of 21 days for submission of documentation, (including resubmission if necessary), 7 days for review and approval of documentation, as stated in 5.3.1 and 32 days to obtain the required construction permit and other approvals as may be necessary from the Department of Labour, as required in terms of Construction Regulation 2014].
1.1.1.15 1.2.1.2	The Employer is the O. R. Tambo District Municipality The Employer's address for receipt of communications is: Physical address: First Floor Nelson Mandela Mvezo Park Mthatha, 5100 Telephone: 047 501 6425 Postal Address: Private Bag X 6043 Mthatha 5100 E-mail: nkosiyabon@ortambodm.gov.za
1.1.1.16 1.2.1.2	The Employer's Agent is Umpisi Engineers and Gibb (Pty) Ltd. The Employer's Agent's address for receipt of communications is: Physical address: 5 Zenith Drive, Umhlanga Ridge DURBAN, 4319 Tel. No. (047) 532 6573 Tel. No. (031) 566 4209 e-mail: nkululekos@umpisi.com
1.1.1.26	The Pricing Strategy is: Re-measurement Contract
1.3.2	The governing law is the law of the Republic of South Africa

Clause	
3.2.3	<p>The Employer's Agent shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract:</p> <ol style="list-style-type: none"> 1 Clause 6.3: Variations (where total variations exceed the contingency sum) 2 Clause 5.12: Extension of Time for Practical Completion <ul style="list-style-type: none"> - Certify additional costs/expenditure - Taking over of the Works
5.3.1	<p>The documentation required before commencement with Works execution are:</p> <ul style="list-style-type: none"> - Health and Safety Plan and File (Refer to Clause 4.3) - Initial programme (Refer to Clause 5.6) - Security (Refer to Clause 6.2) - Insurance (Refer to Clause 8.6) - Cash flow projection - Agreement of Indemnity in Terms of Occupational Health and Safety Act 1993 - CV's of Key Personnel
5.3.2	<p>The time to submit the documentation required before commencement with Works execution is Fourteen (14) days.</p> <p>The commencement of the works shall be subject to the approval required in terms of the applicable Construction Regulations, as detailed in clause 1.1.1.14.</p>
5.8.1	<p>The non-working days are Saturdays and Sundays. The special non-working days are all applicable public holidays and the year-end break commencing and ending on dates specified by SAFCEC</p>
5.13.1	<p>The penalty for failing to complete the Works is R 5 000.00 per day (including non-working days) as per the General Conditions of Contract 2015.</p>
5.14.1	<p>Practical completion will be issued once the works is fit for intended use as approved by the Employers Agent.</p>
5.16.3	<p>The latent defect period is 10 years for Civil Engineering</p>
6.5.1.2.3	<p>The percentage allowances to cover all overhead charges is 0% (Zero)</p>
6.10.1.5	<p>The percentage advance on materials not yet built into the Permanent Works is 80% maximum on proof of ownership.</p>
	<p>Variations to the Conditions of Contract are:</p>
4.4.2	<p><i>Add the following to Clause 4.4.2 after the last sentence:</i></p> <p>"The Contractor shall not subcontract any part of the Contract without the prior written consent of the Employer's Agent, which consent shall not be unreasonably withheld. A Subcontractor within the jurisdiction of O. R. Tambo DM shall be appointed by the Contractor subject to meeting the requirements of the Client."</p>
4.5.4	<p><i>Replace the contents of Clause 4.5.4 with</i></p> <p>"For this contract he fees, taxes, levies and other charges to be paid by the Contractor in terms of sub-clause 4.5.1.1 will not be refunded by the Employer. The cost thereof shall be deemed to be included in the prices tendered for relevant items in the Bill of Quantities".</p>
	<p>Time to instruct commencement of the Works</p>

5.3.3	<p><i>Add the following to Clause 5.3.3 after the last sentence:</i></p> <p>"The Contractor shall not commence working until they have an approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 together with an OHS particular specification and complied with the initial requirements thereof."</p>
5.12	<p><i>Add the following:</i></p> <p>"In the case of an additional public holiday declared by the State President, a claim for the cost of temporary or hourly-paid workers who would have been actively engaged in the construction work had the day not been declared a public holiday, will be considered by the Employer. Except for proven extra cost, claims for standing time of plant and equipment will not be considered as the cost thereof is deemed to be included in the Contractor's provisional and general items."</p>
5.12.2	<p><i>Replace sub-clause 5.12.2.4 with the following:</i></p> <p>"Any disruption of labour on a regional or national level due to political unrest, organized mass action or related incidents which is considered to be beyond the Contractor's control.</p> <p>Any strike within the confines of the Contractor's company, which may affect this project, will be deemed to be within the Contractor's control."</p>
5.14.1	<p>Practical Completion</p> <p><i>Replace the last sentence of the second paragraph:</i></p> <p>"Should the Employer's Agent ... on the Due Completion Date."</p> <p><i>with the following:</i></p> <p>"Should the Employer's Agent not issue such a list within 14 days, Practical Completion shall be deemed to have been achieved on the said fourteenth day."</p>
5.14.2	<p>Issue of Certificate of Practical Completion</p> <p><i>Replace "the Employer's Agent" in the second line with the following:</i></p> <p>", the Contractor shall notify the Employer's Agent, who shall inspect the Works and the Employer's Agent"</p>
5.14.4	<p>Certificate of Completion</p> <p><i>Replace "the Employer's Agent" in the second and third line of the first paragraph with:</i></p> <p>", the Contractor shall notify the Employer's Agent, who shall inspect the works and the Employer's Agent"</p>
6.10.4	<p>Delivery, dissatisfaction with and payment of payment certificate</p> <p><i>Replace "28 days" in the seventh line with "30 days".</i></p>
6.11	<p>Variations exceeding 15 per cent</p> <p><i>Replace "15 per cent" in the heading, the marginal heading and the tenth line with "20 per cent".</i></p>

Clause	
	<p>Payment of Material on Site (MOS) will be paid after it has been inspected and approved by the Employer's Agent as to be complaint with intended purpose.</p> <p>Payment of materials off site including deposits for special fittings and equipment as required from time to time in line with the signed agreement between the contractor and the supplier of such fittings or equipment will be paid upon furnishing the guarantee from a reputable institution, preferably the bank.</p>
6.10.3	<p>The percentage retention on the amounts due to the Contractor is 10% on each payment. The maximum value of retention is limited to 5% of the Contract Price.</p>
8.6.1.1.2	<p>The value of plant and materials supplied by the Employer to be included in the insurance sum is R Nil</p>
8.6.1.1.3	<p>The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is R Nil.</p>
8.6.1.3	<p>The limit of the liability insurance is R5 000 000.00 for any single claim – the number of claims to be unlimited during the construction and Defects Liability period.</p>
8.6.1.5	<p>In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:</p> <ul style="list-style-type: none"> - All Risk Insurance - The insurance of materials on site is necessary.
10.5.3	<p>The number of Adjudication Board Members to be appointed is 1.</p>
10.7.1	<p>The determination of disputes shall be by arbitration</p>
<p>Add the following clause:</p> <p>6.12</p>	<p><u>Payment for the labour-intensive component of the works:</u> Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.</p> <p><u>Contractor's default in payment to labourers and employees:</u> Any dispute between the Contractor and Labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.</p> <p>The Employer may, upon the Contractor defaulting payment, pays the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.</p> <p><i><u>Applicable labour laws:</u> The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R63 of 25 January 2002, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.</i></p>
<p>Add the following sub-clause:</p>	<p>The decision of the Adjudicator shall be enforceable with immediate effect as a matter of contractual obligation between the parties. However, if the dispute is still unresolved after Adjudication, the matter shall be referred to arbitration or court proceedings, whichever is applicable in terms of the contract.</p>

CONDITIONS OF EPWP COMPLIANCE

Payment for the labour-intensive component of the works

Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

Contractor's default in payment to labour and employees:

Any dispute between the Contractor and Labour, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.

The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honored in time, out of any moneys due or which may become due to the Contractor under the Contract.

Applicable labour laws

The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R63 of 25 January 2002, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

1. Introduction

- 1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (SPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a SPWP.
- 1.2 In this document –
 - a) "department" means any department of the State, implementing agent or contractor;
 - b) "employer" means any department, implementing agency or contractor that hires workers to work in elementary occupations on a SPWP;
 - c) "worker" means any person working in an elementary occupation on a SPWP;
 - d) "elementary occupation" means any occupation involving unskilled or semi-skilled work;
 - e) "management" means any person employed by a department or implementing agency to administer or execute an SPWP;
 - f) "task" means a fixed quantity of work;
 - g) "task-based work" means work in which a worker is paid a fixed rate for performing a task;
 - h) "task-rated worker" means a worker paid on the basis of the number of tasks completed;
 - i) "time-rated worker" means a worker paid on the basis of the length of time worked.

2. Terms of Work

- 2.1 Workers on a SPWP are employed on a temporary basis.
- 2.2 A worker may NOT be employed for longer than 24 months in any five-year cycle on a SPWP.
- 2.3 Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

3. Normal Hours of Work

- 3.1 An employer may not set tasks or hours of work that require a worker to work–
 - a) more than forty hours in any week
 - b) on more than five days in any week; and
 - c) for more than eight hours on any day.

-
- 3.2 An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.
 - 3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

4. Meal Breaks

- 4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
- 4.2 An employer and worker may agree on longer meal breaks.
- 4.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.
- 4.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5. Special Conditions for Security Guards

- 5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.
- 5.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

6. Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

7. Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

8. Work on Sundays and Public Holidays

- 8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.
- 8.2 Work on Sundays is paid at the ordinary rate of pay.
- 8.3 A task-rated worker who works on a public holiday must be paid –
 - a) the worker's daily task rate, if the worker works for less than four hours;
 - b) double the worker's daily task rate, if the worker works for more than four hours.
- 8.4 A time-rated worker who works on a public holiday must be paid –
 - a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
 - b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

9. Sick Leave

- 9.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- 9.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
- 9.3 A worker may accumulate a maximum of twelve days' sick leave in a year.
- 9.4 Accumulated sick-leave may not be transferred from one contract to another contract.
- 9.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- 9.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- 9.7 An employer must pay a worker sick pay on the worker's usual payday.
- 9.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –
 - a) absent from work for more than two consecutive days; or
 - b) absent from work on more than two occasions in any eight-week period.
- 9.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.
- 9.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

10. Maternity Leave

- 10.1 A worker may take up to four consecutive months' unpaid maternity leave.
- 10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.
- 10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- 10.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- 10.5 A worker may begin maternity leave –
 - a) four weeks before the expected date of birth; or
 - b) on an earlier date –
 - (i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - (ii) if agreed to between employer and worker; or
 - c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- 10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.
- 10.7 A worker who returns to work after maternity leave, has the right to start a new cycle of twenty- four months employment, unless the SPWP on which she was employed has ended.

11. Family Responsibility leave

- 11.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances –
 - a) when the employee's child is born;
 - b) when the employee's child is sick;
 - c) in the event of a death of –
 - (i) the employee's spouse or life partner;
 - (ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

12. Statement of Conditions

- 12.1 An employer must give a worker a statement containing the following details at the start of employment –
- a) the employer's name and address and the name of the SPWP;
 - b) the tasks or job that the worker is to perform; and
 - c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
 - d) the worker's rate of pay and how this is to be calculated;
 - e) the training that the worker will receive during the SPWP.
- 12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- 12.3 An employer must supply each worker with a copy of these conditions of employment.

13. Keeping Records

- 13.1 Every employer must keep a written record of at least the following –
- a) the worker's name and position;
 - b) in the case of a task-rated worker, the number of tasks completed by the worker;
 - c) in the case of a time-rated worker, the time worked by the worker;
 - d) payments made to each worker.
- 13.2 The employer must keep this record for a period of at least three years after the completion of the SPWP.

14. Payment

- 14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
- 14.2 A task-rated worker will only be paid for tasks that have been completed.
- 14.3 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.
- 14.4 A time-rated worker will be paid at the end of each month.
- 14.5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- 14.6 Payment in cash or by cheque must take place –
- a) at the workplace or at a place agreed to by the worker;
 - b) during the worker's working hours or within fifteen minutes of the start or finish of work;
 - c) in a sealed envelope which becomes the property of the worker.
- 14.7 An employer must give a worker the following information in writing –
- a) the period for which payment is made;
 - b) the numbers of tasks completed, or hours worked;
 - c) the worker's earnings;
 - d) any money deducted from the payment;
 - e) the actual amount paid to the worker.
- 14.8 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it
- 14.9 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

15. Deductions

- 15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- 15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- 15.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

-
- 15.4 An employer may not require or allow a worker to –
- repay any payment except an overpayment previously made by the employer by mistake;
 - state that the worker received a greater amount of money than the employer actually paid to the worker; or
 - pay the employer or any other person for having been employed.

16. Health and Safety

- 16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- 16.2 **Provision of Hand tools.** The Contractor shall throughout the project duration, provide his/her labour force with hand tools of adequate quality, sufficient in numbers and make the necessary provisions to maintain the tools in good and safe working conditions.
- 16.3 A worker must –
- work in a way that does not endanger his/her health and safety or that of any other person;
 - obey any health and safety instruction;
 - obey all health and safety rules of the SPWP;
 - use any personal protective equipment or clothing issued by the employer;
 - report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

17. Compensation for Injuries and Diseases

- 17.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- 17.2 A worker must report any work-related injury or occupational disease to their employer or manager.
- 17.3 The employer must report the accident or disease to the Compensation Commissioner.
- 17.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

18. Termination

- 18.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.
- 18.2 A worker will not receive severance pay on termination.
- 18.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
- 18.4 A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
- 18.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

19. Certificate of Service

- 19.1 On termination of employment, a worker is entitled to a certificate stating –
- the worker's full name;
 - the name and address of the employer;
 - the SPWP on which the worker worked;
 - the work performed by the worker;
 - any training received by the worker as part of the SPWP;
 - the period for which the worker worked on the SPWP;
 - any other information agreed on by the employer and worker.

PART 2: DATA PROVIDED BY THE CONTRACTOR

Clause

1.1.1.9 The Contractor is

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

Physical address: Postal address:

Telephone:
 Fax:
 email:

6.2.1 The security to be provided by the Contractor shall be one of the following:

TYPE OF SECURITY	CONTRACTOR'S CHOICE. INDICATE "YES" OR "NO"
Cash deposit of 10% of the Contract Sum (excluding VAT)	
Performance Guarantee of 10% of the Contract Sum (excluding VAT)	

C1.3: FORM OF GUARANTEE

[Note to Tenderer: This form should not be completed for the tender, but will be completed by the appointed Contractor.]

Employer: *(name and address)*.....
.....
.....

Contract No:

(Contract title)

WHEREAS

(Hereinafter referred to as "the Employer") entered into, on the day of 20.....,
a Contract with

(Hereinafter called "the Contractor") for *(CONTRACT TITLE)*

..... at

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

AND WHEREAS(hereinafter referred to as the Guarantor)
has/have at the request of the Contractor, agreed to give such security;

NOW THEREFORE WE,

do hereby guarantee to the Employer under renunciation of the benefits of division and excussion the due and faithful performance by the Contractor of all the terms and conditions of the said Contract, subject to the following conditions:

1. The Employer shall, without reference and/or notice to me/us, have complete liberty of action to act in any manner authorised and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the Due Completion Date of the Works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alterations of the Due Completion Date which the Employer may make, give, concede or agree to under the said Contract.
2. The Employer shall be entitled, without reference to us, to release any securities held by it, and to give time to or compound or make any other arrangement with the Contractor.
3. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of its intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.

4. My/Our total liability in terms hereof shall be limited to the sum of R
(in words)
(10 % of the Contract Price tender sum) which amount I/we agree to hold at your disposal.
5. I/We declare that I/we, on behalf of the Guarantor, waive the legal exceptions available to a guarantor and undertake to pay the said amount or such portion thereof as may be demanded, immediately on receipt of a written demand from you.

A certificate under your hand shall be sufficient and satisfactory evidence as to the amount of the Guarantor's liability for the purpose of enabling provisional sentence or any similar relief to be obtained against the Guarantor.

6. I/We hereby choose domicilium citandi et executandi for all purposes arising hereof at
7. This guarantee is neither negotiable nor transferable, and must be surrendered to the Guarantor in the event of the full amount of the Guarantee being paid to the Employer.

IN WITNESS WHEREOF this guarantee has been executed by us aton this
..... day of20.....

Signature:

Duly authorized to sign on behalf of: (*Guarantor*)

Address

As witnesses:

1.
2.

C1.4: ADJUDICATOR'S AGREEMENT

[Note to Tenderer: This form should not be completed for the tender, but will be completed by the appointed Contractor.]

This agreement is made on the.....day of 20..... between the

Employer (*name of company / organisation*).....

of (*address*)

and the Contractor (*name of company / organisation*).....

of(*address*).....

(hereinafter called **the Parties**)

and

(*name*)

of (*address*)

(hereinafter called **the Adjudicator**)

Disputes or differences may arise/have arisen* between the Parties under a Contract No. MIS 271 056 C for (*contract title*) and these disputes or differences shall be/have been* referred to adjudication in accordance with the CIDB Adjudication Procedure, (hereinafter called "**the Procedure**") and the Adjudicator may be or has been requested to act.
(* *Delete as necessary*)

IT IS NOW AGREED as follows:

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

SIGNED by:

(Signature):.....(Signature):..... (Signature):

Name:.....**Name:**..... **Name:**

who warrants that he/ she is
duly authorized to sign for and
on behalf of the **First Party** in
and on behalf of the presence
of

who warrants that he/ she is
duly authorized to sign for and
on behalf of the **Second Party**
presence of

the **Adjudicator** in the presence
of

Witness:.....**Witness:**..... **Witness:**.....
(Signature):.....(Signature): (Signature):.....

Name:.....**Name:**..... **Name:**.....

Address:Address: Address:.....

Date:..... Date:..... Date:.....

C1.5: AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT No 85 OF 1993

[Note to Tenderer: This form should not be completed for the tender but will be completed by the appointed Contractor.]

THIS AGREEMENT made at

on this the day of in the year

between (Hereinafter called "the Employer") of the one part, herein represented by

in his capacity as

and

(Hereinafter called "the Mandatary") of the other part, herein represented by

.....

in his capacity as

WHEREAS the Employer is desirous that certain works be constructed, viz.

CONTRACT No:

(*CONTRACT TITLE*)

.....

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

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Mandatary 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 5.16.1 of the General Conditions of Contract [*hereinafter referred to as "the GCC"*], or
 - (b) the date of termination of the Contract in terms of Clauses 9.1, 9.2 or 9.3 of the GCC.

3. The Mandatary 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;
 - (iii) Section 37 : Acts or omissions by employees or mandatories, and
 - (iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.
 - (b) The procedures and safety rules of the Employer as pertaining to the Mandatary and to all his sub-Contractors.
 4. In addition to the requirements of Clause 8.4 of the GCC and all relevant requirements of the Contract, the Mandatary 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 Mandatary is responsible for the compliance with the Act by all his sub-Contractors, whether or not selected and/or approved by the Employer.
 6. The Mandatary warrants that all his and his sub-Contractors' 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 Mandatary undertakes to ensure that he and/or sub-Contractors and/or their respective Employers will at all times comply with the following conditions:
 - (a) The Mandatary shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Mandatary shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatary 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 Mandatary 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 Mandatary and/or his employees and/or his sub-Contractors.
-

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:

WITNESS 1 2

NAME 1 2

(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATARY:

WITNESS 1 2

NAME 1 2

(IN CAPITALS)

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

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatary 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..... 2.....

NAME (in capitals): 1..... 2.....

C1.6: TRANSFER OF RIGHTS (PROFORMA)

TRANSFER OF RIGHTS AND INDEMNITY (To be completed during construction by successful Tenderer only)

Claim for materials on site, Payment Certificate No. Date:

Contract No: For (contract title)

..... I,

the undersigned (name of signatory) in my capacity

as..... of (name of Contractor)

duly authorised hereto on behalf of the Contractor hereby transfer, cede and assign all the Contractor's rights, title and interest in and to the materials and goods, for which evidence of bona fide ownership is attached hereto, unto and in favour of (name of Employer)

..... Insofar as the Contractor retains actual control of the materials and goods, the right of ownership thereof passes to the Employer by *constitutum possessorium*.

I herewith indemnify the Employer against any claim to and in respect of said materials by reason of the Contractor's sequestration or liquidation or of any defect in the Contractor's title to the materials and agree that no payment for materials on site will be made by the Employer until such time as I have submitted documentary proof of bona fide ownership of the said materials and goods.

This transfer shall become effective upon conclusion of the Contractor receiving payment from the Employer or from any other person on behalf of the Employer for the materials and goods as Materials on Site, payment of retention money thereon excluded.

I further confirm that I am fully responsible for all materials and goods listed under this Transfer of Rights and that they have been insured adequately against all risks and will remain insured until they are built into or used in the permanent works and taken over by the Employer.

This certificate of Transfer of Rights applies only to the materials and goods as listed in the following table.

DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE	AMOUNT	SUPPLIER
TOTAL VALUE OF MATERIALS AND GOODS					

Signed by: **Date:**
 for and on behalf of the Contractor.

Witnessed by: **Date:**

NOTE: This form, together with the documentary proof of ownership or proof of payment by the Contractor to the supplier, shall accompany the Contractor's claim for payment for materials on site in terms of Clause 6.10.1.5 of the General Conditions of Contract 2015.

If ownership still rests with the Supplier (no proof of payment by the Contractor) the Supplier shall cede ownership of materials to the Client by completing and signing this form.

C1.7: Supply Chain Management Policy

Please refer to O.R. Tambo Procurement Policy.



**O.R. TAMBO
DISTRICT MUNICIPALITY**

VOLUME 1

CONTRACT

C2. PRICING DATA

PRICING DATA

INDEX

Section	Description	Page No
C2.1	PRICING INSTRUCTIONS	PD.2
C2.2	SCHEDULES QUANTITIES	PD 5

C2.1 PRICING INSTRUCTIONS

1. GENERAL

The Bill of Quantities forms part of the Contract Documents and must be read and priced in conjunction with all the other documents comprising the Contract Documents, which include the Conditions of Tender, Conditions of Contract, the Specifications (including the Project Specification) and the Drawings.

The Tenderer is advised to check the number of pages and should any be found missing or in duplicate or the figures or writing indistinct or these Bill of Quantities contain any obvious errors, the Tenderer must inform the Engineer at once and have it rectified. No liability whatsoever will be admitted in respect of errors due to the foregoing.

Should there be any doubt or obscurity as to the meaning of any particular item, the Tenderer must obtain an explanation of it, in writing, from the Engineer. No claims for extras arising from any such doubt or obscurity will be admitted after delivery of the tender.

2. QUANTITIES REFLECTED IN THE BILL

The quantities given in the Bill of Quantities are the estimated quantities of work to be done, and will be subject to re-measurement during the execution of the work. The Contractor shall obtain the Engineer's detailed instructions for all work before ordering any materials or executing work or making arrangements for it. Any additional works or any extension of work quantities over and above that contained in the Bill of Quantities shall be agreed before the work is completed in the form of an Extra Works Authorization in the case of additional works or a Change Order in the case of an increase in quantities, whichever is the applicable. All documentation must be signed by the Engineer before the work is commenced and such additional works or increased quantities will not be paid for if certified for payment without the approved documentation.

The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Bill of Quantities, and the contract price for the completed contract shall be computed at the relevant unit rates and prices, all in accordance with the General and Special Conditions of Contract, the Specifications and Project Specifications and the Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste.

The validity of the contract will in no way be affected by differences between the quantities in the Bill of Quantities and the quantities finally certified for payment.

3. PRICING OF THE BILL OF QUANTITIES

All unit prices, extensions and totals must be filled in **black ink** and unit prices, extensions and totals submitted in electronic format will not be acceptable.

The prices and rates to be inserted by the Tenderer in the Bill of Quantities shall be the full inclusive prices to be paid by the Employer for the work described under the several items and shall include full compensation for all costs and expenses that may be required in and for the completion of the work and maintenance during the defects notification period of all the work described and as shown on the drawings as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based. Reasonable unit rates and prices shall be entered in the Bill of Quantities as these will be used as a basis for assessment of payment for additional work that may have to be carried out.

Each item shall be priced and extended to the "Total" column by the Tenderer, with the exception of the items for which only rates are required, or items which already have Prime Cost or Provisional Sums affixed thereto. If the Contractor omits to price any items in the Bill of Quantities, then these items will be considered to have a nil rate or price.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract and shall be reflected in the Bill of Quantities as having a nil rate or price.

The Tenderer shall fill in rates for all items where the words "rate only" appears in the "Total" column. "Rate Only" items have been included where:

- (a) an alternative item or material is contemplated and may be used at the discretion of the Engineer;
- (b) variations of specified components in the make-up of a pay item may be expected; and
- (c) no work under the item is foreseen at tender stage but the possibility that such work may be required is not excluded.

For "Rate Only" items, no quantities are given in the "Quantity" column but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall however note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates, which the Employer may regard as unbalanced.

All rates and amounts quoted in the Bill of Quantities shall be in Rands and cents and shall include all levies and taxes (other than VAT). VAT will be added in the summary of the Bill of Quantities.

4. PROVISIONAL SUMS

Where Provisional sums or Prime Cost sums are provided for items in the Bill of Quantities, payment for the work done under such items will be made in accordance with Clause 6.6 of the General Conditions of Contract. The Employer reserves the right, during the execution of the works, to adjust the stated amounts upwards or downwards according to the work actually done under the item, or the item may be omitted altogether, without affecting the validity of the Contract.

The Tenderer shall not under any circumstances whatsoever delete or amend any of the sums inserted in the "Amount" column of the Bill of Quantities and in the Summary of the Bill of Quantities unless ordered or authorized in writing by the Employer before closure of tenders. Unauthorized changes made by the Tenderer to provisional items in the Bill of Quantities, or to the stated provisional percentages and sums in the Summary of the Bill of Quantities, will not be permissible.

5. CORRECTION OF ENTRIES

Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry in black ink, and the alteration must be initialled by the Tenderer.

6. ARITHMETICAL ERRORS

Arithmetical errors found in the Bill of Quantities because of faulty multiplication or addition will be corrected by the Engineer at the tender evaluation stage, as set out in the Conditions of Tender F3.9.

7. MONTHLY PAYMENTS

Unless otherwise specified in the Specifications or Project Specifications, progress payments in Interim Certificates, referred to in Clause 6.10 of the General Conditions of Contract, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Engineer and based on the measure in which the work actually carried out relates to the extent of the work to be done by the Contractor.

8. LABOUR INTENSIVE CONSTRUCTION ITEMS (Li)

Those parts of the contract to be constructed using labour-intensive methods **have been marked in the schedule of quantities with the letters LI in a separate column** filled in against every item so

designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.

Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

9. CONTINGENCY

The sum provided under contingency in the Bill of Quantities is under the sole control of the Employer and may be deducted in whole or in part and shall only be expended by order of the Employer as Variation Order

10. UNITS OF MEASUREMENT

The units of measurement described in the Bill of Quantities are metric units for which the standard international abbreviations are used. Abbreviations used in the Bill of Quantities, including some non-standard abbreviations, are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1000 kg)
m ²	=	square metre	No.	=	number
m ² -pass	=	square metre-pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewton
m ³	=	cubic metre	MN.m	=	meganewton-metre
m ³ .km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
ℓ	=	litre	Prov sum	=	Provisional sum
kℓ	=	kilolitre	%	=	per cent
MPa	=	megapascal	pers. Days	=	person days
kW	=	kilowatt			

C2.2 PRICING SCHEDULE – BILL OF QUANTITIES

Schedule of Quantities

The Bill of Quantities for pricing follows and contains the following sections:

SECTION	DESCRIPTION	PAGE
1.	PRELIMINARY & GENERAL	PD.6
2.	DAYWORKS, PROVISIONAL SUMS & PRIME COST ITEMS	PD.8
3.	DN315 &DN200 GRAVITY MAINS TO NGXANGI & MAMBETHU RESERVOIRS	PD.10
4.	STRUCTURES	PD.14
5.	MISCELLANEOUS	PD.15
	SUMMARY OF BILL OF QUANTITIES	PD.16
	DECLARATION	PD.17

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
1	SANS 1200A	FIXED - CHARGE ITEMS				
1.1	8.3.1	Contractual Requirements	Sum	1		
		Establishment of Facilities on Site:				
	8.3.2.1	1) Facilities for Engineer (SANS 1200 AB)				
1.2	PSAB 3.2	b) Meeting room	Sum	1		
1.3	PSAB 3.1	c) Nameboards (2 No.)	Sum	1		
1.4	PSAB 4.2	e) Survey equipment	Sum	1		
1.5	PSAB 3.2	f) Covered Parking Bays (2 No.)	Sum	1		
1.6		g) All other specified facilities (incl wifi internet connection and printer)	Sum	1		
	8.3.2.2	2) Facilities for Contractors				
1.7		a) Office and storage sheds	Sum	1		
1.8		b) Workshops	Sum	1		
1.9		c) Laboratories	Sum	1		
1.10		d) Living accommodation	Sum	1		
1.11		e) Ablution and latrine facilities	Sum	1		
1.12		f) Tools and equipment	Sum	1		
1.13		g) Water supplied, electric power and communications.	Sum	1		
1.14		h) Dealing with water (Sub-clause 5.5)	Sum	1		
1.15		i) Access (Sub-clause 5.8)	Sum	1		
1.16		j) Plant	Sum	1		
1.17	8.3.3 PSA 8.10	General Responsibilities and other fixed charge obligations (including making allowance for effects and payments taking up to 60 days from date of invoice)	Sum	1		
1.18	8.3.4	Removal of Engineer's and Contractor's site establishment on completion of works	Sum	1		
1.19	PSA 8.9 PS - OHS	Fixed charges associated with complying with Health and Safety Requirements:				
1.20		a) Preparation of risk assessments, safe work procedures, the project H&S File, the H&S Plan, medicals for all workers, the provision of PPE and protective clothing, and all other fixed charge H&S matters that fulfil OHS Act 85 of 1993 and construction regulation 2014 requirements	Sum	1		
1.21		b) Completing and checking the Project H&S File and handing over the Client on completion of the works and exit medicals for all workers	Sum	1		
1.22		c) Provision of HIV/Aids Awareness plan and all necessary fixed charge items to achieve compliance with SANS 1921 Part 6 HIV/Aids Awareness	Sum	1		
1.23	PSA 8.9	Fixed charges associated with complying with the Environmental Management Plan	Sum	1		
1.24	PSA 8.9	Fixed charges associated with complying with the Environmental Management Plan	Sum	1		
	8.4 PSAB 8.2.1	TIME-RELATED ITEMS				
1.25	8.4.1	Contractual Requirements	Sum	1		
1.26	8.4.2	Operate and maintain of Facilities on Site for the duration of the construction, except where otherwise stated:				
	8.4.2.1	1) Facilities for Engineer as per PSAB clause				
	PSAB 3.2/ PSAB 5.2 PSAB 3.2	a) Furnished office	Sum	1		
		b) Meeting room	Sum	1		
1.28	PSAB 3.1	c) Nameboards (2 No.)	Sum	1		
1.29	PSAB 5.5	d) Survey assistant	Sum	1		
1.30	PSAB 4.2	e) Survey equipment	Sum	1		
1.31	PSAB 3.2	f) Covered Parking Bays (2 No.)	Sum	1		
1.32		g) All other specified facilities (incl wifi internet connection and printer)	Sum	1		
TOTAL TO NEXT PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
TOTAL BROUGHT FORWARD						
1.33	8.4.2.2	2) Facilities for Contractor				
		a) Office and storage sheds	Sum	1		
1.34		b) Workshops	Sum	1		
1.35		c) Laboratories	Sum	1		
1.36		d) Living accommodation	Sum	1		
1.37		e) Ablution and latrine facilities	Sum	1		
1.38		f) Tools and equipment	Sum	1		
1.39		g) Water supplied, electric power and communications.	Sum	1		
1.40		h) Dealing with water (Sub-clause 5.5)	Sum	1		
1.41		i) Access (Sub-clause 5.8)	Sum	1		
1.42		j) Plant	Sum	1		
1.43	8.4.3	Supervision for duration of construction	Sum	1		
1.44	8.4.4	Company and head office overhead costs for the duration of the contract	Sum	1		
		General Responsibilities and other time-related obligations	Sum	1		
1.45	8.4.5 PSA 8.10	(including making allowance for effects and payments taking up to 60 days from date of invoice)				
1.46	PSA 8.9 PS - OHS	Time-related charges associated with complying with Health and Safety Requirements:				
1.47		a) Updating and amending the risk assessments, safe work procedures, the project H&S File, the H&S Plan, medicals for all workers, the provision of PPE and protective clothing and all other H&S matters that fulfil OHS Act 85 of 1993 and construction regulation 2014	Sum	1		
1.48		b) Full compliance with all H&S matters during the construction of the works under the Contract	Sum	1		
1.49		c) Compliance with SANS 1921 Part 6 HIV/Aids Awareness plan during the contract	Sum	1		
1.50	PSA 8.9	Time-related charges associated with complying with the Environmental Management Plan	Sum	1		
1.51	8.8	TEMPORARY WORKS				
1.52	8.8.1	Construct and maintain access to works	Sum	1		
1.53	8.8.2	Accommodation of traffic	Sum	1		
1.54	8.8.4	EXISTING SERVICES				
1.55		(c) Excavate by hand in soft material to expose services. (Provisional)	m ³	20		
SCHEDULE 1 TAKEN TO SUMMARY PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
2		DAYWORKS, PROVISIONAL SUMS AND PRIME COST ITEMS				
2.1	SANS 1200A 8.7	DAYWORKS				
		LABOUR				
2.1.1		a) Team leader / charge hand	hr	50		
2.1.2		b) Artisan	hr	50		
2.1.3		c) Skilled	hr	100		
2.1.4		d) Semi-skilled	hr	200		
2.1.5		e) Unskilled	hr	200		
	8.7	PLANT				
		For plant used in execution of dayworks				
2.1.6		As agreed with engineer	PC Sum	1	100 000,00	R100 000,00
2.1.7		Mark up on item 2.1.6 above	%	100000		
	8.7	MATERIALS				
2.1.8		For materials used in execution of dayworks as agreed with	PC Sum	1	100 000,00	R100 000,00
2.1.9		Mark up on item 2.1.8 above	%	100000		
2.2	8.5	SUM STATED PROVISIONALLY BY THE ENGINEER ENGINEER				
2.2.1		Cellphone allowance for the Engineer for the duration of the contract (R1000 pm).	Prov. Sum	1	8 000,00	R8 000,00
2.2.2		Overheads, Charges and Profit on item 2.2.1 above	%	8 000,00		
2.2.3		Transportation for the Engineer for the duration of the contract (R25000 pm).	Prov. Sum	1	200 000,00	R200 000,00
2.2.4		Overheads, Charges and Profit on item 2.2.3 above	%	R 200 000,00		
2.2.5		Accommodation for the Engineer for the duration of the contract (R55000 pm).	Prov. Sum	1	44 000,00	R44 000,00
2.2.6		Overheads, Charges and Profit on item 2.2.5 above	%	44 000,00		
2.2.7		Equipment for the Engineer	Prov. Sum	1	50 000,00	R50 000,00
2.2.8		Overheads, Charges and Profit on item 2.2.7 above	%	50000		
2.2.9		Removal and re-establishment of existing services by Telkom, Eskom and/or the Local Authority	Prov. Sum	1	200 000,00	R200 000,00
2.2.10		Overheads, Charges and Profit on item 2.2.9 above	%	200000		
		TOPOGRAPHICAL SURVEY				
2.2.11		Ad-hoc survey as requested by the Engineer.	Prov. Sum	1	110 000,00	R110 000,00
2.2.12		Overheads, Charges and profit on item 2.2.11	%	110000		
		COMMUNITY LIASON OFFICER				
2.2.13		Employment of CLO for the duration of the contract (R7000 pm plus R500 pm cellphone allowance)	Prov. Sum	1	60 000,00	R60 000,00
2.2.14		Overheads, Charges and Profit on item 2.2.13 above	%	60 000,00		
2.2.15		Employment of PSC for duration of contract (10 No. at R500 pm each)	Prov. Sum	1	40 000,00	R40 000,00
2.2.16		Overheads, Charges and Profit on item 2.2.15 above	%	40 000,00		
2.2.17		Liaison with ISD consultant, CLO and local affected individuals and communities	Prov. Sum	1	360 000,00	R360 000,00
2.2.18		Overheads, Charges and Profit on item 2.2.17 above	%	360 000,00		
		ENVIRONMENTAL & OH&S OFFICERS				
2.2.19		Cost of Environmental Compliance Officer (R21000 pm)	Prov. Sum	1	168 000,00	R168 000,00
2.2.20		Overheads, Charges and Profit on item 2.2.19 above	%	168 000,00		
2.2.21		Cost of Employer's OH&S representative (R18 500pm Plus Work Permit)	Prov. Sum	1	268 000,00	R268 000,00
2.2.22		Overheads, Charges and Profit on item 2.2.21 above	%	268 000,00		
		TRAINING				
2.2.23		Allowance for training of local unskilled labour	Prov. Sum	1	100 000,00	R100 000,00
2.2.24		Overheads, Charges and profit on item 2.2.23 above	%	100000		
2.2.25		Training allowance paid to targeted labour in terms of formal training	Prov. Sum	1	80 000,00	R80 000,00
2.2.26		Overheads, Charges and profit on item 2.2.25 above	%	80000		
2.2.27		Extra over for the administration of payment of training allowances to targeted labour	Prov. Sum	1	20 000,00	R20 000,00
2.2.28		Overheads, Charges and profit on item 2.2.27 above	%	20000		
2.2.29		Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity to the site	Prov. Sum	1	18 000,00	R18 000,00
2.2.30		Overheads, Charges and profit on item 2.2.29 above	%	18000		
TOTAL TO NEXT PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
TOTAL BROUGHT FORWARD						
		STUDENT				
2.2.31		2x Student monthly allowance for the for the duration of the contract (R10000 pm).	Prov. Sum	1	160 000,00	R160 000,00
2.2.32		Overheads, Charges and Profit on item 2.2.31 above	%	160 000,00		
2.2.33		Transportation for the Student for the duration of the contract (R1000 pm	Prov. Sum	1	8 000,00	R8 000,00
2.2.34		Overheads, Charges and Profit on item 2.2.34 above	%	8000		
2.2.35		Accommodation for the 2xStudent for the duration of the contract (R2500 pm).	Prov. Sum	1	40 000,00	R40 000,00
2.2.36		Overheads, Charges and Profit on item 2.2.35 above	%	40000		
		REVEGETATION				
2.2.37	8.6	Revegetation of site.	Prov. Sum	1	50 000,00	R50 000,00
2.2.38		Overheads, charges and profit on Item No 2.2.37	%	50000		
2.3		PRIME COST ITEMS				
2.3.1		Additional Acceptance control testing as may be required by the Engineer (Note that the Contractor's tendered rates are to include for all Quality Control testing required to achieve compliance with the specifications and that this scheduled item is to cover only the Engineer's additional testing that the Engineer may require)	PC Sum	1	50 000,00	R50 000,00
2.3.2		Overheads, Charges and Profit on item 2.3.1 above	%	50000		
2.3.3		Purchase and deliver compensation items (bags of fertilizer or cement etc.) to affected residents as directed by the Engineer	PC Sum	1	100 000,00	R100 000,00
2.3.4		Overheads, Charges and Profit on item 2.3.1 above	%	100000		
SCHEDULE 2 CARRIED TO SUMMARY PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
3		GRAVITY MAINS TO MAMBETHU				
3.1		SITE CLEARANCE				
3.2	SANS 1200DB	EARTHWORKS (PIPE TRENCHES)				
		Site Clearance and Removal of Topsoil				
3.2.1	8.3.1	a) Clear and grub area including clearing vegetation and trees of girth up to 1 m along the route of the pipeline (working strip of up to 10m width)	m	9600		
3.2.2	8.3.1	c) Remove topsoil to a depth of 150mm along the route of the pipeline for up to 10m wide working strip over trench, Stockpile and maintain	m ²	48000		
3.2.3	SANS D 8.3.10	Replace topsoil on completion	m ²	9600,45		
3.3		DEMARICATION FENCING				
3.3.1	PSA 8.9	Demarcation of construction corridor each side (1m high poles painted white, at 15m intervals. Measured by length of pipeline)	m	5000		
3.3.2	PSC 8.5	Supply and install demarcation fence on both sides of the working area during construction and remove on completion of works (backfilling). Fence is to comprise Bonnox 4 x 4 mesh fencing (maximum opening not exceeding 100mm) Bonnox pattern 1972/4, with straining posts, straining wires, stays, etc as required. Plastic warning tape is to be wound zig-zag top wire to bottom wire along full length and warning signs in English and isiXhosa in appropriate locations. Rate includes for provision and control of gates for construction access purposes as and where required. Rate to include for surveillance of fencing integrity on a daily basis and repair on same-day basis.	m	5000	CPG	CPG
3.3.3	PSC 8.6	Extra over 3.2.2 for fixing suitably robust plastic square mesh on demarcation fence in occupied areas to act as a childproof barrier	m	500	CPG	CPG
3.3.4		EXCAVATION				
3.4	SANS 1200DB 8.3.2 PSDB 8.1.4 PSDB 8.3.3.4	EXCAVATION (PIPE TRENCHES) (a) Excavate in all material for trenches backfill and dispose of surplus and unsuitable material. Rate to include for all temporary works including trimming, shoring and dewatering where necessary: Over Up to and including				
3.4.1		0m 1.5m	m	100		
3.4.2		1.5m 2.5m	m	9600		
3.4.3		2,5m 3.5m	m	50		
3.4.4		3,5m 4.0m	m	120		
	8.3.2	(b) Extra over item 3.4.1 to 3.4.4 for excavation in:				
3.4.5		1) Intermediate material	m ³	9216		
3.4.6		2) Hard rock (blasting)	m ³	600		
3.4.7		3) Hard rock excavation near residential buildings (Mounted hydraulic breaker where directed by the Engineer)	m ³	200		
3.4.8	8.3.2	(c) Excavate unsuitable material from the trench bottom and dispose of at spoil site. (Provisional)	m ³	100		
3.5	8.3.3	EXCAVATION ANCILLARIES				
	8.3.3.1	Make up deficiency in backfill material: (Provisional)				
3.5.1		a) from other necessary excavations on site	m ³	1587,6		
3.5.2	8.3.3.3	Selected fill material compacted in 150 mm thick layers to 93% Mod AASHTO in road reserve. Location and depths to be specified by Engineer (Prov)	m ³	1050		
3.5.3	PSDB 8.5	Stabilise backfill on steep slopes using precast concrete lintel beams as per drawing J31067/105	No.	21		
	8.3.6	FINISHING				
3.5.4	8.3.6.1	a) Reinstate gravel finishing roads and drainage after construction (Remove spoil and other foreign material from road surface, fill in pockets with G7 gravel and compact to 95% mod AASHTO to form even travelling surface)	m ³	1050		
TOTAL TO NEXT PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
TOTAL BROUGHT FORWARD						
3.5.5		BEDDING				
3.6	SANS 1200LB	BEDDING FROM TRENCH EXCAVATIONS (PIPES)				
	8.2.1	Provision of bedding material from trench excavations				
3.6.1		a) Selected granular material	m ³	1587,6		
3.7		BEDDING IMPORTATION				
	8.2.2	Provision of bedding material imported from commercial sources selected by the Contractor				
3.7.1		a) Selected granular material	m ³	5184		
3.7.2		PIPEWORK				
3.8	SANS 1200L	MEDIUM PRESSURE PIPELINES: upvc-Magcakeni to Mambethu village				
	8.3.1	Supply, lay, bed, test and disinfect on flexible pipe bedding, complete with couplings (Conforming with SANS 966: 2004 in 6m lengths each fitted at one end with a Z-LOK coupling mechanical joint):				
		uPVC Class 12 pressure pipe:				
3.8.1		a) 315mm diameter	m	5600		
		a) 250mm diameter	m	6000		
	PSL 8.18					
3.8.2		a) Backfilling over/around pipes on steep slopes (where directed by the Engineer)	m ³	100		
3.8.3		b) Road reserve and water crossings, over/around pipes (where directed by the Engineer)	m ³	125		
3.8.4		TIE-IN OFF 1ML RESERVOIR AT NGXANGI				
		Extra-over item 3.8.1 and other pipework fittings items for all additional costs associated with tie-in	Sum	1		
3.9	SANS 1200L	MEDIUM PRESSURE PIPELINES: uPVC-Magcakeni to Mambethu				
	PSL 8.18	Extra over item 3.9 for stabilising bedding material and selected backfill material with 8% cement for:				
3.9.1		a) Backfilling over/around pipes on steep slopes (where directed by the Engineer)	m ³	100		
3.9.2		b) Road reserve and water crossings, over/around pipes (where directed by the Engineer)	m ³	100		
3.10	SANS 1200L	PIPE FITTINGS				
	8.2.2	Extra over item 3.9 for pipe specials complete with couplings (Cast iron fittings with Z-LOK coupling for mPVC pipes unless otherwise stated):				
3.10.2		uPVC Class 12, 16,20,25 Fittings				
		b) 315mm diameter				
3.10.2.1		90 degree bends	No.	3		
3.10.2.2		45 degree bends	No.	1		
3.10.2.3		22.5 degree bends	No.	30		
3.10.2.4		11.25 degree bends	No.	12		
TOTAL TO NEXT PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
TOTAL BROUGHT FORWARD						
3.11	SANS 1200L	VALVE ASSEMBLIES				
	8.2.5	Extra over item 3.9 for the supply of materials, fabrication, handling, laying, jointing, testing and bedding of DN160				
		2) Isolating Valve Assembly, ref drawing J31067/204:				
		All fittings, specials and flange drillings PN 16				
3.11.5		Item IV1: PVC flange adaptor to suit 250mm pipe socket/f	No.	8		
3.11.6		Item IV2: Rilsan coated and lined mild steel puddle pipe, flanged both ends	No.	8		
3.11.7		Item IV3: Flanged isolating valve	No.	4		
3.11.8		Item IV4: Dismantling Joint	No.	4		
		3) Air Valve assembly ref drawing J31067/203				
		All fittings, specials and flange drillings PN 25				
3.11.9		Item 1: DN200xDN200 Cast iron socketed Tee to suit uPVC Pipe with Flanged Branch	No.	13		
3.11.10		Item 2: Rilsan lined and coated flanged, MS Riser (400mm Long F/F) Welded onto blank flange with central hole				
3.11.11		DN80	No.	13		
3.11.12		Item 3: RSV gate valve with handwheel, flanged both ends				
3.11.12		DN80	No.	13		
3.11.13		Item 4: Flanged Antishock air release and vacuum break valve or similar approved				
3.11.13		DN80	No.	13		
		4) Scour Valve Assembly, ref drawing J31067/203				
		All fittings, specials and flange drillings PN 25				
3.11.14		Item 1: 250mm DN Class 9 PVC-u Spindle Sleeve	No.	12		
3.11.15		Item 2: 25mm GMS Schedule 40 Tube with valve cap top one end and cap adaptor other end,m length to suit (Approx 1.5m)	No.	12		
3.11.16		Item 3: Cast Iron, socketed Scour Tee (flanged branch) DN250 x DN80	No.	12		
3.11.17		Item 4: Flanged Wedge Gate-valve with cap-top				
3.11.17		DN80	No.	12		
3.11.18		Item 5: 3000mm Flanged uPVC Pipe				
3.11.18		DN80	No.	12		
3.11.19		Item 6: Stub Flange (Welded on)				
3.11.19		DN80	No.	12		
3.11.20		Item 7: Outlet Pipe, PE 100, HDPE (Max 6m Length)				
3.11.20		DN80	No.	7		
		5) Water Meter Assembly ,ref drawing J31067/204:				
		all fittings, specials and flange drillings PN 25				
3.11.21		Item WM1: VJ flange adaptor to suit PVC pipe				
3.11.21		DN200	No.	2		
3.11.22		Item WM2: Rilsan coated and lined mild steel flanged eccentric reducer				
3.11.22		200x100 reducer (min 450mm)	No.	2		
3.11.23		Item WM3: Rilsan coated and lined mild steel pipe, flanged one end and plain end the other				
3.11.23		DN100 950mm long. Flanged both ends	No.	2		
3.11.24		Item WM4: VJ Coupling				
3.11.24		DN100 coupling	No.	1		
3.11.25		Item WM5: "SAFMAG" battery operated electro-magnetic with integral read-out, flanged water meter				
3.11.25		DN100 meter	No.	0		
3.11.26		Item WM6: Rilsan coated and lined mild steel pipe, flanged both ends				
3.11.26		DN100 950mm long. Flanged both ends	No.	0		
TOTAL TO NEXT PAGE						

O. R. TAMBO DISTRICT MUNICIPALITY
LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU
BULK WATER INFRASTRUCTURE AUGMENTATION
CONTRACT 3

Contract No: MIS 271 056 C
Tender and Contract
Pricing Data

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
TOTAL BROUGHT FORWARD						
3.12	PSGA 8.4	ANCHOR/THRUST BLOCKS				
		1) Anchor Block Details				
		,ref drawings J31067/201 and J31067/202:				
3.12.1		a) Restricted in all materials excavation for anchor/ thrust blocks	m³	102		
3.12.2		b) Reinforced concrete thrust blocks complete including concrete, rough formwork and steel (100kg/m³) as per detail drawings (excluding excavation)	No.	70	CPG	CPG
3.12.3		c) Mass concrete anchor blocks including rough formwork, as per detail drawing (including mass concrete portion of reinforced concrete anchor blocks)	m³	5		
3.12.4		d) Reinforced concrete thrust beam (for hydraulic testing) complete including excavation, concrete reinforcing (100 kg/ m3) and rough formwork	No.	5		
3.12.5		e) Flanged 1.5m long Rislán coated and lined puddle pipe as per detail drawing including steel to uPVC adaptors and temporary blank flange (testing every 2000m and at each end)	No.	4		
3.13	SANS 1200L	VALVE CHAMBERS				
3.13.1	8.2.14 (a)	1) AIR VALVE MANHOLE (ref detail drawing J31067/203)	No.	13	CPG	CPG
3.13.2		Item 1: 4 No. DN75 uPVC Sleeves built-in each side complete with vermin proofing	No.	156		Rate Only
3.13.3		Item 2: 100 thick RC slab - grade 25 MPa/19 Reinforced as detailed	No.	39		Rate Only
3.13.4		Item 3: 220mm Brickwork	m²	355		Rate Only
3.13.5		Item 4: 100mm deep 13mm stone layer	m²	43		Rate Only
3.13.6		Item 5: Compacted 8% cement stabilized sand (including the backfill are around the mainline pipe)	m³	20		Rate Only
3.13.7		Item 6: Step irons 250 c/c staggered horizontally 300 c/c staggered vertically	No.	39		Rate Only
3.13.8		Item 9: Supply and install 600 x 600 GMS hinged, lockable cover and frame	No.	39		Rate Only
3.13.9	8.2.14 (b)	Extra over item 6.5.8 for manhole depth exceeding 1.5m per 0.25m additional depth	0.25m	78		Rate Only
3.13.10	8.2.14 (a)	2) SCOUR VALVE MANHOLE (As per detail drawing J31067/203)	No.	12	CPG	CPG
3.13.11		Item 1: Supply and install 750mm Precast Concrete manhole rings	No.	30		Rate Only
3.13.12		Item 2: Supply and install 25/19 MPa concrete cover slab (medium duty)	No.	30		Rate Only
3.13.13		Item 3: Extra over item 6.5.12: Supply and cast polymer concrete municipal valve box type 3A by "Maverick Trading" or similar including cap and chain	No.	30		Rate Only
3.13.14		Item 4: Supply and install 300x100 Grade 15/19 MPa Concrete footing (circular)	m³	2.5		Rate Only
3.13.15		Item 5: Supply and construct 150mm deep chamber floor with 19mm Stone	m²	15		Rate Only
3.13.16		Item 6: Supply and construct 150mm layer free-draining selected granular material compacted to 93% MOD AASHTO	m²	15		Rate Only
3.13.17	8.2.14 (a)	3) ISOLATION VALVE CHAMBER (See drawing J31067/204) (1800x2400)	No.	3	CPG	CPG
3.13.18		Item 1: Supply and install 650x650 hinged cover frame as standard detail drawings	No.	2		Rate Only
3.13.19		Item 2: 4 No. 75mm dia uPVC vent pipes built-in	No.	8		Rate Only
3.13.20		Item 3: 100mm thick reinforced concrete 25 MPa/ 19mm roof slab with 10 bars at 200 c/c, both directions	m²	5		Rate Only
3.13.21		Item 4: 230mm brickwork plastered internally	m²	7		Rate Only
3.13.22		Item 5: 4 No. (2 Each Side) Y12L bar 600x600 horizontal leg under floor mesh	No.	8		Rate Only
3.13.23		Item 6: 50 mm blinding	m²	5		Rate Only
3.13.24		Item 7: Mesh ref. 316 centrally placed	No.	2		Rate Only
3.13.25		Item 8: 15 MPa x 100mm thick unreinforced base slab	m²	5		Rate Only
3.13.26	8.2.14 (b)	Extra over item 3.13.17 for chamber wall height exceeding 1000mm per 250mm additional depth	No.	20		Rate Only
3.13.27	8.2.14 (a)	4) WATER METER CHAMBER (See drawing J31067/204) (1400x1400)	No.	2	CPG	CPG
3.13.28		Item 1: Supply and install 650x650 hinged cover frame as standard detail drawings	No.	1		Rate Only
3.13.29		Item 2: 4 No. 75mm dia uPVC vent pipes built-in	No.	4		Rate Only
3.13.30		Item 3: 100mm thick reinforced concrete 25 MPa/ 19mm roof slab with 10 bars at 200 c/c, both directions	m²	3		Rate Only
3.13.31		Item 4: 230mm brickwork plastered internally	m²	4		Rate Only
3.13.32		Item 5: Concrete pedestal 15 Mpa	No.	1		Rate Only
3.13.33		Item 6: 15 MPa x 100mm thick unreinforced base slab	m²	5		Rate Only
3.13.26	8.2.14 (b)	Extra over item 3.13.27 for chamber wall height exceeding 1000mm per 250mm additional depth	No.	20		Rate Only
SCHEDULE 3 CARRIED TO SUMMARY PAGE						

O. R. TAMBO DISTRICT MUNICIPALITY
LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU
BULK WATER INFRASTRUCTURE AUGMENTATION
CONTRACT 3

Contract №: MIS 271 056 C
Tender and Contract
Pricing Data

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
4		STRUCTURES				
4.1		CONSTRUCTION OF 1ML STEEL ELEVATED TANK AT NGXAKA VILLAGE INCLUDING CHAMBERS & VALVES, TESTING & DISINFECTING	Prov. Sum	1	5 443 429,25	R5 443 429,25
		RESTRICTED EXCAVATION IN ALL MATERIALS				
4.1.1	SANS 1200C 8.2.1	Site clearance	m ²	400		
4.1.2	PSDA 8.3.2(a)	Excavation in all material and dispose, backfill after foundation has been cast.	m ³	800		
	SANS 1200 GA 8.1.1.4	FORMWORK				
4.1.3	8.2.1	Rough vertical plane to outside of walls of foundation base	m ²	80		
4.1.4	8.2.2	Smooth horizontal plane to roof soffit	m ²	400		
		UNFORMED SURFACE FINISH				
4.1.5	8.4.4	Wood float to roof slab	m ²	400		
4.1.6	8.4.4	Steel float to sides	m ²	80		
		REINFORCEMENT				
4.1.7	8.3.1	High tensile bars (12mm)	tonnes	10		
		CONCRETE				
	PSGA 8.4.1	Prescribed Mix Concrete				
		Concrete grade 15MPa/19mm				
4.1.13		50 mm blinding	m ²	420		
4.1.14		70mm to 25mm thick screed to chamber floor	m ³	31,5		
	PSGA 5.4.1.5	Strength concrete				
		Concrete grade 25MPa/19mm				
4.1.15		Foundation base	m ³	225		
		HYDRAULIC PRESSURE TESTING				
4.1.6	PSL7	Allow for reservoir filling with water for water tightness testing	Sum	1		
4.1.7		Supply and install temporary blank flanges and/or spade pieces as required, provide temporary anchorages, and pressure test the pipeline and all fittings, valves and appurtenances	Sum	1		
SCHEDULE 4 CARRIED TO SUMMARY PAGE						

Item Ref	Payment Refers	ITEM DESCRIPTION	Unit	Quantity	Rate	Amount R
5		MISCELLANEOUS				
5.1		PIPEWORK				
5.1.1		Supply and install pipeline markers as per detail drawing complete	No.	220	CPG	CPG
5.2	PSL 8.2.17	Make connection to existing flanges at reservoir flange at inlet chambers (fitting measured separately)	sum	1		
5.3	SABS 1200DK	EROSION PROTECTION				
		SCOUR VALVE				
5.3.1	8.2.2	a) Supply and installation of 1m x 1m x 1m Gabion Basket constructed of PVC coated 2,7 mm galvanized wire, mesh size 80 x 100 mm, diaphragm spacing 1 m, selvedge 3,4 mm, including rock fill.	m ³	550	CPG	CPG
5.3.2	8.2.2	a) Supply and installation of a 6000mm x 230mm RENO Mattress on Geotextile	m ³	250	CPG	CPG
5.3.3	8.2.4	Geofabric (Bidim A4 or Similar approved)	m ²	60	CPG	CPG
5.3.4		Supply, deliver and install Concrete Palisade Fencing for reservoir	m	250	CPG	CPG
SCHEDULE 5 CARRIED TO SUMMARY PAGE						R 3 500 000.00

SUMMARY PAGE

Schedule	Description	Amount R
1	PRELIMINARY & GENERAL	
2	DAYWORKS, PROVISIONAL SUMS AND PRIME COST ITEMS	
3	DN315 & DN200 GRAVITY MAINS TO NGXANGI & MAMBETHU RESERVOIRS	
4	STRUCTURES	
5	MISCELLANEOUS	
6	ALLOWANCE FOR SMMEs (CPGs)	R 3 500 000,00
	SUB-TOTAL 1 NETT TOTAL OF TENDER	
	ADD 10% CONTINGENCIES	
	SUB-TOTAL 2	
	ALLOWANCE FOR VAT 15.0%	
	TOTAL TENDER SUM	
	TIME FOR COMPLETION OF CONTRACT	8 months

SIGNED BY/ON BEHALF OF TENDERER

NAME

SIGNATURE

DATE

Declaration

(In respect of completeness of Tender)

O. R. Tambo District Municipality

Nelson Mandela Drive

Myezo Park

Mthatha

I/we, the undersigned, do hereby declare that these are the properly priced Bill of Quantities forming Part C2 of this Contract Document in consecutive order upon which my/our tender for the **BID NO: MIS 271 056 C– LIBODE SECONDARY BULK – MAGCAKINI TO MAMBETHU BULK WATER INFRASTRUCTURE AUGMENTATION** has been based.

SIGNED BY/ON BEHALF OF TENDERER

NAME

SIGNATURE

DATE



**O.R. TAMBO
DISTRICT MUNICIPALITY**

VOLUME 1

CONTRACT

C3. SCOPE OF WORKS

SCOPE OF WORKS

INDEX

Section	Description	Page No
C3.1	DESCRIPTION OF THE WORKS	SW.3
C3.2	ENGINEERING	SW.4
C3.3	PROCUREMENT	SW.6
C3.4	CONSTRUCTION	SW.7
C3.5	MANAGEMENT	SW.12
C3.6	PARTICULAR SPECIFICATIONS	SW.28
C3.7	VARIATIONS AND ADDITIONS TO THE STANDARD AND PARTICULAR SPECIFICATIONS	SW.100
C3.8	GENERIC LABOUR-INTENSIVE SPECIFICATIONS	SW.147

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The O. R. Tambo District Municipality, as designated Water Services Authority (WSA) for its own area of jurisdiction, has embarked on a project to provide potable water to various rural communities residing within a 40km radius of the Umtata CBD.

As part of the overall project, pumping installations, reinforced concrete reservoirs and associated fittings will have to be constructed in the communities.

Water will be sourced from the Highbury WTW and supplied to various communities of Libode.

As a result of this initiative, tenders are herewith invited from qualified and experienced civil engineering contractors for the construction of bulk infrastructure and associated fittings as detailed on the Drawings.

C3.1.2 OVERVIEW OF THE WORKS

The work to be carried out includes the construction of 110 – 315 mm Ø mPVC bulk water pipelines, associated chambers and assemblies.

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

C3.1.3 EXTENT OF THE WORKS (MAIN CONTRACTOR & SUBCONTRACTOR)

The Contract comprises the supply of all labour, materials, plant, contractor's equipment, and transport, attendance on site for the complete construction of the reticulation infrastructure in village in of Nyandeni local municipality and detailed on the Drawings and described in the contract document.

The general scope of works includes for the following:

- (a) Construction of 1ML elevated steel tank at Ngxangi village, installed on a 10m high stand.
- (b) Excavation, clearing, backfilling, and cleaning of 10 km of secondary pipeline trenches (Clear water mains) complete and other pipeline specials in quantities and sizes stated below: -
 - 1,200mm wide x 1,500 mm deep trenches – 10,000m (Single trenches)
- (c) Construction of 10 km of pipelines complete with associated fittings, valves, chambers and other pipeline specials in quantities and sizes stated below: -
 - 315mm dia PN 12 to PN 25 (10 000m)
 - 110mm dia PN 12 to 20 (2 100m)
- (d) The provision of all "bridging finance" to the Subcontractors, as may be necessary to ensure the successful conclusion of the Contract.

C3.1.4 LOCATION OF THE WORKS

The project area is located approximately 13 km North-East of Mthatha in the O. R. Tambo District Municipality of the province of Eastern Cape.

Access to the project area is via a gravel road, which branches off the R61 East of Mthatha. The central coordinates of the project area are as follows: 31°32'59.67"S, 28°54'33.40"E

Locality plans of the project areas are included in Annexure A of the tender document.

C3.1.5 TEMPORARY WORKS

The Contractor will be responsible for all Temporary works necessary to undertake this project. The areas where temporary works are anticipated but not limited to are benching along the pipeline route, river and stream diversions. All areas where temporary works are undertaken are to be rehabilitated to their natural state on completion of the project.

C3.2 ENGINEERING

C3.2.1 DESIGN SERVICES

WORKS DESIGNED BY, PER DESIGN STAGE:

Concept, feasibility, and overall process	Engineer
Basic engineering and detail layouts to tender stage	Engineer
Final design to approved for construction stage Temporary works	Contractor
Preparation of as-built drawings	Engineer

- (a) The Engineer 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

Not applicable.

C3.2.3 DESIGN BRIEF

Not applicable.

C3.2.4 DRAWINGS

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and no dimension shall be scaled from the Drawings, unless required by the Engineer. The Engineer will, on the request of the Contractor and 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 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.

Where the Contractor is to supply the design of temporary Works, he shall supply the consulting engineer for this project with full working drawings supported by a professional engineer's design certificate.

The Drawings prepared by the Engineer for the Permanent Works of this Contract are listed below and contained in Annexure B. The Engineer reserves the right to issue amended and/or additional drawings during the Contract.

MAGCAKINI TO MAMBETHU WATER SECONDARY BULK INFRASTRUCTURE AUGMENTATION

DRAWING No	DESCRIPTION
300	General Layout and Key Plan
101	Layouts & Long Sections sheet 1 Of 11
102	Layouts & Long Sections sheet 2 Of 11
103	Layouts & Long Sections sheet 3 Of 11
104	Layouts & Long Sections sheet 4 Of 11
105	Layouts & Long Sections sheet 5 Of 11
106	Layouts & Long Sections sheet 6 Of 11
107	Layouts & Long Sections sheet 7 Of 11
108	Layouts & Long Sections sheet 8 Of 11
109	Layouts & Long Sections sheet 9 Of 11
110	Layouts & Long Sections sheet 10 Of 11
111	Layouts & Long Sections sheet 11 Of 11
200	ISOLATION VALVE AND AIRVALVE CHAMBER
201	STANDARD DETAIL_STREAM CROSSING mPVC
202	OFF-TAKE TO MAMBETHU ELEVATED TANK-MAGCAKINI OFF-TAKE
203	ANCHOR BLOCK DETAILS
204	AIR VALVE AND SCOUR VALVE DETAIL
205	AIR VALVE AND SCOUR VALVE DETAIL
206	DIVERSION BERM DETAIL

C3.2.5 DESIGN PROCEDURES

Not applicable.

C3.3 PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

C3.3.1.1 REQUIREMENTS

All works to be completed in this contract shall be executed in accordance to the O. R. Tambo District Municipality's preferential procurement policies and procedures.

C3.3.1.2 RESOURCE STANDARD PERTAINING TO TARGETED PROCUREMENT

Preferential procurement will be applied as per O. R. Tambo District Municipality's preference policy.

C3.3.2 SUBCONTRACTING

C3.3.2.1 SCOPE OF MANDATORY SUBCONTRACT WORKS

Bidders are required to Sub-Contract a minimum of 30% of the contract to previously disadvantaged companies, within the area of jurisdiction of the O. R. Tambo District Municipality.

The Works to be carried out by the **SUBCONTRACTOR** under this Contract is detailed in Clause C3.1.3 and below.

- Laying of approximately 12.1 km of 110 – 315 mmØ uPVC class 9 - 16 pipe,
- Construction of valve chambers and assemblies

C3.3.2.1.1 A formal tender process will be followed to appoint the Subcontractor which will be facilitated by the Employer, Employer's Agent, and Main Contractor.

C3.3.2.2 PREFERRED SUBCONTRACTORS / SUPPLIERS

As per clause **C3.3.2.1**.

C3.3.2.3 SUBCONTRACTING PROCEDURES

The Employer must approve the sub-contractor(s) to be used in terms of **C3.3.2.1**.

C3.3.2.4 ATTENDANCE ON SUBCONTRACTORS

Not applicable for this Contract.

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

C3.4.1.1 APPLICABLE SANS STANDARDS

The following SANS 1200 Standardized Specifications for Civil Engineering Construction are applicable dependent on scope:

SANS 1200 A	GENERAL
SANS 1200 AB	ENGINEER'S OFFICE
SANS 1200 C	SITE CLEARANCE
SANS 1200 D	EARTHWORKS
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)
SANS 1200 DK	GABIONS
SANS 1200 G	CONCRETE
SANS 1200 L	MEDIUM PRESSURE PIPELINES
SANS 1200 LB	BEDDING (PIPES)
SANS 1200 LD	SEWERS
SANS 1200 LE	STORMWATER DRAINAGE
SANS 1200 ME	SUBBASE
SANS 1200 MF	BASE

The term "project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications. The above list is not deemed exhaustive, and other specifications listed or referenced in the document may be applicable as required. Where SABS specifications are referenced, the corresponding SANS document and applicable clauses shall apply.

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

SANS 1921 (2004):	Construction and Management Requirements for Works Contracts
Part 1:	General Engineering and Construction Works;
Part 2:	Accommodation of Traffic on Public Roads Occupied by the Contractor;
Part 4:	Third-party management requirements for works contracts;
Part 5:	Earthworks activities which are to be performed by hand; and
Part 6:	HIV/AIDS Awareness

C3.4.1.2 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS

All works to be executed in accordance to the South African National Standards.

C3.4.1.3 PARTICULAR SPECIFICATIONS

The following Particular Specifications for work not covered by the SANS 1200 Standardized Specifications are also included hereunder:

ENVIRONMENTAL SPECIFICATION
HEALTH AND SAFETY SPECIFICATION
GENERIC LABOUR-INTENSIVE SPECIFICATION

The above list is not deemed exhaustive, and other specifications listed or referenced in the document may be applicable as required.

C3.4.2 PLANT AND MATERIALS

C3.4.2.1 PLANT AND MATERIALS SUPPLIED BY THE EMPLOYER

Not applicable for this Contract.

C3.4.2.2 MATERIALS, SAMPLES AND SHOP DRAWINGS

Materials or works which do not conform to the approved samples submitted in terms of clause 7.4 of the Conditions of Contract will be rejected. The Engineer reserves the right to submit samples for testing to ensure that the material represented by the sample meets the specification requirements.

The costs of any such tests conducted by or on behalf of the Engineer, of which the results provided by the Contractor do not conform to the requirements of the Contract, shall be for the Contractor's account.

C3.4.3 CONSTRUCTION EQUIPMENT

C3.4.3.1 REQUIREMENTS FOR EQUIPMENT

The construction equipment is to be of adequate capacities and output in order to efficiently undertake the scope of works within the construction programme time frames.

The Contractor is to ensure that the equipment on site is in good working condition i.e. regularly serviced and maintained.

Should the Engineer be of the opinion that the plant in use is in any way unsuitable for carrying out the Works in a manner or at a rate commensurate with the requirements of the Contract, they shall have the right to call on the Contractor at any time during the progress of the works to provide additional or improved plant and tools as may be necessary to meet these requirements.

C3.4.3.2 EQUIPMENT PROVIDED BY THE EMPLOYER

Not applicable for this Contract

C3.4.4 EXISTING SERVICES

C3.4.4.1 KNOWN SERVICES

The contractor shall so carry out all his operations as not to encroach on, or interfere with, trespass on, or damage adjoining lands, crops, buildings, properties, road structures, pipelines, places and services, in the vicinity of the Works and so as not to interfere in any way at any time with the smooth and continuous operation of the existing facilities.

The area does have electricity supply, watermains, Telkom and cellular network services and stormwater infrastructure in the works vicinity. The Contractor shall acquaint himself with the presence of all such services as is required.

Most known services are shown in the drawings however there may be other unknown services alongside the roadway etc. Work areas are to be proved for services prior to excavating for the works. Provision for proving of services is included in the Bill of Quantities.

When a service is not located in its expected position the Contractor shall immediately report such circumstances to the Engineer who will decide what further searching or other necessary action is to

be carried out and shall instruct the Contractor accordingly. The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced. The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

It should be noted that 33 000 Volt and 132 000 Volt cables may only be exposed by the Electricity Service Unit's personnel. If the cables are inadvertently exposed, excavation work must stop, and the Electricity Service Authority shall be contacted immediately.

It is stressed that all services in a particular area must be proven before commencing work in that area. Proving of services shall be completed at least one week in advance of the actual programmed date for commencing work in the area. The position of these services located must be co-ordinated and levelled by the Contractor, and the information given in writing to the Engineer's representative. The requirements of this clause do not relieve the Contractor of any obligations as detailed in the Conditions of Contract or under Clause 4.17 of SANS 1921-1.

C3.4.4.2 TREATMENT OF EXISTING SERVICES

Existing services are to be kept live as far as practically possible. The need may arise for services such as electricity and water to be turned off for a short period of time due to construction in close proximity to these services. In this event the Contractor is to contact the relevant authorities well in advance of his programmed construction date in the affected areas so as not to incur any delays.

C3.4.4.3 USE OF DETECTION EQUIPMENT FOR THE LOCATION OF UNDERGROUND SERVICES

The Contractor may choose to use detection equipment for locating underground services. The costs for the use of this equipment are deemed to be included in the tendered rates.

C3.4.4.4 DAMAGE TO SERVICES

The Contractor will be held liable for all damages to existing services, known and unknown. Excavations and works in the proximity of services must be undertaken by hand with due care as instructed by the Engineer or Engineer's Representative.

In the event of any service being damaged or accidentally disconnected for any reason, the Contractor shall immediately contact the relevant authority for instruction and shall report the occurrence of the incident. The damage is to be repaired as soon as possible to the approval of the Engineer and the authority.

The Contractor will be held responsible for paying all costs incurred by the authority or himself as a result of each such incident, where relevant.

C3.4.4.5 REINSTATEMENT OF SERVICES AND STRUCTURES DAMAGED DURING CONSTRUCTION

The contractor will be held responsible for the repairs and reinstatement of all services damaged during the course of construction. The Engineer is to be notified within 24 hours of damages to services.

C3.4.5 SITE ESTABLISHMENT

C3.4.5.1 SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER

Not applicable for this Contract.

C3.4.5.2 FACILITIES PROVIDED BY THE CONTRACTOR

The Contractor shall, at his own cost, be responsible for locating and making all arrangements necessary for securing an area suitable to meet his needs in respect of the erection of the Contractor's offices, stores and other facilities, including the facilities to be provided for the Engineer in accordance with the Contract.

Any potential area proposed by the Contractor shall be within reasonable proximity to the Site of the Works and its location shall be subject to the approval of the Engineer, which approval shall not be unreasonably withheld, and shall be determined in liaison with the local community. The Project Steering community will assist and negotiate such site for the Contractor.

This site/s shall be restored to its original condition by the contractor on completion of the contract. The contractor will not be permitted to house construction staff on the premises overnight.

C3.4.5.3 STORAGE AND LABORATORY FACILITIES

The Contractor will set up storage facilities for material, plant and equipment within the site camp or site agreed upon with the Engineer.

If the Contractor deems it necessary for a laboratory facility on site, such a facility will be set up within the confines of the site camp or site approved by the Engineer. Payment for this facility will be as per the scheduled item in the Bill of Quantities.

C3.4.5.4 OTHER FACILITIES AND SERVICES

The Contractor shall, at his own cost, make all arrangements necessary for the supply and distribution of water required for construction purposes as well as for use in and about his site establishment and for human consumption.

The Contractor shall provide portable chemical latrines. All latrines must, for the duration of the contract, be kept in a clean and hygienic condition to the satisfaction of the Engineer. Sufficient facilities shall be provided for the Contractor's employees in compliance with the local health department regulations.

The contractor shall make his own arrangements for all other necessary facilities during the period of the contract.

C3.4.5.5 VEHICLES AND EQUIPMENT

The Contractor shall, for purposes of this contract, provide suitable site offices, telephonic facilities and survey and testing equipment in accordance to the Variation to Standard and Particular Specifications PSAB 3.2.

C3.4.5.6 ADVERTISING RIGHTS

The Contractor shall not publish, or cause to be published, any papers, articles or information relating to this project, nor permit any advertising mentioning the subject of this Contract, nor display, or permit to be displayed, any advertisements on the Site, or elsewhere, in connection with this Contract, without the prior permission, in writing, of the Employer. The Contractor shall be responsible for the observance of this Clause by his employees and by his Sub-Contractors.

C3.4.5.7 NOTICE BOARDS

All notices, signs and barricades, as well as advertisements, may be used only if approved by the Engineer. The Contractor shall provide 2 no. notice boards as per issued drawings. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

The Engineer shall have the right to instruct the Contractor to move any sign, notice or advertisement to another position, or to remove it from the Site of the Works if in his opinion it is unsatisfactory, inconvenient or dangerous.

C3.4.6 SITE USAGE

The Contractor and approved sub-contractors will be provided full access to the construction site for purposes of this contract only.

Access shall also be provided for inspections and testing by personnel acting on behalf of the Employer.

Access to the public shall be strictly prohibited.

C3.4.7 PERMITS AND WAY LEAVES

The following permits and wayleaves which are applicable to this contract have been submitted to the relevant authorities and are pending approval:

- (a) Construction permits
- (b) DoT road crossings, for provincial and district roads
- (c) Permission to cross Eskom servitude/s
- (d) Permission to lay pipes within privately owned properties.

The Contractor shall make all necessary arrangements with the abovementioned entities prior to any work being undertaken within the affected areas.

C3.4.8 ALTERATIONS, ADDITIONS, EXTENSIONS AND MODIFICATIONS TO EXISTING WORKS

Not applicable to this contract.

C3.4.9 INSPECTION OF ADJOINING PROPERTIES

Where the works encroach or adjoin public and private property with the potential to cause damage to existing structures and properties, the Contractor is to inspect properties with the presence of property owners and representatives of local authorities.

Photographic records and written permissions are to be obtained prior to commencing with the works and said records supplied to the Engineer or Engineer's Representative.

C3.4.10 WATER FOR CONSTRUCTION PURPOSES

The Contractor shall, at his own cost, make all arrangements necessary for the supply and distribution of water required for construction purposes.

C3.4.11 SURVEY CONTROL AND SETTING OUT OF THE WORKS

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

The Contractor shall be responsible for all setting out to line and level. Survey control will be provided to the contractor at the start of the contract. The contractor shall satisfy himself with the accuracy thereof and immediately bring any discrepancies to the attention of the Engineer.

C3.5 MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

C3.5.1.1 APPLICABLE SANS STANDARDS

(a) The SANS 1200 Standardized Specifications listed in section C3.4.1.1.

C3.5.1.2 PARTICULAR / GENERIC SPECIFICATIONS

(a) The Variations and Additions to the SANS 1200 Standardized Specifications given in section C3.7

(b) The Particular Specifications given in sections C3.6.

C3.5.1.3 PLANNING AND PROGRAMMING

C3.5.1.3.1 GENERAL

The Contractor's Programme to be submitted in terms of Clause 5.6.1 of the General Conditions of Contract 2015, Third Edition, shall take all matters that may impact the Contractor's sequence of executing the various components of the Works and the requisite rate of progress of the Works, as may be specified in or reasonably inferred from the Contract.

C3.5.1.3.2 FORMAT

The Construction Programme to be submitted by the Contractor in accordance with the provisions of Clause 5.6.1 of the Conditions of Contract shall;

- (a) Be in the form of a bar chart and
- (b) Clearly indicate the start and end dates and duration of all construction activities and identify the critical path and
- (c) Take full cognizance of all the Contractor's risks and obligations in terms of the Contract.

C3.5.1.3.3 FAILURE TO MAINTAIN CONSTRUCTION PROGRAMME

The Construction Programme has to be revised in terms of the Conditions of Contract, if the Contractor is falling behind in the programme. The Contractor shall submit a revised programme showing how they intend to restore gain lost time to ensure completion of the Works before the Due Completion Date.

C3.5.1.3.4 SPECIFIC PROGRAMME REQUIREMENTS

No additional payments will be made to the Contractor in respect of any additional costs as it may incur in consequence of arranging or adjusting its programme to accommodate the said matters and the Contractor's various tendered rates and prices shall be deemed to fully be inclusive of such costs.

The contractors programme shall include ordering of all materials.

No construction activities will be permitted which require the complete shut-down of existing works and operations.

Facilities to Other Contractors

Pursuant to the requirements of the Conditions of Contract, the Contractor's programme shall make allowances for the presence of such other contractors on the Site as are described below. This may involve adapting the Contractor's programme to accommodate the work of such other contractors and ensuring access to their sites along prescribed routes over the Site of this Contract.

C3.5.1.4 SEQUENCE OF THE WORKS

The work sequence is to take into account the programme requirement contained in clause **C3.5.1.3.4..**

C3.5.1.5 SOFTWARE APPLICATION FOR PROGRAMMING

The Construction Programme and all revisions there to, shall be provided to the Engineer in electronic format using Microsoft Project software.

C3.5.1.6 METHODS AND PROCEDURES

C3.5.1.6.1 SITE MAINTENANCE

During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner and shall keep the Site free from debris and obstructions.

C3.5.1.6.2 BLASTING

Blasting will not be permitted within 10m of any structure, pipeline or service unless the Contractor satisfies the Engineer that his proposed blasting methods and controls are such that damage will not be caused to the adjoining structure, pipeline or service. The Contractor shall assess that status of all buildings/structures within the vicinity of the works before commencing blasting. The Engineer may ask for vibro recordings to be taken and request the attendance of an expert from the explosives supplier at no additional cost to the Employer.

C3.5.1.6.3 OPENING UP AND CLOSING DOWN OF DESIGNATED BORROW PITS

Measurement and payment for opening up and closing down designated borrow pits, including removing and stockpiling overburden and restoring the Site, shall be made under item 8.3.4 of SABS 1200 D. This item applies to all borrow material required under this Contract. The Contractor must note that not all material from the borrow pit can be used on the project but only material which meets project specification.

The requirements of sub-clause 5.2.2.2 of SABS 1200 D regarding the opening up, maintenance and closing down of borrow pits shall be adhered to.

C3.5.1.6.4 ACCESS TO PROPERTIES

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to Clause 8.1.2 of the Conditions of Contract.

If, as a result of restricted road reserve widths and the nature of the work, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions to provide access to erven and properties.

Notwithstanding the foregoing, the Contractor may, with the prior approval of the Engineer (which approval shall not be unreasonably withheld), make arrangements with and obtain the acceptance of the occupiers of erven

and properties to close off part of a street, road, footpath or entrance temporarily, provided that the Contractor duly notifies the occupiers of the intended closure and its probable duration, and reopens the route as punctually as possible. Where possible, such streets, roads, footpaths and entrances shall be made safe and reopened to traffic overnight. Such closure shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs, drums and other safety measures appropriate to the circumstances shall be provided by the Contractor to suit the specific conditions.

C3.5.1.6.5 ACCESS ROADS TO SITE

Access to the project area is on the R61 from Mthatha to Libode (Port St Johns Route) via the Misty Mount road to Port St Johns, which branches off the R61 to the left North East approximately 15 km from Mthatha Town, towards Port St Johns. Sections of the site can be accessed via gravel roads and tracks. The contractor will require suitable site vehicles (4x4) to access the site in the wet season.

C3.5.1.6.6 SUBCONTRACTORS

All matters pertaining to subcontractors (including Nominated Subcontractors) and the work executed by them shall be dealt with directly between the Engineer and the Contractor, in consultation with the Client, in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Engineer will not liaise directly with any subcontractors, nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Engineer will not become involved.

C3.5.1.6.7 MANAGEMENT OF SUB-CONTRACTORS

The contractor shall price for the cost of managing the sub-contractors who would be appointed by the Client. The cost shall include supervision, attendance, possible training, and compliance with construction regulations including health, safety and environmental regulations.

C3.5.1.6.8 EMPLOYMENT OF LOCAL LABOUR

It is the intention that this Contract should make maximum use of the local labour force that is presently under-employed. To this end the Contractor shall limit the utilisation on the Contract of non-local employees to that of key personnel only and to employ and train local labour to the extent necessary for the execution and completion of this Contract.

EPWP – LIC

Employer's objectives

The employer's objectives are to deliver public infrastructure using labour intensive methods

Labour-intensive works

Labour-intensive works comprise the activities described in SANS 1921-5, *Earthworks activities which are to be performed by hand*, and its associated specification data. Such works shall be constructed using local workers who are temporarily employed in terms of this Scope of Work.

LABOUR INTENSIVE COMPETENCIES OF SUPERVISORY AND MANAGEMENT STAFF

Contractors having a CIDB contractor grading designation of 5CE and higher shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to

30 June 2006, are registered for training towards, the skills programme outlined in Table 1.

The managing principal of the contractor, namely, a sole proprietor, the senior partner, the managing director or managing member of a close corporation, as relevant, having a contractor grading designation of 1CE, 2CE, 3CE and 4CE shall have personally completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for the NQF level 2.

All other site supervisory staff in the employ of such contractors must have completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for, the NQF level 2-unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team Leader / Supervisor	2	Apply Labour-Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	
		Use Labour-Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures	
Foreman / supervisor	4	Implement Labour-Intensive Construction Systems and Techniques	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain	
		Roads and Stormwater Drainage Use Labour-Intensive Construction Methods to Construct and Maintain	
		Water and Sanitation Services Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent / Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Manage Labour-Intensive Construction Processes	Skills Programme against this single unit standard

EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

1.1 Requirements For The Sourcing And Engagement Of Labour.

1.1.1 Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

1.1.2 The rate of pay set for the SPWP shall be in accordance with the local rates (ie. the rate that is being used in the area for any development projects, housing etc) or in the absence thereof the rates from the Department of Labour may be used. However, the rate shall NOT be less than R 240.00 per task or per day.

Amongst other aspects, the following should be considered when setting rates of pay for workers:

- The rate set should take into account wages paid for comparable unskilled work in the local area per sector, if necessary.
- The rate should be an appropriate wage to offer an incentive for work, to reward effort provided and to ensure a reasonable quality of work. It should not be more than the average local rate to ensure people are not recruited away from other employment and jobs with longer-term prospects.
- Men, women, disabled persons and the aged must receive the same pay for work of equal value.

1.1.3 Tasks established by the contractor must be such that:

- a) the average worker completes 5 tasks per week in 40 hours or less; and
- b) the weakest worker completes 5 tasks per week in 55 hours or less.

1.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.

1.1.5 The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

- (a) where the head of the household has less than a primary school education;
- (b) that have less than one full time person earning an income;
- (c) where subsistence agriculture is the source of income.
- (d) those who are not in receipt of any social security pension income

1.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- (a) 60 % women;
- (b) 20% youth who are between the ages of 18 and 25; and
- (c) 2% on persons with disabilities.

1.2 Specific provisions pertaining to SANS 1914-5

1.2.1 Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

1.2.2 Contract participation goals

- There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
- The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid, and any training allowance paid in respect of agreed training programmes.

1.2.3 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

1.2.4 Variations to SANS 1914-5

- The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.
- The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

1.3 Training of targeted labour

1.3.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

1.3.2 The cost of the formal training of targeted labour will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The contractor must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works– Cinderella Makunike, Fax Number 012 328 6820 or email cinderella.makunike@dpw.gov.za
Tel: 083 677 4026

1.3.3 The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.

1.3.4 The contractors shall do nothing to dissuade targeted labour from participating in the above-mentioned training programmes.

1.3.5 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to

workers who attend formal training, in terms of 1.3.4 above.

Proof of compliance with the requirements of 1.3.2 to 1.3.6 must be provided by the Contractor to the Employer prior to submission of the final payment certificate

C3.5.1.7 QUALITY PLANS AND CONTROL

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates tendered for the related items of work.

The Contractor's attention is drawn to the provisions of the various Particular Specifications, Standardized Specifications including variations/amendments thereto regarding the minimum frequency of testing required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion and submission of every part of the work to the Engineer for examination and measurement, the Contractor shall furnish the Engineer with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

C3.5.1.8 ENVIRONMENT

Further to the EMPr (to be emailed) of the Particular Specifications, The Contractor shall pay special attention to the following:

Respect for the environment is an important aspect of this contract and the Contractor shall pay special attention to the following:

(a) Natural Vegetation

The Contractor shall confine his operation to the limits of the road reserve (taking into consideration existing servitude and wayleaves that may be required) for the purpose of constructing the works and where applicable detours, shall be sited in consultation with the Engineer and the local communities.

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

(b) Fires

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

(c) Environmental Management Plan

In addition to the above all requirements according to the Environmental Management Plan as detailed in the Annexures, will be adhered to.

In the event that the Contractor fails to adhere to the Environmental Management Specifications, included in the Contract Documents, the following penalties will be imposed per incident:

Unauthorized damage or removal of trees	R 2 000-
00 Failure to keep soil types separate during excavation and backfilling	R 500-00
Failure to provide adequate portable chemical toilets	R1 000-
00 Failure to comply with solid waste disposal requirements	R 500-00
Failure to clean up litter at the end of each working day	R 1 000-
00 Failure to comply with dust prevention requirements	R 500-00
Failure to Contactor and / or materials supplier to cover vehicles	R 500-00
Failure to comply with noise, light or air pollution requirements	R 500-00
Spillage of hazardous substances	R 500-00

The Engineer will notify the Contractor of a breach of specification and supply a time period within which remedial action will need to be carried out. Should the time period elapse, then the penalty will be imposed, and the sum deducted from the following month's certificate.

No natural vegetation; trees or crops may be damaged by the Contractor without the written approval of the Engineer. The contractor must keep the Site neat and free of refuse, etc. to prevent possible damage to crops or livestock.

The Contractor's construction activities shall be performed by methods that will prevent the entrance of, or accidental spillage of solid matter, debris, contaminants and other pollutants and wastes into streams

and water-courses. Any dewatering for earthworks or structure foundations adjacent to or encroaching on streams or water-courses shall be conducted in a manner to prevent muddy or contaminated water from entering streams or water-courses by means of the construction of intercepting and bypassing ditches, barriers, ponds and other approved means.

Construction activities shall be performed in a manner to keep dust nuisance to a minimum by means of the application of sufficient water or other efficient measures wherever and as often as may prove necessary.

The cost for complying with the requirements regarding protection of the environment specified above shall be included in the rates tendered in the Schedule of Quantities for the various items of work and not additional payment will be made in this regard. The Engineer will be entitled to retain an amount of money, should a dispute between property owners and the Contractor arise. The balance of this money will be released as soon as the dispute is resolved. Should any of the above-mentioned items not be 'complied with, the Engineer reserves the right to appoint another Contractor to rectify these matters. Costs for this work will be deducted from the payment of the Contractor for this Contract.

In order to reduce and control the release of airborne pollutants, the Contractor shall ensure that:

- No fires are lit on site to dispose of waste or for cooking.
- All loose materials that could be blown about or into neighbouring properties by wind is secured.
- The spraying of formwork oils, paints and other toxic substances is limited to the application area.

The Contractor will be required to submit a Construction Method Statement at the Site handover. Activities having an effect on the environment must be addressed in this Construction Method Statement. A list of possible activities is included below.

Possible activities having an effect on the environment:

- Collection, storage, and disposal of solid waste.
- Protection of indigenous plant species.
- Protection of natural water sources from liquid and solid wastes.
- Control of noise and dust.

A payment item is included in the Bill of Quantities to cover the Contractor's cost for compliance with the abovementioned regulations and specifications.

C3.5.1.9 ACCOMMODATION OF TRAFFIC ON PUBLIC ROADS OCCUPIED BY THE CONTRACTOR

The Contractor shall ensure the safe and expeditious passage of traffic at all times and shall provide all necessary temporary road traffic signs, barricades, flagmen, etc. to safeguard the travelling public. Failure to maintain road signs, warning signs or flicker lights, etc. in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc., have been repaired to his satisfaction. The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

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

Any detours or bypasses constructed by the Contractor shall be adequately signposted, as per South African Road Traffic Contractor, and maintained in such a manner as to provide safe and easy passage of traffic.

C3.5.1.10 OTHER CONTRACTORS ON SITE

Not applicable for this contract.

C3.5.1.11 TESTING, COMPLETION, COMMISSIONING AND CORRECTION OF DEFECTS

Not applicable for this contract.

C3.5.1.12 RECORDING OF WEATHER

If during the time for completion of the Works or any extension thereof, abnormal rainfall or wet conditions occur, the Contractor may submit a claim for an extension of time in accordance with Clause 5.12 of the General Conditions of Contract. The method whereby an extension of time due to abnormal rainfall will be determined is as follows:

- (a) Extension of Time for Abnormal rainfall for each calendar month shall be the total working days in the month under consideration during which the Contractor is unable to proceed with his operations as specified under (b) below, less the number of working days (from the table) that no work is deemed to have been possible on a critical path item as a result of normal rainfall for the month under consideration. (When drawing up his programme, the Contractor shall make provision for the expected delays shown in the table).
- (b) The claim for extension of time shall be the sum of all the positive monthly totals for the Contract Period. Negative monthly totals shall be disregarded. A day shall be considered as lost when the Engineer agrees that no work was capable of being done on any item shown on the critical path of the current construction

programme. Items which are not shown on the critical path and have been affected by rainfall will not be considered for extension of time.

RAINFALL TABLE

Month	Expected number of working days lost due to normal rainfall	Month	Expected number of working days lost due to normal rainfall
Jan	6	July	1
Febr	6	Aug	1
Mar	7	Sept	3
April	4	Octo	3
May	3	Nov	5
Jun	2	Dec	4

***Above rainfall data abstracted from <https://www.worldweatheronline.com/umtata-weather-averages/eastern-cape/za.aspx> from research over a 12 year period, 2000 to 2012.

Accurate rain measurements shall be taken at a suitable point(s) on the site. Rain gauge readings must be taken in the morning and afternoon and be approved by the Engineer.

C3.5.1.13 FORMAT OF COMMUNICATION

Site Instruction Book

The Contractor shall supply, at his own expense an A4 size triplicate book which shall be kept in the site office. All correspondence between the Engineer’s and Contractor’s site staff shall be entered into this book, and each entry signed and dated by both parties. It shall be available from the first day of the contract and at all times be accessible to the Engineer.

The original shall be issued to the Contractor, the first copy is to be forwarded to the office of the Engineer and the second copy shall remain in the book. Engineer’s version of the entries that have been lost will be assumed correct and binding. If the Contractor should lose the book, it will be considered a grave offence on his part. In such case the Engineer’s version of the entries that have been lost will be assumed correct and binding.

Further to this, written letters, faxes and/or emails will be deemed acceptable means of communication for this contract.

C3.5.1.14 KEY PERSONNEL

The Contractor shall fill in the form entitled Key Personnel in the Forms to be completed by the Tenderer. The data stated on the above-mentioned form will be strictly monitored during the Contract period and any deviations therefrom shall be subject to the prior approval of the Engineer, which approval shall not be unreasonably withheld.

C3.5.1.15 MANAGEMENT MEETINGS

Project progress meetings must be held monthly with the presence of the following parties:

1. Employer
2. Engineer and/or Engineer’s Representative
3. Appointed Contractor
4. Appointed Community Liaison Officer and PSC Committee
5. Health and Safety Officer
6. Environmental Control Officer

This list is not necessarily complete and shall not limit the attendance at progress meetings.

C3.5.1.16 FORMS FOR CONTRACT ADMINISTRATION

Not applicable for this contract.

C3.5.1.17 ELECTRONIC PAYMENTS

The Contractor is to ensure correct banking details are provided to the Employer in a timeous manner.

C3.5.1.18 DAILY RECORDS

The Contractor shall supply, at his own expense, an A4 size triplicate book which shall be kept in the site office. Each day's activities will be filled in by the Contractor day by day and the book handed to the Engineer for signature each 14 days. It shall be available from the first day of the contract and at all-time be accessible to the Engineer. The work progress and record of plant and labour shall be entered on a daily basis. The original shall be issued to the Contractor, the first copy is to be forwarded to the office of the Engineer and the second copy shall remain in the book. Engineer's version of the entries that have been lost will be assumed correct and binding. If the Contractor should lose the book it will be considered a grave offence on his part. In such case the Engineer's version of the entries that have been lost will be assumed correct and binding.

C3.5.1.19 PAYMENT CERTIFICATES

Monthly statements to be submitted by the Contractor in terms of Clause 6.10 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in electronic format. The Contractor shall, together with a copy of the electronic file of the statement, submit two (2) A4 size paper copies of the statement.

For the purposes of the Engineer's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Engineer for the purposes of accurately reflecting the actual quantities and amounts which the Engineer deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Engineer within three (3) normal workings days from the date on which the Engineer communicated to the Contractor the adjustments required. The Contractor shall submit to the Engineer five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of Sub-clause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

C3.5.1.20 PERMITS

The Security requirements for the Contractor's site establishment and the works shall be determined by the Contractor. The cost of this shall be borne by the Contractor. No other security related claim will be considered.

C3.5.2 HEALTH AND SAFETY

C3.5.2.1 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 (the regulations) as promulgated in Government Gazette No 37305 and Regulation Gazette No 10113 of 7 February 2014. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the Project Specifications, Bill of Quantities and Drawings, as well as in the Employers' health and safety specifications (Regulation 5(1)(b) of the Construction Regulations 2014, which are contained in the Contract document.

The Contractor shall in terms of Regulation 7(1)(a) provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

Payment items are included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations. Such items tendered and the other rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract.

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

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

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

C3.5.2.2 PROTECTION OF THE PUBLIC

The Contractor will ensure that all excavations are adequately barricaded to ensure public safety and prevent unauthorised access.

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.2.3 BARRICADES AND LIGHTING

The Contractor will ensure that barricades, as necessary to ensure public safety and protection of the works and adjacent existing services are erected as necessary.

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.2.4 TRAFFIC CONTROL ON ROADS

The Contractor shall accommodate any pedestrian traffic on the walkways and road past the site, as well as vehicular traffic in the roads.

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

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

Refer to the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014.

C3.5.2.5 MEASURES AGAINST DISEASE AND EPIDEMICS

Not applicable to this contract.

C3.5.2.6 AIDS AWARENESS

The Contractor SHALL provide HIV/AIDS awareness training to staff employed during the construction project. A provisional amount has been allowed for in the Bill of Quantities to cover the Contractor's cost for compliance for this item.

C3.6 PARTICULAR SPECIFICATIONS

The following Particular Specifications for civil engineering works will be applicable to this Contract:

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PB ENVIRONMENTAL MANAGEMENT PROGRAMME.....Page 78

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1. LIST OF ABBREVIATIONS

AIA	Approved Inspection Authority
BoQ	Bill of Quantities
CC	Compensation Commissioner
CR	Construction Regulations
DMR	Driven Machinery Regulations
DoL	Department of Labour
FEMA	Federated Employers Mutual Association
GAR	General Administration Regulations
GSR	General Safety Regulations
HCSR	Hazardous Chemical Substances Regulations
HIRA	Hazard Identification Risk Assessment
H&S	Health and Safety
MSDS	Material Safety Data Sheet
OH	Occupational Health
OHSA	Occupational Health and Safety Act No. 85 of 1993 (as amended) OHSS Occupational Health and Safety Specification
PSHSS	Project Specific Health and Safety Specification PC Principal Contractor
PPE	Personal Protective Equipment
SANS	South African National Standards (Authority)
SACPCMP	South African Council for the Project and Construction Management Professions
SMME	Small, Medium and Micro-sized Enterprises
SWP	Safe Work Procedure

2. DEFINITIONS

The definitions used will be those set out in the Construction Regulations, Gazette No 37305 of 7 February 2014 which are hereunder further emphasised with the following additions:

Client: O. R. Tambo District Municipality

Construction Site:

Means a work place where construction work is being performed

Construction Supervisor:

Means a competent person responsible for supervising construction activities on a construction site

Designer: Means a competent person appointed by the Client as Agent to design, supervise and monitor construction on their behalf.

Fall Risk: Means any potential exposure to falling either from, off or into

Hazard: Source of or exposure to danger

Hazard Identification and Risk Assessment (HIRA) and Risk Control:

Means a documented plan, which identifies hazards, assesses the risks and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

Health and Safety Agent:

Means any competent person who acts as a representative for the Client in managing the projects health and safety and who is registered with the South African Council for the Project and Construction Management Profession (SACPCMP).

Health and Safety Plan:

Means a site, activity or project specific documented plan in accordance with the Clients Health and Safety Specification.

Induction Training:

Means once off introductory training on general health and safety issues given to all employees and visitors to the site before commencement of work on site.

Risk: Means the probability or likelihood that a hazard can result in injury or damage.

Regulation/s:

Shall mean the relevant regulation/s promulgated in terms of the Occupational Health and Safety Act, No. 85 of 1993.

The Act:

Means, unless the context indicates otherwise, the Occupational Health and Safety Act, No. 85 of 1993 and regulations promulgated thereunder, as amended.

3. KEY REFERENCES

- Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)
- Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)
- General Conditions of Contract of Construction Works 2015
- SANS 10085, SANS 50355, SANS 50361
- Explosives Act No. 26 of 1956
- SANS Code 1921-6
- SANS Code 1200
- Project Environmental Management Plan
- National Road Traffic Regulations (*as amended*)

4. INTRODUCTION

O. R. Tambo District Municipality is a state-owned business enterprise and operates within the South African legislative parameters of the Occupational Health and Safety Act 85 of 1993. With the promulgation of the revised Construction Regulations, Regulation Gazette 10113, Government Notice 84, dated 7 February 2014, O. R. Tambo District Municipality seeks to fulfil its duties as espoused in clause 5.

Each year fatalities, serious injuries and poor attitudes of Contractors mar the reputation of the Construction Industry Therefore O. R. Tambo District Municipality has a responsibility to limit its risk by ensuring a zero tolerance and better practice approach to Contractors and those affiliated to this project. Thus a high premium is placed on the health and safety (H&S) of O. R. Tambo District Municipality stakeholders, which include its employees, professional service providers, public and its physical assets. The responsibilities that O. R. Tambo District Municipality and relevant stakeholders have toward its employees are captured in, but not limited to this document. The responsibilities stem from both moral, civil and a variety of legal obligations.

The Principal Contractor is to take due cognisance of the above statement.

O. R. Tambo District Municipality, as the Client has appointed a H&S Agent which has developed this project specific Health & Safety Specification (PSHSS) for the project in order to provide the Principal Contractor making a bid or appointed to perform construction work for the project with all the relevant requirement pertaining to H&S.

4.1 Project Description

In order to ensure that the PC’s OH&S Plan and associated risk assessments developed for implementation are site specific, the works comprises of the construction of approximately 12 100m of pipeline.

4.1.1 Project Team

Client Representative	O. R. Tambo District Municipality
Project Engineer	Umpisi Engineers & Gibb Pty Ltd
Engineering Representative	
Health and Safety Agent	Mr. D. Francis:- <i>ORM Safety Consultants</i>
Health and Safety Manager	Mr. M. Heuer:- <i>ORM Safety Consultants</i>

4.1.1 Project Specific Restrictions and Requirements

Site Establishment	
Restrictions / requirements	Temporary buildings and fencing are to be neat and presentable, and the surrounding areas must at all times be kept in a neat, clean and in a sanitary condition. The Contractor must not cut down or damage any trees, nor make any excavation without the written permission of the Engineer and will be required to restore the site to its original condition on completion of the Works.
Storage areas	In container(s) or appropriate temporary sheds

Security	Full time Security must be provided by the Contractor
Restrictions on times, access or other restrictions by Client	Normal working hours will be - 07:00 - 17:00
Arrangements for access, parking, deliveries, etc	
Access to site by Construction Vehicles	Access to the site is possible with construction vehicles
Access to site by Construction Workers and Visitors	Access is prohibited unless formal induction has been undertaken and proof available on request
Speed restrictions	A maximum of 30km/hr must be adhered to on gravel
Ablutions and Welfare Arrangements	
Toilets & Washing facilities	Contractor to supply their own ablution and washing facilities within the allocated site camp and along the
Drinking Water	The Contractor shall make his own arrangements for potable water along the route of the pipeline
Shelter	Contractor shall supply their own facilities within the allocated site camp and temporary, suitable shelter and seating along the route of the pipeline. Under no circumstances will workers be allowed to eat or rest in the bushy areas and under poorly constructed make-shift

4.2 Purpose of the Project Specific Health and Safety Specification (PSHSS)

The PSHSS is a performance specification to ensure that the O. R. Tambo District Municipality and any bodies that enter into formal agreements with the O. R. Tambo District Municipality Viz. Agents, Professional Service, Principal Contractors and Contractors achieve an acceptable level of OHS performance. No advice, approval of any document required by the PSHSS, such as hazard identification and risk assessments, or any other form of communication from the Client shall be construed as acceptance by the Client of any obligation that absolves the Principal Contractor from achieving the required level of performance and compliance with legal requirements. Furthermore, there is no acceptance of liability by the Client, which may result from the Principal Contractor failing to comply with the PSHSS, i.e. the Principal Contractor remains responsible for achieving the required performance levels.

A Mandatary Agreement in terms of Section 37.2 of the OHSA will be signed between parties prior to any works commencing.

The PSHSS highlights the aspects to be implemented over and above the minimum requirements of current legislation. Requirements may be changed should new risks or issues are identified that could not have been foreseen during the design phase of the project, or during the construction phase. Any new legislation or standards (*legislated or determined by O. R. Tambo District Municipality*) that are promulgated or accepted during the contract will automatically be applied.

4.3 Implementation of the Project Specific Occupational Health and Safety Specifications (PSHSS)

The project specific H&S specification (PSHSS) forms an integral part of the Contract, and the PC is required to make it an integral part of their Contracts with Contractors and Suppliers.

This specification must be read in conjunction with the OHSA, Regulations (*as amended*) and any other standards relating to work being done and ensure compliance thereto. The information relative to the scope of the project, the works etc. are detailed in the tender

documentation and are to be considered when developing the H&S Plan and associated documentation.

The OHSA S.37.2 Mandatary Agreement must be fully completed by the PC, supplied by the Client. These documents shall be deemed to form part of the returnable Contract Documents.

No work may commence without written approval of the H&S Plan by the appointed H&S Agent.

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S Plan for approval. Further to this, the PC must ensure that similar information must be provided as it applies to the works to all their Contractors, within 5 working days following notification thereof. The H&S Agent will visit the project weekly to ensure compliance and limit risk. All activities on the site and all appropriate documentation will be monitored and reported on to the Client's Project Manager and the Engineer.

Non-conformances will be issued and penalties or work stoppage will be issued where appropriate. Communication between the H&S Agent and the PC will be through the Engineer (*or Client's responsible person*) as determined at the commencement of the project.

4.4 Requirements at Tender Stage

Tenderers are required to submit a H&S Plan with their Tender submission.

The documentation submitted will be used to assess the competence of the tenderer, as required in the CRs, therefore the information submitted needs to be complete and as close as possible to the final product. Adequate pricing for H&S is required, and the appropriate section in the BoQ is to be completed. Failure to do so could result in the Tender being regarded as non-responsive.

The PC shall ensure adequate information is submitted as supporting documentation with their completed Tender. Such information will be assessed against the criteria listed and a score provided to the Bid Award Committee (BAC) for consideration. Failure to provide such information could render the tender application non-responsive.

A project specific H&S Plan in response to this PSHSS will be subject to assessment by the H&S Agent. This must also include additional supporting documentation as required to verify the H&S system:

- A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Occupational Health and Safety Act and its Regulations
- A valid Letter of Good Standing with the Compensation Commissioner or similar

5. GENERAL REQUIREMENTS

5.1 Specified Hazardous Chemical Substances

The following lists of products or substances are those which have been identified as likely to be used on the project or generated during the course of construction. This list is not inclusive and other products may be considered. Where the PC is likely to supply the product as the product has not been specified, material safety data sheets (MSDSs) need to be considered prior to all selections.

PRODUCTS or SUBSTANCES	POTENTIAL HEALTH OR OTHER RISKS
Cement	Hand mixing may occur, 50kg bags are an ergonomic risk from handling. Pumping of concrete may produce extensive vibration, extended hours of work, and potential eye, skin and respiratory irritant from dust exposure, chromates
Cement/Silica dust	Caused by cutting, grinding, sanding of any concrete/granite/tiled surface/masonry resulting in occupational respiratory health illness or disease
Petrol/diesel/lubricants	Potentially a fuel bowzer on site. Fire, spillage, fumes
Adhesives	Used as a bonding agent and may result in contact Dermatitis and occupational respiratory illness or disease from prolonged exposure
Sealing Agents	Contact with products may result in Dermatitis and occupational respiratory illness or disease from prolonged exposure
Epoxy	Prolonged inhalation of the product may cause irritation, dizziness, nausea and loss of consciousness and Dermatitis from prolonged exposure. The product is considered flammable

6. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

6.1 Structure and Organization of H&S Responsibilities

6.1.1 Notification of Commencement of Construction Work

After the award of the contract, but before commencement of construction work, the Contractor must submit an Annexure 2 notification of construction application to the Provincial Director of the Department of Labour at least 7 days before work commences. Proof of submission and/or receipt must be provided and kept in the Health and Safety file. Work may not commence without confirmation of receipt as issued by the Department of Labour.

Where changes to the conditions given in the submission are required (i.e. Contractors, completion dates, increase in workers), a revised Annexure 2 must be submitted to the Department of Labour. The completion date will include the defect and liability period. A copy of the notification form and any further submissions/ correspondence must be kept in the H&S file.

In the event that the construction work triggers a construction work permit application as contemplated in the Construction Regulation 3, the appointment Construction Health and Safety Agent will make the application of behalf of O.R. Tambo District Municipality.

6.1.2 Health and Safety Plan Framework

The H&S aspects related to the project outlined in the previous sections are to be taken into account when drawing up the H&S Plan. The PC is required to demonstrate competence by providing an H&S system that will address the requirements of the project.

The current legislative requirements, SANS codes and any other standards that may guide practice are to be taken into consideration. The following aspects must be addressed in the H&S Plan as they play

a role in reducing the overall risk of a particular activity, or section of the project. The H&S Agent may from time to time request additions or systems as they relate to the works or legislative requirements at the time.

The PC is to prepare a site layout drawing to indicate at least the following:

- The positions of site office, toilets, drinking water and worker rest areas;
- Indicate the positions of emergency personnel and equipment (fire, first aiders);
- Provision of construction vehicles and pedestrians, indicate parking, and
- Storage areas (materials and equipment, waste etc.)
- Access and egress to site for deliveries
- Emergency assembly point

Such layouts are to be updated regularly throughout the project.

6.1.3 Appointment of Competent Site Personnel

The CEO (OHSA S16.1) of the PC will take overall responsibility for the appointment of competent site staff for the duration of the project. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Contract Manager (OHSA 16.2). Knowledge and training in H&S is required, and certificates indicating H&S training as well as experience to be included in CVs.

All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the appointed full - time SACPCMP registered H&S Officer is kept up to date with all planned activities, to ensure all H&S requirements are met.

Method statements are to be submitted prior to, and during the project where changes or new work is required, and the approval of the Engineer is required before work on that aspect or activity can commence. The H&S Officer is to be included in production planning sessions/meetings to ensure that the appropriate risk assessments, safe work procedures and communication required are available and completed timeously.

Penalties will be applied should this not be adhered to, and deemed a serious offence.

The Occupational Health and Safety Plan shall include the following, but is not limited to the following key appointments:

6.1.4 Construction Manager

A competent Construction Manager must be appointed to manage part or all of the works and have training and/or experience in the area of responsibility. All appointed site supervisors must show evidence of appropriate training in H&S and an understanding or training in areas of responsibility (i.e. risk assessments, method statements etc.).

Curriculum Vitae (CVs) are to be submitted for approval by the Engineer, and/or H&S Agent. The Construction Manager will be held responsible for the safety of all working teams and subordinates.

6.1.5 Construction Health and Safety Officer

The PC will employ a competent full-time H&S Officer and a part-time H&S Officer (*to assist with SMME's H&S compliance*) for the duration of the contract. The H&S Officer's CV is to be submitted for approval by the H&S Agent. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. *mobile phone, computer and internet access, vehicle* etc.) Qualifications shall include at least Grade 12, SAMTRAC/NEBOSH/Diploma in H&S qualifications or similar together with additional appropriate short courses (i.e. Fall Protection Plan Developer, Risk Assessor, Basic Firefighting and First Aider Level 3) with at least 3 years' exposure to civil construction that is

appropriate given the level of project complexity and **registration with SACPCMP**. An in-depth knowledge of legislative requirements and the application thereof is required. The site supervisor may not act as the H&S Officer.

The H&S Officer/s will be held responsible for all H&S on the project.

- Site staff, Supervision, Contractors and visitors are to follow the approved OH&S system and instructions given by the H&S Officer at all times;
- No new workers or Contractors may commence work without the approval of the submitted H&S Plan or having attended the site induction
- No inductions of Contractor staff until the H&S documentation is approved by the H&S Officer
- The H&S Officer/s may not be removed or replaced without the approval of the H&S Agent

A monthly report of all H&S activities and incidents is required by the end of the first week of each month, or at a date agreed to by the H&S Agent and the H&S Officer. An example of the monthly report is attached as an *Annexure B*.

The H&S Officer will be responsible for collating the H&S documentation at the close out of the project in electronic format. A list of the typical aspects that should be provided is available as *Annexure A* to this document. The PC is to ensure that all Contractors documentation follows the same requirements and closed out H&S documentation must be completed and be available with the close out of the main contract.

Failure to do so will be considered a serious offence and penalties applied.

6.1.6 Traffic Management

The PC shall observe the following when working within the road reserve:

When working within existing road reserves the PC shall ensure that as little inconvenience as possible is caused to residents and traffic. Extra care shall be taken with regard to the siting of the excavated material and pipes so that disturbances will be minimized.

The PC shall provide all necessary signage and traffic control personnel to ensure the safety of workmen and the safe passage of traffic when working in or adjacent to roads. The PC shall comply with the Department of Transport's specifications and conditions when working in their road reserve and the cost thereof is deemed to be included in the PC's rates.

The H&S Officer will be responsible for ensuring that daily traffic management is adequately managed and additional care must be taken where workers and public interface. Therefore, a site specific Traffic Accommodation Plan must be developed for implementation with consideration given to the South African Road Traffic Signs Manual.

No worker may be transported in, or on the rear of construction vehicles (*bakkies included*), or with plant and materials to, on, or from site. The number of passengers in any vehicle is limited to what is stated on the license disc. Vehicles used to transport workers to, from, or on site, shall have secure seats and be covered.

The PC must indicate in their OH&S Plans what type of transport is envisaged and how this will be managed.

Penalties will be issued for non-compliances noted.

6.1.7 Health and Safety Representatives and H&S meetings

H&S Representatives representing workers and Contractors are to be appointed following the startup of the project, irrespective of the number of workers on site. The appointed H&S Representatives are to be actively involved with H&S and will assist the H&S Officer and site management in meeting legislative duties.

The H&S Officer shall further ensure that H&S is discussed at all internal production or progress meetings. Issues arising from the H&S Agent audits are to be discussed, as well as all H&S related issues.

6.1.8 Appointment of Competent Contractors

The Principal Contractor is to ensure compliance with the Clients minimum standards and all legislative requirements. The same H&S standards required of the PC are to be applied to all Contractors. An index of all Contractors and Suppliers is to be on file and kept updated at all times. The PC is to ensure there is sufficient funding for H&S compliance by each Contractor.

The following minimum aspects are applicable to any Contractor appointed:

- The H&S Officer is to ensure a Contractors appointment and approval of H&S documentation at least seven (7) working days prior to commencing work.
- No Contractor may work under the PCs Compensation registration number. If required, the PC may assist an SMME with their registration with the Compensation Commissioner. However, such Contractors will not be able to commence work until proof of registration or Letter of Good Standing has been received.
- No work may commence without Mandatary agreements between parties in place.

Failure to provide written approval of H&S documentation will be considered a serious offense, and could result in aspects of, or all the activities being stopped and penalties implemented.

7. GENERAL RISK MANAGEMENT

7.1 Physical, Ergonomical, Behavioural and Task Orientated Risk

The PC must ensure that all employees are adequately informed, instructed, trained and supervised as it relates to the physical, ergonomical, behavioural and task orientated risks likely to be encountered during the scope of works.

The PC is to take cognisance of the Project Baseline Risk Assessment and Risk Profile and cause a site specific risk assessment to be performed by a competent person as per CR 9 before commencement of any construction work.

7.2 Medical Surveillance

The appropriate MSDSs are to be obtained for all products and used to develop the H&S documentation as they relate to the works. Workers will be exposed to noise, dust, and physical risks from extended periods of work of a repetitive nature, materials specified and the general nature of the works.

All workers (*including those of Contractors*) are required to be in possession of a valid medical certificate of fitness prior to commencing work. Full medical records are not to be placed in the H&S file.

Specific testing for existing conditions and limitations relative to exposure could include, but are not limited to:

- Audiometry (hearing tests); and
- Any other tests identified as relevant from chemical or specifically identified risks of exposure

Failure to do so will be considered a serious offence.

7.3 Noise Risks

The PC is to be compliant with the Noise Induced Hearing Loss Regulations and all equipment identified that has not been tested and marked for noise emissions will result in having to be tested at the Contractors or PCs expense. Failure to do so within a reasonable time period will result in such equipment being removed from site.

Audiometric testing of all workers is noted as required in the medical surveillance programme for all workers prior to work commencing. Audiometry records are to be available in the H&S file.

Suitable SANS approved hearing protective equipment shall be issued and worn where noise levels are identified as equal to or greater than 85dB.

Failure to do so will be considered a serious offence

7.4 Emergency Procedures

A simple Emergency Management Plan and procedure that is appropriate to the risks is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The Plan may be adapted should new information or risks are identified.

The procedure shall detail the response plan in relation to the works, and include at least (*but are not limited to*) the following key elements:

- Appointment of a competent emergency response coordinator
- The Contractor will be responsible for developing and implementing a suitable fire management plan for fires at the Site Office, Accommodation, Storage Areas or Veld Fires;
- Public injury or Motor vehicle accidents;
- Falls from heights;
- Serious injury to workers (medical or work-related); and
- Snake Bites
- Excavation and Structure collapse
- Plant - Roll Over's
- Any other major risks identified during risk assessments

The Emergency Management Plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project. The general principals of emergency management are to be applied as it applies to the hierarchy of control and management.

7.5 First Aiders and First Aid Equipment

First aiders shall be available and accessible on site at all times, and be able to work as a team when responding to any emergency on the project.

Contractors are expected to ensure compliance and provide/manage their own First Aiders and equipment. The number of First aiders will be determined by the complexity and exposed risks of the project and not numbers of workers. The PC must ensure the appointment of at least one Level 3 First Aider at each work area.

Appropriately stocked first aid kits are to be available at all times and to assure continual availability and

access to all areas of site.

7.6 Incident Management and Compensation Claims

All incidents and accidents are to be investigated. All serious incidents involving any form of disabling injury or fatality are to be reported to the Engineer /Project Manager/H&S Agent immediately. This shall be confirmed in writing following the incident. Full details are to be included in each site progress meeting. A summary of incidents is to be included in the monthly report. The PC must further ensure that all reportable incidents correspondence is meticulously recorded and all original kept off site.

The PC must ensure that the following injury and incidents statistics are reflected monthly on a suitable register: -

	M	*
No of accumulative man-hours worked without *disabling		
Near Misses		
First Aid		
Medical		
Disabling		
Fatalities		

*CTD - Commencement-to-date

* Disabling Injury - Disabling Injury (DI) is considered as an injury or occupational disease where the injured or ill person misses the next work shift because of the injury or illness or has suffered some bone damage (e.g. A fracture)

7.7 Personal Protective Equipment (PPE) and Clothing

The PC is to provide a procedure as an addendum to indicate how PPE is managed within the Company.

The wearing of the identified SANS approved PPE at all times is non-negotiable. The PC shall ensure that all workers (*including Contractors*) are issued with and shall wear:

- Hard hats;
- Protective footwear;
- Overalls that ensure worker visibility;
- Eye protection;
- Hearing protection;
- Respiratory protection (minimum of FF2 and or respirators), and
- Any other necessary PPE identified from MSDSs and/or risk assessments.

Adequate quantities of PPE shall be available. This shall include necessary PPE for visitors. The procedure for managing PPE is to be in a formal procedure submitted with the H&S Plan for approval.

Any person (*including Client, Engineer etc.*) found on site without the necessary PPE will be removed from site until the PPE is supplied and worn.

Failure to comply will result in penalties being applied.

7.8 Occupational Health and Safety Signage

On-site H&S signage is required. Signage shall be posted up at fixed or temporary working areas, or other potential risk areas/operations. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on

the site drawings indicating where fixed/temporary signage is required.

Temporary signage is to include (*but not be limited to*) the following:

- 'Report to site office' / 'Warning: Construction Site – Keep out' or similar;
- 'Site office' (if relevant);
- 'Hard hat area' or other PPE requirements noted;
- First aid box positions (*including vehicles*); and
- Fire extinguishers.
- Warning Deep Excavations
- Confined space entry - permit required

Signs shall be posted at areas of work on site indicating that a construction site is being entered and that persons should take note of H&S requirements.

Failure to comply will result in penalties being applied.

7.9 Induction of Employees and Visitors, General H&S Training

A simple, formal induction programme is to be submitted as an addendum for approval with the H&S Plan. Inductions must be carried out for all workers and visitors (*including Client, Engineer*) to the site.

Pre-task instruction is required to ensure workers are familiar with the risks and H&S measures of the work or tasks to be done. Such instruction is to be done at least daily. A record of inductions and pre-task instruction is to be kept in the H&S file.

Any person found on site without proof of induction will be removed from site until the proof is supplied and, and a penalty issued per non-compliance.

7.10 Management of Plant and Equipment

Close control of plant and equipment is required, including that of Contractors.

Daily monitoring of all plant and equipment is required prior to commencing work. Full lists of hired and own plant are to be available at the H&S Agent's audit. All daily inspection records are to be kept in the H&S file or Contractors where plant and equipment is brought onto site. Registers are not to be more than 1 week behind.

Only competent, medically fit plant operators are to be used. Medical certificates of fitness are required for all operators. Any plant or slings used to lift plant or material require annual load testing by an AIA, and all certificates must have the testers LMI/E number. Operators are to be adequately trained and certified to operate mobile cranes or crane trucks. Certificates and registers are to be placed in the H&S file.

Failure to do so will be considered a serious offence.

7.11 The use of Radioactive Equipment

The use of radioactive equipment for the measuring of compaction parameters shall conform to the requirements of the "*Code of Practice for the safe use of soil moisture and density gauges containing radioactive sources*" as published by the Department of Health: Directorate: Radiation Control Soil revised September 2001. The PC must ensure that the use of a Nuclear Gauge (Troxler) is safely managed on site by ensuring that a suitable risk assessment and safe work procedure is conducted on the use of the troxler, the operators suitably trained by the manufacturer or similar, workers made aware of the risk exposure and a Radiation Protection Officer appointed. A valid calibration certificate must also be on file.

7.12 Cranes and lifting equipment

Should any form of lifting device or mobile crane be used during the project for deliveries, moving of supplies or equipment, the appropriate documentation must be made available. Method statements, risk assessments, safe work procedures and training are to be available prior to work commencing. A procedure for managing loads and lifting must be made available as an addendum to the H&S Plan. The equipment must always be operated within its capability and if in any doubt, the operator should consult with the operations and maintenance manual supplied by the Original Equipment Manufacturer. A Tractor-Loader-Backhoe (TLB) and Excavator are not deemed lifting machinery therefore are prohibited from being used as such unless modifications have been made to the Plant, inspected by a Mechanical Engineer, tested and approved by an LMI or specified by the Original Equipment Manufacturer. Furthermore, the Operators of such plant must also undergo Lifting and Rigging training.

All lifting tackle must be suitably colour - coded and tagged for the respective quarter of the year and this strictly adhered to. All lifting tackle not conforming to this requirement will be removed from site until conformance is achieved.

7.13 Temporary Works (Scaffolding, support work, formwork)

The PC must ensure that a Temporary Work Management Plan is developed and approved before any work commences with consideration given to the requirements of the CR 12 and SANS 10085. The Designer must further ensure that all scaffolding working platforms are spaced at 3 meter intervals.

“Design - in relation to any structure, includes drawings, calculations, design details and specifications.”
Temporary works must be properly designed and signed off by a competent person who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The competent person/(s) appointed must either be a registered professional engineer or technologist. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Engineer and H&S Agent. Records and registers are to be properly completed and kept in the H&S file. If temporary works are to be erected by a Contractor, this must be notified to the Designer/H&S Agent.

The PC must further price for and ensure that all exposed vertical reinforcing steel is suitably protected to prevent impalement injuries by installing suitably sized (8 -20mm; 25mm; 32mm) “rebar safety caps”.

Failure to do so will be considered a serious offence.

7.14 Working from a Fall Risk Position

A Fall Protection Plan (FPP) developed by a competent person is to be available and supplied as an addendum to the H&S Plan. The FPP must be appropriate for the project. Method statements, appropriate risk assessments, safe work procedures and training are to be available prior to work commencing. All workers exposed to fall risk must undergo formal SAQA accredited “working from height/fall risk position” training.

Should part of the works be contracted out, a competent Contractor is to be appointed and submit documentation according to the project requirements. The PC is to note if such work is to be contracted to specialists in the H&S Plan. The Plan is to be developed by and work managed by a competent person for the duration of the project.

The following aspects must be included:

- The public are to be protected at all times by way of hoarding, barricading or fencing
- Notices to be posted
- Prevention of falling tools or equipment

All workers are to be in possession of valid certificates of fitness that extend for the duration of the works. Note the requirements in the section relating to medical surveillance and the relevant SANS codes as applied to the works and the project. Registers and all relevant documentation are to be placed in the H&S file.

Work will be stopped and penalties applied to any work at a fall risk position that is not compliant. Failure to do so will be considered a serious offence.

7.15 Excavations

A procedure for managing excavations is to be provided as an addendum to the H&S Plan describing how excavations are to be managed for excavations depths ranging greater than 1,5 meters. Excavation method statements are to be approved by the Engineer and associated risk assessments are required. Designs by competent persons are required where ground conditions are deemed to require shoring. A competent person is to be appointed for managing all excavations. A permit system is to be available and used for all excavations. All equipment and ground conditions are to be checked daily and prior to work commencing. Excavations should preferably not be open beyond what can be closed daily. Where excavations need to remain open, all excavations are to be properly protected. Adequate stakes with 1m high demarcation and berms/spoil are required to be a safe distance from the edge of the angle of repose. Danger tape may NOT be used to barricade excavations. Cognisance is required of the surrounding area and increased levels of protection are required where work is in the vicinity of members of the public.

The maximum allowable length of open trench with no pipe laid shall not exceed 100m on any single construction front. The total length of open trench on all construction fronts shall not exceed 500 metres (*without the approval of the Engineer*). It shall be noted that both the public and stray animals in the area are likely to come into contact with the pipeline route and every effort shall be made to ensure that open trenches are maintained in a safe condition at all times. Where groundwater seepage is encountered the trench sidewalls must be shored, or battered back.

In proximity to residential areas, and wherever ordered, the Contractor shall provide and fix to the demarcation fencing approved and substantial plastic square mesh to act as an additional childproof barrier and shall remove same on the completion of the works. The Contractor must ensure that additional Excavation Supervisors are appointed for each work front in the absence of the competent appointee.

The Contractor shall also supply, install and maintain temporary fencing on both sides of the working area (servitude) and around the perimeter of all agreed additional working areas during construction for prevention of unauthorised access and shall remove it on completion of the works. 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 zigzag pattern from the top to the bottom of the fence thereby clearly marking off the working area. Notices in two official languages (*English and isiZulu*) shall be attached to the fence where appropriate to indicate that the site is for personnel employed on the Contract only and that unauthorised entry is forbidden. Work will be stopped and penalties applied to any work in excavations that is not compliant.

7.16 High Voltage Electrical Equipment

Approximate positions of known services are indicated on the drawings for information purposes only. The position of existing services cannot be guaranteed. The PC shall take all necessary steps to ascertain the exact location of the existing services before commencing any section of the works and shall exercise the greatest care when working in the vicinity of such services. The PC must establish the position of existing services where applicable by contacting the authority or authorities responsible for such services, by using specialized equipment and opening up by hand.

The PC shall so carry out all his operations as not to encroach on, or interfere with, trespass on, or damage adjoining lands, buildings, properties, road structures, pipelines, places and things, in the vicinity of the works and so as not to interfere in any way at any time with the smooth and continuous operation of the existing facilities.

7.17 Blasting

No blasting shall be carried out for the execution of the works without the prior consent of the Engineer. This consent will not be given where in the opinion of the Engineer blasting may give rise to unnecessary risk of damage to surrounding property and other means of excavation are available to the PC. Where consent to blasting is given such consent shall in no way relieve the PC of any of his liabilities under the Contract.

No blasting will be permitted within **10 m** of any structure, pipeline or service unless the PC can satisfy the Engineer that his proposed blasting methods and controls are such that no damage will be caused to the adjoining structure, pipeline or service. Should any blasting be required, the Engineer will require that vibro-readings to be taken at critical locations at no additional cost to the Employer. A maximum peak particle velocity of 25 mm/s will be permitted. No blasting is to be carried out in Eskom, Telkom or other servitudes or wayleaves unless the relevant authorities have been advised in writing three weeks prior to blasting.

Where blasting is carried out the PC shall arrange for a representative of the relevant authority and Client H&S Agent to be present prior to and during the blast. Further, before any blasting is undertaken, the Contractor, together with the Engineer shall examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting and establish and record together with the owners thereof of the extent of cracking or damage that may exist before commencement of blasting operations. A photographic record will be required of neighbouring structures before blasting commences.

The PC or appointed specialist subcontractor shall conform to the applicable legislation in regard to blasting, handling and storage of explosives. A copy of each blasting permit issued to workmen, and of each permit issued to the Contractor to cover the purchase, storage and transport of explosives, shall be handed to the Engineer.

Under no circumstance may a specialist Subcontractor commence with blasting operations without the submission and approval of a site specific Health and Safety Plan and associated documentation.

7.18 Water Environment

The crossing of rivers will be subject to the requirements of the Project Environmental Management Specification and O. R. Tambo District Municipality Particular Specification for Environmental Management of Construction Projects. For practical purposes the construction of the river crossing should be undertaken in times of low flow (winter) and under ideal conditions. The PC is required to submit a detailed construction method statement, site specific risk assessment and safe work procedure prior to commencement of the river crossings.

7.19 Auditing and Inspections

External auditing by the H&S Agent will be at least monthly and the site inspected on a weekly basis and the documentation audited relative to the activities and H&S Plan. The H&S Officer of the PC must accompany the H&S Agent, on all audits.

The PC will ensure that all their Contractors are audited at a frequency determined by the H&S Agent. Audit frequency may be increased if Contractors are not performing adequately. Audit results will be acted upon and non-conformances and penalties issued where deemed appropriate. The H&S Agent may act or require further outcomes if non-compliances are noted or unsafe acts are noted on site.

Internal audits are to include site conditions as well as ensuring H&S files are appropriate, and compliant. Comprehensive audit reports are to be made available, the format of the audit reports are to be acceptable by the H&S Agent.

Compliance with legislative requirements and the systems provided by the PC to manage the H&S on site will be measured. Full compliance is required. Time limits for corrective actions will be set and must be adhered to.

Failure to address findings or non-conformances will be considered a serious offence.

7.20 Communication on Site

All H&S communication during the project between the H&S Agent and the PC will be done through the Engineer and be in writing, including the issue and responses to non-conformances and H&S audit results

Failure to address issues timeously will be considered a serious offence.

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7.21 Care of Workers on Site (Welfare)

The PC must ensure that suitable worker welfare facilities are provided and maintained for the duration of the Contract. This should include the erection of temporary mobile sheltered rest areas during the pipeline construction activities.

Failure to ensure compliance will be considered a serious offence.

7.22 Discipline, Alcohol and Substance Abuse

All employees (*management included*) are to follow instructions given in the interest of H&S. A disciplinary procedure is to be developed and disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies.

No person is allowed to work or access site if under the influence of alcohol or other substances that could impact on their own or others safety. The PC is to have a drug and alcohol policy available to manage such instances.

These requirements are applicable to any employee of any organization providing services on site. Penalties may also be applied by the Client, OHS Agent or Engineer.

7.23 HIV and AIDS Programme

The PC shall reduce the risk of transfer of HIV between and amongst construction workers and the local community, raise awareness amongst construction workers of the risk of infection with HIV, promote early diagnosis and assist affected individuals to access care and counselling by:-

- making condoms that comply with the requirements of SANS 4074 available for the duration of the contract to all construction workers at points on the site which are readily accessible and suitably protected from the elements
- either by placing and maintaining HIV/AIDS awareness posters of the size not less than an A1 in areas which are highly trafficked by construction workers or providing construction workers with a pamphlet in languages largely understood by the construction workers which reinforces the outcomes of the HIV/AIDS awareness programme
- encouraging voluntary HIV/STI testing providing information concerning counselling, support care of those that are affected

7.24 Safety Conflict

Where any conflict exists between the requirements of this PSHSS, the Site Rules or Statutory requirements or Regulations the higher standard must apply unless such conflict is brought to the attention of the H&S Agent and a direction provided. The PC is deemed to have allowed for the higher standard.

The PC is legally responsible for ensuring that they conform to all applicable aspects of the Occupational Health and Safety Act 85 of 1993 and Regulations (*as amended*) and other relevant

Acts and Regulations. If in dispute with the PSHSS and other legislation the most stringent requirement must apply.

7.25 Management of Change

Whether changes are planned or unplanned it is important to ensure that their potential impact on Health and Safety in this project is properly assessed, so that hazards or risks associated with the change are identified and effectively managed. Therefore, the PC must develop an effective management of change process, which is capable of being implemented throughout the projects life cycle to enable changes to be effectively managed.

This process should consider:-

- The methods and work required to be changed;
- The methods and work required to implement the change;
- Additional equipment required to be used to implement change or that which is required to be introduced as a result of the change;
- The review and, where necessary, revision of existing risk assessments;
- The review and, where necessary, revision of existing safe system of work, method statements and work instructions;
- Any additional control measures - organisational, procedural, engineering controls and/or PPE, necessary to implement the change and/or required to be introduced as a result of the change;
- The issuing of modified information and instruction;
- The re-training of personnel involved with the work; and
- The allocation of sufficient time and resources to implement the change;
- Provide the project Safety personnel with the change information

7.26 Environmental Management

The O. R. Tambo District Municipality Particular Specification for Environmental Management of Construction Projects constitutes the Environmental Management Plan for this project. However, compliance with the project Environmental Management Plan (EMP) as well as the rehabilitation plan will be necessary.

The objective of the EMP is to manage the impacts of construction identified during the course of the Environmental Impact Assessment (EIA) process, as well as during the course of construction. This is a dynamic document and will be continuously updated in order to reflect current site conditions and address any issues identified during the course of construction. The EMP therefore serves as an action plan for the implementation of mitigation measures proposed for Libode Secondary BWSS.

7.26.1 Dust Prevention

The creation of dust in the PC's working area shall be kept to a minimum, particularly when working in inhabited areas, and shall conform to the requirements of the Environmental Management Plan. The PC shall water, on a daily basis, the areas of the site, where dust is created by the PC's working methods or as ordered by the Engineer. The PC shall take all measures necessary to prevent the creation of dust from any source under his control.

7.26.2 Snakes

Although most snake bite cases occur during the dry cool months (*March – June*), snakes are much more active in a humid climate and just before hibernating during the winter months therefore based on the construction geographical area consideration must be given to snakes/*(venomous animals)* risk awareness training and the additional requirements of the Project Environmental Management Plan.

7.26.3 Heat Stress

Working in very hot conditions can cause illness when heat stress overcomes the body's temperatures regulatory system resulting in heat strokes, heat exhaustion, dehydration, heat syncope, heat cramps

and heat rash.

Considering the elevated temperatures experienced in the Eastern Cape region it is imperative that the PC develop a Heat Stress Management Plan in order to reduce the risk associated with heat stress.

8. HEALTH AND SAFETY FILE

The documentation submitted and approved following the awarding of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible.

The following completed information shall be included (*but not be limited to*) as part of the index:

- The PSHSS;
- The H&S Plan, FPP, TMP and the approval by H&S Agent;
- Appointment by Client;
- Mandatary agreement with Client;
- Client notification of construction work;
- Detailed list of Contractors with contact details, appointments, Mandataries etc., H&S specifications issued;
- Record of Competencies (CVs) and appointments;
- Training Records;
- Method statements;
- Risk assessments;
- Safe work procedures;
- Emergency and injury management;
- Material Safety data sheets
- Medical surveillance records;
- Registers; and
- Records of audits, minutes etc.
- Employee records (*who is on site*)

9. NON-CONFORMANCES

Should, at any time, the works, or part of the works, be stopped due to unsafe acts or non-compliance with the Clients PSHSS or PCs H&S Plan; neither the PC nor any other Contractor shall have a claim for extension of time or any other compensation.

The following constitute examples of the types of non-conformances that will attract penalties:

	Medium Penalty: R500/count and a non-conformance	Severe Penalty: R5000/count, a non-conformance and/or activity stoppage
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Non-use of PPE supplied	Toilets not supplied o regularly serviced; lack of drinking water	Contractors working without Health and Safety Plan approval
Non completion of registers for equipment on site	Contractors not audited	Workers transported in contravention of the OHS Plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate, approved H&S method statements	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	No designs submitted for temporary works
	No monthly OHS report at site meeting to report on	Any serious breach of legal requirements
	No certificates of fitness for workers as required	
	Working without approved method statements	

9.1 Failure to Comply with Provisions

Failure or refusal on the part of the PC or their Contractors to take the necessary steps to ensure the safety of workers and the general public in accordance with these specifications or as required by statutory authorities or ordered by the Engineer, shall be sufficient cause for the Engineer to apply penalties as follows:

- (i) A penalty as shown in the Table above shall be deducted for each and every occurrence of non-compliance with any of the requirements of the PSHSS.

In addition, a time-related penalty of R500,00 per hour over and above the fixed penalty may be deducted for non-compliance to rectify any non-conformance within the allowable time after a site instruction to this effect has been given by the PA. The site instruction shall state the agreed time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

ANNEXURE B. 1 CLOSE OUT REQUIREMENTS

The H&S files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project. The following list is an example of what should be included but is not exhaustive. The OH&S Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. All records to be in electronic format and submitted to the OH&S Agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.

Health and Safety close out file requirements include:

- a) Client H&S Specification
- b) Principal Contractor's OHS Plan(s)
- c) Organograms
- d) Legal Appointments
- e) Department of Labour Annexure 2 and or Permit
- f) Letters of Good Standing for the Project
- g) Full files for all Contractors as well as their close out reports
 - List of Contractors
 - All employees employed on a permanent or contractual basis over the duration of the contract
 - Letters of Approval of Contractors
 - Mandatary Agreements
 - Letters of Good Standing
 - Appointments
- h) Incident Records
- i) Non- Conformance records
- j) Agent's Audits
- k) Method Statements
- l) Risk assessments
- m) Safe work procedures
- n) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended

Defect and Liability Period

The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OH&S Agent prior to any work commencing.

ANNEXURE B. 2:

CONTRACTORS MONTHLY HEALTH AND SAFETY REPORT

(To be submitted by the end of the first week of each month and be available with each audit)

CONTRACT NUMBER:		PROJECT NAME:	CONTRACT DETAILS:
1	GENERAL ACTIVITIES FOR THE MONTH (Detail each area of work)		
2	NUMBER OF WORKERS (permanent and local, contractors)		
3	TRAINING DONE (supplier, no of people, type)		
4	INCIDENTS / ACCIDENT (list number and details, attach reports)		
6	NON-CONFORMANCES (closed out or active)		
7	CONTRACTORS (list, approval status)		
8	AUDITS COMPLETED (internal and external)		

9	CRITICAL ISSUES	
10	GENERAL	

H&S Officer _____ **Signature** _____ **Date:** _____
Site Agent _____ **Signature** _____ **Date:** _____

**ADDENDUM TO CONSTRUCTION HEALTH AND SAFETY SPECIFICATION
& BASELINE RISK ASSESSMENT**

COVID-19 SPECIFICATION



O.R. TAMBO
DISTRICT MUNICIPALITY

DOCUMENT REF:	ADDENDUM TO CONSTRUCTION HEALTH AND SAFETY SPECIFICATION & BASELINE RISK ASSESSMENT
PROJECT:	LIBODE SECONDARY BWSS
CLIENT:	O.R. THAMBO DISTRICT MUNICIPALITY
PROJECT NO:	
DOCUMENT DATE:	06 JUNE 2020
REVISION:	00

Prepared for:

O.R. Thambo District Municipality

Prepared by:

Denver Francis

Pr. CHSA 044/2016



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1. INTRODUCTION

On 23 April 2020, President Cyril Ramaphosa addressed the nation and announced that the country would resume economic activity in a phased approach from 1 May 2020. In order to reduce the impact of COVID-19 on businesses, workers, customers and the public, O.R. Thambo District Municipality, within the parameters of the COVID-19 regulatory framework, want to ensure that all those businesses, workers, customers and public it's interacting with are in compliance to the requirements as stipulated to ensure a safe work- environment for all.

To this effect ORM Safety Consultants has issued this addendum to the Contract Baseline Risk Assessment and H&S Specification. As more information unfolded from various industry bodies in the days after the announcement of the risk adjusted strategy to a level 4 & 3, this information has now been incorporated into this addendum, Rev0

2. DEFINITIONS AND ACRONYMS

Table 1: Definitions & Acronyms

2.1. ALARP	As low as reasonably practicable
2.2. CR	Construction Regulations
2.3. COVID - 19	Corona Virus Disease 2019
2.4. COIDA	Compensation for Occupational, Injury &
2.5. DoE&L	Department of Employment & Labour
2.6. DSTI	Daily Safety Task Instruction
2.7. ECSA	Engineering Council of South Africa
2.8. Hierarchy of Control	A system used in industry to minimize or eliminate exposure to hazards
2.9. OH&S	Occupational Health and Safety
2.10. Risk	Means the probability that injury or
2.11. RHBA	Regulation for Hazardous Biological
2.12. PPE	Personal Protective Equipment

3. PURPOSE

This addendum sets out the key principles and minimum requirements of O.R. Thambo District Municipality that defines responsible, healthy and safe operations for the supply Bulk Water Infrastructure related operations related operations working under COVID-19 Alert Level 4. The present state of the lockdown is geared toward the revival of economic activities and to allow employees involved in permitted services to resume work under certain conditions. This COVID-19 specification has been developed on the basis of traditional infection prevention and occupational hygiene practices.

Note:

- i. Non-essential physical work that requires close contact between workers should not be carried out
- ii. Work requiring skin to skin contact should not be carried out

4. REFERENCES

- i) Occupational Health and Safety Act, 85 of 1993

- ii) Construction Regulations 2014
- iii) Regulations for Hazardous Biological Agents
- iv) Sector Guidelines (DoE&L; KZNDoT; DoH; ECSA; WHO; UW)
- v) COVID – 19 Occupational Health and Safety Measures in Work Place – Directive (C19 OHS)
- vi) Disaster Management Act, 57 of 2002

5. LEGISLATIVE FRAMEWORK

The legislation governing workplaces in relation to COVID –19 is the Occupational Health and Safety Act, Act 85 of 1993, as amended, and with the Regulation for Hazardous Biological Agents, 2001 and the Construction Regulation 2014. Section 8(1) of the Occupational Health and Safety Act, Act 85 of 1993, as amended, requires the employer to provide and maintain a working environment that is, to the extent possible reasonably practicable, as amended. Specifically, Section 8(2)(b) and CR 9(1) requires steps that may be reasonably practicable to eliminate or mitigate any hazard or potential hazard prior to the use of personal protective equipment.

6. RESPONSIBILITY

Although mitigating risk and level the COVID – 19 curve is a collective responsibility, based on government gazette issued by the Department of Employment and Labour, it is expected of the Contractor to appoint a designated Manager from their employ to manage COVID – 19 on site H&S measures.

7. RISK ADJUSTED STRATEGY

The lockdown levels depicted by Figure 1 below, will be lifted in phases, level 5 the highest and level 1 being the lowest as depicted below. It is expected that the Contractor makes provision in the risk assessment to a phased approach based on the gazetted level adjustments and specific levels.

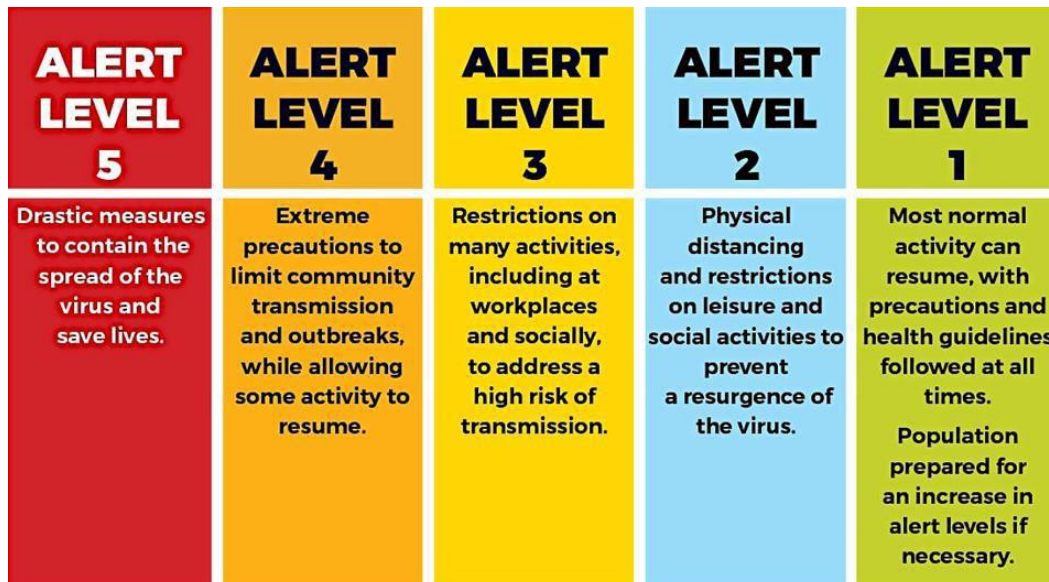


Figure 1: COVID-19 Alert Levels

7.1 ALERT LEVEL 3

The Contractor should consider implementation under respective Alert Phases ie.

PHASE 1 –

- i) Workplace Readiness (In this Phase, only key staff or external specialist cleaning provider will return to site in order to get the site ready and put in place the necessary systems and procedures for the return to operations)

Phase 2 –

- i) In this Phase, additional staff will be brought on to site to commence with construction related activities under the Guidelines and Mitigations as set out by, method statements, risk assessment and Covid-19 Business Continuity/ Workplace Plan which will include:-
 - o 30% of site staff with a gradual increase as required
 - o Site Supervision
 - o Essential office staff who are unable to work from home
 - o Site Supervision

8. RISK MANAGEMENT

8.1 RISK SCOPE

As contemplated in Section 8 (2) (d) of the OHS Act read in conjunction with CR 9(1) and RHBA 6, before the implementation of control measures, current risk assessments should be reviewed and updated, taking into account the new hazards posed by exposure to COVID-19 in the workplace which is conveyed to the workers. Risk Assessments should be done to determine the risk of exposure communicated to the workers.

The Contractor should adapt infection control strategies based on a thorough hazard assessment, using appropriate combinations of engineering and administrative controls, safe work practices, and personal protective equipment (PPE) to prevent worker exposures.



Figure 2: Infection Control Strategies

In preventing occupational exposure to COVID-19 it is also expected of the Contractor to train workers on elements of infection prevention, including PPE (as per DoE&L Directive). This would assist Contractors to identify:

- Exposure Levels
- “High Contact” Activities, and
- Vulnerable Workers and Special Measures

The Contractor is expected to undertake and champion the principles of constantly focussing on eliminating or reducing the risk of COVID-19 transmission to ALARP, engaging meaningfully with

their workforce, and making worker health a key priority. A revised Baseline Risk Assessment is included under COVID-19 Baseline Risk Assessment.

8.2 SITE OPERATING PROCEDURES

In line with government guidelines on social distancing, this specification is intended to implement effective steps at O.R. Thambo District Municipality's Libode Secondary BWSS project. These are extraordinary situations, and O.R. Thambo District Municipality intends to abide to the latest COVID-19 advice from national government.

8.2.1 SELF-ISOLATION

The Contractor must ensure that anyone who meets one of the following criteria should not come to site:

- i) Has a high temperature or a new persistent cough
- ii) Is a vulnerable person (by virtue of their age, underlying health condition, clinical condition, pregnancy or is positive)
- iii) Is living with someone in self-isolation or with a vulnerable person

8.2.2 EMERGENCY PREPAREDNESS

An updated Emergency Preparedness Plan is to be completed that is in line with the current Regulations of the National Disaster Management Act with consideration given to social distancing at Assembly Points.

If a worker develops a high temperature or a persistent cough while at work, the Contractors responsible appointee must ensure that they should:

- i) Return home immediately (ie. Contractor to provide transport)
- ii) Avoid touching anything
- iii) Cough or sneeze into a tissue and put it in a bin, or if they do not have tissues, cough and sneeze into the crook of your bent elbow
- iv) They must self-isolate and not return to work until their period of self-isolation has been completed and his or her negative status has been confirmed
- v) Contact the Coronavirus Hotline - 0800 029 999 for advice to attend a designated testing centre

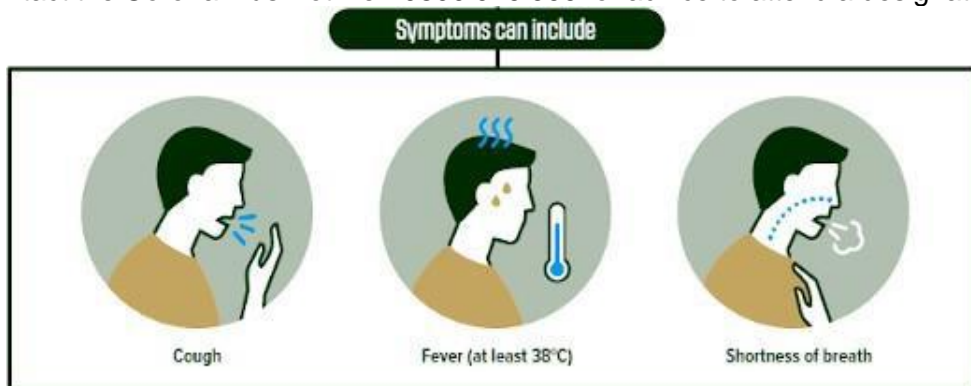


Figure 3: Symptoms of COVID-19 (WHO – Fever > 37.4)

8.2.3 TRAVEL TO SITE

Where a return to work will necessitate travel between provinces and cities for employees and workers to return to the project, the Contractor is to have a procedure for, or provide transport for the return of workers to minimize the risk of exposure to the virus while in transit. Where on-site transportation is done, a policy needs to be available for how such transportation will be made safe and limit any opportunity for cross infection. Wherever possible workers should travel to site alone using their own transport and Contractor should

consider the following:

- i) Employer managed travel
- ii) Parking arrangements for additional cars
- iii) Other means of transport to avoid public transport e.g. cycling;
- iv) They must ensure disinfecting the alternative transport before and after use; and Public Transport Regulations in respect of COVID-19 are adhered to
- v) Providing hand cleaning facilities at entrances and exits. This should be soap, running water and paper towels (and not fabric towels) wherever possible or hand sanitiser if water is not available
- vi) How someone detected vulnerable after screening, taken ill would get transported home

8.2.4 SITE ACCESS POINTS

In order to control unauthorised access onto site the Contractor shall suitably manage site access points with consideration given to the following:-

- i. Stop all non-essential visitors
- ii. People, be it workers or visitors, without relevant face masks should not be allowed to enter construction sites; and workers should wear face masks at all times
- iii. Introduce staggered start and finish times to reduce congestion and contact at all times (if possible)
- iv. Monitor site access points to enable physical social distancing. Consideration may be given to an alternative site access point
- v. Require all workers to wash or clean their hands before entering or leaving the site or as frequent as possible
- vi. Allow plenty of space (minimum 1,5 metres) between people waiting to enter site
- vii. Regularly clean common contact surfaces in Site Office, Access Control and delivery areas e.g. scanners, screens, desks, particularly during peak flow times
- viii. Reduce the number of people in attendance at site inductions, DSTI's, Toolbox Talks and consider holding them outdoors wherever possible and always ensure a minimum of 1,5 metres social physical distance is maintained between people
- ix. Drivers should remain in their vehicles if the load will allow it and must wash or clean their hands with 70% alcohol based sanitizer before unloading goods and materials

8.2.5 HAND WASHING

The Contractor's responsible appointee shall ensure that basic hand hygiene practices are implemented on site and reinforced via toolbox talks and DSTI'S. The following should be considered:

- i) Ensure soap, fresh water and paper towels is always readily available and kept topped up
- ii) Provide hand sanitiser where hand washing facilities are unavailable
- iii) Regularly clean the hand washing facilities and check soap and sanitiser levels
- iv) Provide suitable and enough rubbish bins for hand paper towels with regular removal and disposal
- v) Sites will need extra supplies of soap, hand sanitiser and paper towels and these should be securely stored
- vi) Site bin should also be lined with plastic bin bags, fitted with non-contact lids, clear biological signage displayed and disposed of as per the revised Waste Management Plan

8.2.6 TOILET FACILITIES

The Contractor should ensure the following: -

- i. Restrict the number of people using toilet facilities at any one time e.g. use a welfare attendant
- ii. Wash hands before and after using the facilities
- iii. Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush handles or buttons
- iv. Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently
- v. Provide suitable and sufficient rubbish bins for paper hand towels with regular removal and disposal
- vi. Implement a cleaning roster and provide cleaning personnel with the relevant PPE as identified in the COVID-19 activity risk assessment

8.2.7 EATING FACILITIES

Whilst there is a requirement for construction sites to provide a means of heating food and making hot drinks, these are exceptional circumstances and where it is not possible to introduce a means of keeping equipment clean between use, kettles, microwaves etc. must be removed from use.

The workforce should also be required to stay on site once they have entered it and not use local shops.

- i) Dedicated eating areas should be identified on site to reduce food waste and contamination
- ii) Break times should always be staggered to reduce congestion and contact
- iii) Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area
- iv) The workforce should be asked to bring pre-prepared meals and refillable drinking bottles from home
- v) Workers should sit 2 metres apart from each other whilst eating and avoid all contact
- vi) Where catering is provided on site, it should provide pre-prepared and wrapped food only
- vii) Crockery, eating utensils, cups etc. should not be used
- viii) Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced
- ix) Tables should be cleaned before and after use
- x) All rubbish should be put straight in the bin and not left for someone else to clear up
- xi) All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, vending machines and payment devices.

8.2.8 CHANGING FACILITIES & or SHOWERS

In order to further mitigate the risk of transmission of COVID – 19 the Contractor shall consider the following:

- i) Consider introducing staggered start and finish times to reduce congestion and contact
- ii) Introduce enhanced cleaning of all facilities throughout the day and at the end of each day
- iii) Consider increasing the number or size of facilities available on site if possible
- iv) Based on the size of each facility, determine how many people can use it at
- v) any one time to maintain a distance of 1 ½ metres
- vi) Provide suitable and enough rubbish bins in these areas with regular removal and disposal

8.2.9 SITE MEETINGS

- i) Only absolutely necessary meeting participants should attend
- ii) Attendees should be 1 ½ metres apart from each other
- iii) Rooms should be well ventilated / windows opened to allow fresh air circulation
- iv) Consider holding meetings in open areas where possible
- v) Face masks to be worn by all participants

8.2.10 CLEANING

Enhanced cleaning procedures should be in place across the site, particularly in communal areas and at touch points including:

- i) Taps and washing facilities
- ii) Toilet flush and seats
- iii) Door handles and push plates
- iv) Handrails
- v) Machinery and equipment controls
- vi) Eating surfaces
- vii) Keyboards, photocopiers and other office equipment

Rubbish collection and storage points should be increased and emptied regularly throughout and at the end of each shift

8.2.11 MEDICAL SURVEILLANCE

The standard requirements of pre-placement, periodic and exit medicals will remain, with the Occupational Medical Practitioner providing direction based on the South African Thoracic Society guidelines which include no lung functions or peak flows being done until deemed safe to do so by the aforementioned.

Any person who contracts the virus may need to be reported to the Compensation Commissioner as an occupational disease as per COIDA

8.2.12 WASTE MANAGEMENT FOR COVID -19 WASTE

The Contractor's Waste Management Plan is to be updated to include provision for the disposal of additional waste generated due to preventative measures implemented and all resulting waste to be managed as hazardous waste.

8.2.13 SIGNAGE

The Contractor shall install additional signage with site rules specific to the prevention of spreading the COVID-19 virus at the access control points of the site and other conspicuous points eg. Screening Areas, Eating Areas, Ablutions, Hand Washing Stations & Storerooms.



Figure 4: Signage Signs

8.2.14 PERSONAL PROTECTIVE EQUIPMENT

The Contractor shall ensure that the hierarchy of control and training applies with the use of PPE. Masks are compulsory for all personal. For general administration purposes cloth masks may be worn and N95 masks for First Aiders due to the national shortage thereof. All employees to have access to N95 or FFPT2 masks when required, only in instances of HIGH RISK OF EXPOSURE.

The COVID – 19 Manager shall further ensure that all N95 and FFP2 masks are disposed of after 1 day's use and that sufficient stock is at all-time available on site.

i) Face Shields

The Contractor should consider the use of full face shields for preventing spreading of virus through eyes especially in close proximity work activities. Face shields should be cleaned with suitable cleaning agents or disinfectants daily before the shift and at the end of the shift.

ii) Overalls & Cloth Masks

All employees must be issued with three overalls to ensure that the employee will be able to wear clean hygienic overalls.

8.2.15 VENTILATION

As inadequate ventilation may result in the spread on COVID 19 droplets and result in employee infections, the Contractor must ensure that adequate natural ventilation is utilized where reasonably practicable when working in enclosed spaces in order mitigate the transmission of droplets when using positive pressure fans or air-conditioning systems. Air conditioners are not to be utilized in offices and where mechanical ventilation is used in confined spaces the Contractor must ensure that ventilation in the form of extraction is preferably utilised where reasonably practicable

9. BASELINE RISK ASSESSMENT

RISK MATRIX CRITERIA - As a minimum the frequency, severity and exposure criteria has been adopted to evaluate the identified risk

9.1 Severity

This refers to the significance of the effect that the identified risks may have on a person/s should the risks not be adequately and effectively controlled.

SEVERITY CRITERIA			
Weight No	Hazard Description	Environment	Safety/Health
1	Insignificant	Low impact, natural rehabilitation	First Aid treatment required
2	Minor	Short-term ecological impact. Requires intervention	Minor injuries or exposure requiring medical attention
4	Moderate	Ecological disturbance, can be rehabilitated	Disabling injury or occupational illness
8	Major	Reversible ecological damage with potential long term impact	Fatality or number of disabilities/disabling diseases
16	Catastrophic	Irreversible ecological damage	Multiple fatalities due to injury or occupational disease

9.2 Frequency

This refers to the number of times a loss producing event occurs in a given period of time.

FREQUENCY CRITERIA		
Weight No	Hazard Description	Frequency
1	Rare	Less than once every 2 years
2	Infrequent	Every 1-5 years
3	Frequent	Multiple times per year
4	Often	Monthly
5	Consistent	Weekly/Daily

9.3 Exposure

This refers to the number of times a loss producing event occurs in a given period of time

EXPOSURE CRITERIA			
Weight No	Hazard Description	Environmental Exposure	Safety/Health Exposure
1	Minimal	Incident site	A few of the workforce minimal time
2	Restricted	Localised	A few of the workforce, some of the time/some of the workforce minimal time
3	Local	Construction Site Wide	Some of the workforce, some of the time
4	Widespread	Immediate neighbours	Most of the workforce, some of the time/some of the workforce most of the time
5	Extensive	Community exposure	Most of the workforce, most of the time

9.4 Risk Prioritization

This refers to the prioritization of risk based on their rating from high to low risks

RISK RANKING	
Total	Priority
20 - 26	High
12 - 19	Medium
3 - 11	Low

Annexure 1 - Safe Work Practice

Risk Ref	Activity	Potential Hazard	Risk	S	H	E	Risk Evaluation			Pure Risk	Control Mitigation	Effectiveness of Controls	Residual Risks	Risk Ranking
							S	F	E					
1	Occupational Health - COVID 19													
	1.1 Development and Implementation of a comprehensive COVID-19 Coronavirus/ Pandemic Management and Business	a) Failure to have a site/ company specific COVID-19 Coronavirus Pandemic and Business Continuity Management Plan	1.1 Failure to have a site/ company specific COVID-19 Coronavirus and Business Continuity Management Plan may result in contracting and spreading of the virus due to a lack of		<input checked="" type="checkbox"/>		16	5	5	26	1.1.1 The Construction Manager must ensure that a site specific COVID-19 Coronavirus and Business Continuity Management Plan is developed for implementation in conjunction with the international and local	60%	40%	65
		b) Workers not trained in the Covid-19 Pandemic Management Plan	1.1 Workers not trained in the COVID-19 Management Plan may result in their inability to effectively understand the pandemic and the associated dangers		<input checked="" type="checkbox"/>		16	3	5	24	1.1.1 The Construction Manager must ensure that all workers, visitors, suppliers and Subcontractors are adequately and regularly trained to understand the impact and severity of the COVID-19 Coronavirus Pandemic	60%	40%	60
		c) Insufficient/ inadequate or no PPE	1.2 Insufficient/ inadequate or no PPE on site may result in contamination and spread of the virus		<input checked="" type="checkbox"/>		16	2	3	21	1.2.1 The Construction Manager must ensure that a suitable and adequate amount of personal protective equipment and clothing as identified during a COVID-19 risk assessment process is available on site at all times with	60%	40%	52,5

										wrt Employers responsibilities (2 x face masks - laundered regularly)			
		d) Incorrect use or disposal of PPE	1.2 Incorrect use or disposal of PPE may result in contamination or spreading of the virus		<input checked="" type="checkbox"/>	16	2	3	21	1.2.1 The Construction Manager must ensure that training is provided in the correct use of PPE, i.e. correct and safe putting on, removing and correct disposal methods adopted	60%	40%	52,5
1.3 Employee Public Transportation	a) Employee utilizing public transportation may be exposed to contracting COVID - 19	1.3 Continuous exposure to COVID 19 may result in contracting the virus		<input checked="" type="checkbox"/>	16	5	5	26	1.3.1 The Construction Manager must ensure that Office support staff to remain working from home and include the following in their Business Continuity Plan ie. 1) Provide transportation from designated non congested pick stop where feasible and here not possible to avoid, use of public transport to comply with the transport limitations 2) Provide employees with information on the virus and precautions to take during travel ie: if possible, maintain social distancing (at least 1,5 m) between yourself and anyone else when travelling 3) Frequently clean hands	80%	20%	130	

											by using 70% alcohol-based hand rub or soap and water 4) Avoid touching eyes, nose or mouth 5) Always wear a suitable face mask 6) Cancel travel for employees experiencing symptoms of the virus 7) Regular testing of body temperature			
		b) Employee inter-provincial travel	1.3 Employee inter-provincial travel may result in cross border transmission and an increase in the infection of on-site personnel		<input checked="" type="checkbox"/>		8	2	4	14	1.3.1 The Construction Manager must ensure that employees deployed from other provinces are adequately screened within their residential jurisdiction and only once declared fit ie. COVID19 negative or asymptomatic should they to be issued with travel/work permits 1.3.2 That all employees/ staff traveling on public transport wear appropriate face masks and regularly use hand sanitiser with at least 70% alcohol content	80%	20%	70
		c) Temporary Accommodation	1.3 Employee staying in temporary accommodation or B&B's		<input checked="" type="checkbox"/>		8	5	2	15	1.3.1 The Construction Manager must ensure that employees staying in temporary accommodation or B&B's are declared fit ie. COVID 19 negative or asymptomatic and their accommodation suitable sanitized and face masks worn accordingly	80%	20%	75

	1.4 Site Access	a) Accessing site by non-employees	1.4 Accessing site by non-employees may result in Covid-19 contraction		<input checked="" type="checkbox"/>		8	2	2	12	<p>1.4.1 The Construction Manager ensure that their Business Continuity Plan includes the following ie.</p> <ol style="list-style-type: none"> 1) The prohibition/stopping of all non-essential visitors which should include the screening of all employees and non-employees with non-contact thermometers 2) The Construction Manager should consider the following when the body temperature check with a non-contact thermometer is done, must be conducted upon employee's/ visitor's arrival as well as departure and recorded in the appropriate screening register 3) That should the temperature screening taken on a person be 37.4°C or higher, that access to site for that persons is denied and screening documenting and that reporting procedures regarding the above are followed 4) Further it is recommended that the Contractor introduces staggered start and finish times to reduce congestion 	80%	20%	60
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										<p>and contact at all times</p> <p>5) The H&S Officer must ensure that the site access points are monitored to enable social distancing of a minimum 1,5 meters</p> <p>6) Change the number of access points, either increase to reduce congestion or decrease to enable monitoring</p> <p>7) Disinfectant is to be placed in the trough and all shoes coming onto site or leaving site will be disinfected</p> <p>7) Require all workers to wash or clean their hands before entering or leaving the site</p> <p>8) Allow plenty of space (1,5 metres) between people waiting to enter site</p> <p>9) Regularly clean common contact surfaces in reception, office, access control and delivery areas e.g. scanners, turnstiles, screens, telephone handsets, desks, particularly during peak times</p> <p>10) Reduce the number of people in attendance at site inductions and consider holding them outdoors wherever possible</p>			
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		b) Non-competent security personnel performing screening	1.4 Non-competent security personnel performing screening may result in inaccurate information being presented and or an increase in transmissions		<input checked="" type="checkbox"/>		8	5	5	18	1.4.1 The Construction Manager must ensure that security personnel used to implement screening have the required aptitude and suitably trained on the Covid-19 risk assessment and control measures	60%	40%	45
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	1.5 Welfare Facilities	a) Unhygienic Ablution & Eating Facilities	1.5.1 Using unhygienic Ablution & Eating Facilities may result in transmission of COVID 19		<input checked="" type="checkbox"/>		8	5	5	18	<p>1.5.1 The Construction Manager must ensure that the following is included in the COVID 19 Business Continuity Plan ie.</p> <ol style="list-style-type: none"> 1) Ensure that a dedicated team is deployed to manage hygiene on site 2) Restrict the number of people using toilet facilities at any one time 3) Employees to wash hands before and after using the facilities 4) Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush 5) Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently 6) Provide suitable and enough rubbish bins fitted with non-touching lids for paper hand towels with regular removal and disposal 7) Break times should always be staggered to reduce congestion and contact 8) Hand cleaning facilities or hand sanitiser stations with a minimum 70% alcohol content should be 	80%	20%	90
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											<p>available at the entrance of any room where people eat and should be used by workers when entering and leaving the area</p> <p>9) The workforce should be asked to bring pre-prepared meals and refillable drinking bottles from home</p> <p>10) Workers should sit at least 1,5 metres apart from each other whilst eating and avoid all contact</p> <p>11) Crockery, eating utensils, cups etc. should not be used or shared amongst employees</p> <p>12) Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced</p> <p>13) Tables should be cleaned between each use</p> <p>14) All rubbish should be put straight in the bin fitted with non-touching lids and not left for someone else to clear up</p> <p>15) All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs & door handles</p>			
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	1.6 Ventilation	a) Inadequate/Incorrect Ventilation	1.6.1 Inadequate ventilation may result in the spread on COVID 19 droplets and result in employee contamination		<input checked="" type="checkbox"/>		8	2	2	12	<p>1.6.1 The Construction Manager must ensure that adequate natural ventilation is utilized where reasonably practicable when working in enclosed spaces in order mitigate the transmission of droplets within the enclosed space when using positive pressure fans or air-conditioning systems</p> <p>1.6.2 The Construction Manager must further ensure that where mechanical ventilation is used in confined spaces, that ventilation in the form of extraction is preferably utilised where reasonably practicable</p> <p>1.6.2 The Construction Manager must further ensure that air conditioners are NOT utilized in offices</p>	80%	20%	60
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	1.7 Meetings	a) Regular Meeting Attendance	1.7 Attendance of regular meetings may result in COVID - 19 transmission and infections		<input checked="" type="checkbox"/>		8	5	3	16	1.7.1 The Construction Manager must ensure that their Business Continuity Plan considers the following ie. 1) Reduce frequency of meetings 2) Only necessary meeting participants should attend 3) Attendees should be 1,5 metres apart from each other 4) Rooms should be well ventilated / windows opened to allow fresh air circulation or consider holding meetings in open areas where possible	80%	20%	80
		b) H&S Compliance Training	1.7 H&S compliance training may result in Covid-19 transmission and infections		<input checked="" type="checkbox"/>		8	5	3	16	1.7.1 The Construction Manager must ensure that only mandatory on-site H&S training be undertaken in smaller groups (<8) and adequately spaced in outside areas with the appropriate face masks worn throughout	80%	20%	80
	1.8 Monitoring and enforcement	a) No competent Manager appointed to monitor and enforce COVID - 19 precautionary measures	1.8 No designated person appointed to monitor and enforce government H&S measures may result in transmissions and infections		<input checked="" type="checkbox"/>		16	5	5	26	1.8.1 The Construction Manager must ensure that the responsible appointee enforces Covid-19 policies, procedures and precautionary measures	80%	20%	130

		b) Covid-19 warning, informative and prohibitive posters & signage not displayed around the site	1.8 COVID -19 posters & signage not displayed around the site may result in the risk not being reinforced and overlooked resulting in unsafe behaviour and possible transmission of the virus		<input checked="" type="checkbox"/>		8	2	2	12	1.8.1 The Construction Manager must ensure that only applicable prohibitive, warning and informative signage and posters are placed around the site	60%	40%	30
	1.9 Employee tracing	a) Exposure to an infected person	1.9 Exposure to an infected person could result in the contracting and/ or spreading of the virus		<input checked="" type="checkbox"/>		8	5	5	18	1.9.1 The Construction Manager must ensure that their Business Continuity Plan considers the following ie. 1) That security personnel of H&S Officer include a site register in order to contact trace employees or visitors that were exposed to the infected or suspected party	60%	40%	45
	1.10 Risk adjusted strategy	a) Level 4 to 2 risk adjusted strategy	1.10 Phased 4 risk adjusted strategy not adequately considered resulting in an increase of risk exposure		<input checked="" type="checkbox"/>		16	5	5	26	1.10.1 The Construction Manager must ensure that their Business Continuity Plan considers the following ie. 1) that a phased in staff deployment is considered based on governments risk adjusted strategic approach	60%	40%	65
														1190

PB: ENVIRONMENTAL MANAGEMENT PROGRAMME

ENVIRONMENTAL MANAGEMENT SPECIFICATIONS FOR CONSTRUCTION

1. Scope of Application for the Environmental Specifications

The physical application and 'jurisdiction' of the Environmental Management Programme (EMPr) will incorporate the Contractor 's Camp, designated work areas and access route(s) and immediately surrounding areas.

2. Environmental Principles for the Construction Phase

The following core environmental principles apply, whereby:

- 2.1 Construction is a disruptive activity and all due consideration must be given to minimizing impacts on the environment.
- 2.2 The construction area 'footprint' should be kept to a minimum to reduce the occurrence, duration, magnitude or significance of construction related impacts.
- 2.3 All relevant legislation should be adhered to and all relevant permits and permissions obtained and complied with at all times. Reference must be made to the primary environmental legislation relevant to the Project.
- 2.4 The Contractor should prepare a method statement regarding his/her environmental commitments for the duration of the contract. This method statement should be made known to all staff and measures put in place to enact the commitments.
- 2.5 The Contractor should foster a collaborative and cooperative relationship between all pertinent stakeholders, including Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), Department of Water and Sanitation (DWS), Ward Councillors, and the adjacent communities at a minimum; and promote timely communications with these parties as and when required.

3. Environmental Specifications (ES)

The ES for the Construction Phase have been listed as per the following key construction stages/activities:

- 3.1 Materials, Plant & Facilities
- 3.2 Specific Construction Activities
- 3.3 Emergency Procedure.
- 3.4 Environmental Management During Decommissioning.

3.1 Materials, Plant and Facilities

3.1.1 Materials handling, use and storage

- 3.1.1.2 The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions (including “no go” areas) required to comply with the Specifications of the EMPr.
- 3.1.1.3 The Contractor shall ensure that these delivery drivers are supervised during off-loading by someone with an adequate understanding of the requirements of the EMPr.
- 3.1.1.4 Materials shall be appropriately secured to ensure safe passage between destinations. Loads including, but not limited to sand, stone chip, fine vegetation, refuse, paper and cement, shall have appropriate cover to prevent them spilling from the vehicle during transit. The Contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.
- 3.1.1.5 All lay down areas for manufactured / imported material outside of the construction camp shall be subject to the RE’s approval, which shall not unreasonably be withheld.

3.1.2 Hazardous substances

- 3.1.2.1 Notwithstanding the requirements of the Health & Safety (H&S) Specification, hazardous chemical substances (as defined in the Regulations for Hazardous Chemical Substances, as amended) used during construction shall be stored in appropriate secondary containers. The use of Chlorine products in chlorination chambers is a particular issue in the operation of the chlorination process.
- 3.1.2.2 The relevant Material Safety Data Sheets (MSDS) shall be available on Site. The appropriate environmental preventative measures detailed in the MSDS’s shall be followed in the event of an emergency situation and included in the emergency plan.
- 3.1.2.3 Potentially hazardous substances shall be stored, handled and disposed of in a suitable manner by suitably trained personnel.
- 3.1.2.4 Any substrates contaminated by the spillage of hydrocarbons, cement products or other pollutants must be removed from site and disposed of off at a registered waste disposal site.

3.1.3 Fuel (petrol and diesel) and oil

- 3.1.3.1 The Contractor shall ensure that all fuels and chemicals are handled and stored in a manner so to minimise the risk of spills, leaks or structural failures that could contaminate the environment.

Fuel may be stored on site and the fuel storage area shall be located at the workshop or a fuel storage depot located within the construction camp. However, this fuel must be stored above ground and the total volume of stored fuel may not exceed 80 000 litres. The above ground storage of greater than 80 000 litres, or the below ground storage of any quantity of fuel, is subject to approval from the DEDEAT in terms of current environmental legislation (i.e. a separate application must be lodged with the DEDEAT and must be supported by an environmental basic assessment report or environmental impact assessment report).

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- 3.1.3.2 The Contractor shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are kept firmly shut or in bowsers.
- 3.1.3.3 The tanks / bowsers shall be situated on a smooth impermeable surface (plastic or concrete) base with an earth bund (plastic must have sand on top to prevent damage and perishing). The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 110% of the total capacity of all the storage tanks / bowsers.
- 3.1.3.4 The bunded area shall be covered.
- 3.1.3.5 The Contractor shall prevent unauthorized access into the fuel storage area.
- 3.1.3.6 Generators and fuel supply needed during construction must be placed on trays which rest on clean sand.
- 3.1.3.7 The Contractor shall have on site all the necessary materials and equipment to deal with spills of any of the substances stored on site. Specific attention must be paid to prevent spills from entering and contaminating any of the rivers in the area, any of their tributaries and any other temporary or permanent water bodies.
- 3.1.3.8 The Contractor shall set up a procedure (emergency response plan) to deal with a spillage or pollution event; this should include immediate communication with the Resident Engineer (RE) and Environmental Control Officer (ECO). A number of the Contractor's staff shall be appropriately trained to deal with any spills or pollution threat.
- 3.1.3.9 No smoking shall be allowed within the vicinity of the fuel storage area.
- 3.1.3.10 The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores.
- 3.1.3.11 The Contractor shall ensure that there is adequate and appropriate signage advising of hazards at the fuel stores.
- 3.1.3.12 Gas and fuels shall not be stored in the same storage area.
- 3.1.3.13 Where reasonably practical, plant shall be refueled at the depot, workshop or at a commercial fuel station as applicable. If it is not reasonably practical, then the surface under the refueling area shall be protected against pollution to the reasonable satisfaction of the RE prior to any refueling activities.
- 3.1.3.14 The Contractor shall ensure that there is always a supply of absorbent material (eg. Zorbit) readily available to absorb / breakdown minor hydrocarbon spillage, and where possible be designed to encapsulate such spillage. The quantity of such materials shall be able to handle a minimum of 200 litres of hydrocarbon liquid spill. This material must be approved by the RE prior to any refuelling or maintenance activities.
- 3.1.3.15 Drip trays shall be inspected and emptied daily and serviced when necessary. Drip trays shall be closely monitored during rain events to ensure that they do not overflow.
- 3.1.3.16 The appropriate signage must be erected at the diesel bowser and workshops.
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3.1.4 Ablution facilities

- 3.1.4.1** A sufficient number of chemical toilets shall be provided by the Contractor in the construction camp area and at appropriate locations agreed by the RE. The ratio of toilets to site staff shall not exceed 1:20, and the closest toilet shall never be further than 100m away from the area where work is currently under way. This includes flag people and persons undertaking ad hoc work on site. Further requirements may be required in the H&S Specification or legislation.
- 3.1.4.2** Toilets shall not be located in or close to rivers or water courses or on flood plains.
- 3.1.4.3** Washing, either of the person or of personal effects, and acts of defecation and urination are strictly prohibited other than at the facilities provided.
- 3.1.4.4** All temporary / portable toilets shall be secured to the ground to the satisfaction of the RE to prevent them falling as a result of wind or any other cause.
- 3.1.4.5** All toilets are to be maintained in a clean, sanitary condition. The Contractor shall be responsible for cleaning, maintenance, servicing and emptying the toilets on a regular basis. The Contractor shall supply adequate toilet paper at all toilets.
- 3.1.4.6** The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are properly stored and removed from site.
- 3.1.4.7** Discharge of waste from toilets into the environment, and burial of waste is strictly prohibited.
- 3.1.4.8** Septic tanks may be used only once the soil conditions have been checked and found to be suitable.
- 3.1.4.9** The contractor may make use of a wastewater treatment plant (or sewage package plant) provided such a facility has been authorised and / or registered by the relevant authorities (DEDEAT and DWS) according to the NEMA EIA Regulations (Government Notice No R. 982) and the National Water Act (Act No 36 of 1998).

3.1.5 Living Accommodation (if required)

- 3.1.5.1** Living accommodation for workers on site should comply with minimum standards.
- 3.1.5.2** All temporary structures shall be removed, and the area rehabilitated on completion of the works.
- 3.1.5.3** The Contractor shall designate eating areas for his employees. The Contractor shall provide refuse bins with lids in these areas.
- 3.1.5.4** The source of energy / fuel for use by the workers residing in the area must be clearly specified. There must be no collection of wood outside the designated area.

3.1.6 Solid waste management

- 3.1.6.1** No on-site burying or dumping of any waste materials, vegetation, litter or refuse shall occur.
- 3.1.6.2** The Contractor shall provide sufficient bins with lids on site to store the solid waste

produced on a daily basis. Bins shall not be allowed to become overfull and shall be emptied a minimum of once daily.

3.1.6.3 The waste may be temporarily stored on site in a central waste area that is weather-proof and scavenger-proof, and which the RE has approved.

3.1.6.4 No burning of refuse is permitted.

3.1.6.5 All solid waste shall be disposed off-site at least once weekly at an approved landfill site. The Contractor shall supply the RE/ECO with a certificate of disposal.

3.1.7 Contaminated water

3.1.7.1 The Contractor shall set up a contaminated water management system, which shall include collection facilities to be used to prevent pollution, as well as suitable methods of disposal of contaminated water (also refer to H&S requirements in terms of potential health risk to staff posed by such storage facilities).

3.1.7.2 The Contractor shall notify the RE immediately of any pollution incidents on site.

3.1.7.3 The Contractor shall prevent discharge of any pollutants, such as cement, concrete, lime, chemicals and fuels into any watercourses or stormwater channels.

3.1.7.4 Water that has been contaminated with suspended solids, like soils and silt, may be released into natural watercourses or stormwater channels. However, all suspended solids shall be removed from water before it is discharged by settling out these solids in settling ponds.

3.1.8 Site camp

3.1.8.1 It is not possible at this time to identify the position of the Site / Construction Camp. Therefore, it is the responsibility of the Contractor to submit the proposed position of the Site / Construction Camp to the RE and ECO for approval at least fourteen days before commencement of site establishment. The site must, where possible, be located on previously disturbed ground. The Contractor must also have negotiated the proposed location with the local community and their representatives to prevent any potential conflict in this regard.

3.1.8.2 All site establishment components (as well as equipment) shall be positioned to limit visual intrusion on neighbours and to minimise the size of area disturbed.

3.1.8.3 The Contractor shall provide the RE with a method statement and plan of the site camp showing the layout / positioning of all infrastructure including wash bays, fuel storage areas, materials storage areas, sewage infrastructure and buildings. The Contractor shall maintain a map of the site layout that indicates where the wash bays, fuel storage areas, topsoil sites etc. are located. The RE and ECO must approve this.

3.1.8.4 Where site camps are to be established the feasibility of removing topsoil from the site, before site establishment, shall be investigated. Removed topsoil should then be stockpiled for use in rehabilitation of the site camp. The topsoil stockpiles shall not exceed two (2) metres in height.

3.1.8.5 The site camp shall not be located in an environmentally sensitive area. The site shall be located >100 m from any watercourse / wetland.

3.1.8.6 All water requiring discharge, including wastewater from kitchen and ablution facilities, should be led to soak pits or discharged in a manner approved by the RE. No wastewater shall be discharged into rivers or streams.

3.1.8.7 Site camps and surrounds shall be maintained in a clean, tidy and orderly condition at all times.

3.1.8.8 The Contractor shall restore the site camp to its former condition upon completion of the works. This will include removal of all rubble and foundations, loosening of compacted soils and re-establishing groundcover. Where a homestead has been used as a site camp, the Contractor may be required to renovate the buildings once the works are complete.

3.1.9 Lights

3.1.9.1 The Contractor shall ensure that any lighting installed on the site for his activities does not interfere with road traffic or cause a reasonably avoidable disturbance to the surrounding community or other users of the area. Lighting installed shall be down lighting.

3.1.10 Workshop, equipment maintenance and storage

3.1.10.1 Where practical, all maintenance of equipment and site vehicles shall be performed in the workshop. If it is necessary to do maintenance outside of the workshop area, the Contractor shall obtain the approval of the RE prior to commencing activities.

3.1.10.2 The Contractor shall ensure that in his workshop and other plant maintenance facilities, including those areas where, after obtaining the RE's approval, the Contractor carries out emergency plant maintenance, there is no contamination of the soil or vegetation.

3.1.10.3 The workshop shall have a smooth impermeable concrete floor. The floor shall be bunded and sloped towards an oil trap or sump to contain any spillages of substances (e.g. oil).

3.1.10.4 When servicing equipment, drip trays shall be used to collect the waste oil and other lubricants.

3.1.10.5 Drip trays shall also be provided in construction areas for stationary plant (such as compressors) and for "parked" plant (such as scrapers, loaders, vehicles).

3.1.10.6 All vehicles and equipment shall be kept in good working order and serviced regularly. Leaking equipment shall be repaired immediately or removed from the site. Plant maintenance schedules must be kept on site.

3.1.10.7 The washing of equipment shall be restricted to urgent or preventative maintenance requirements only. All washing shall be undertaken in a wash bay area which must be equipped with a suitable impermeable floor and sump / oil trap. The use of detergents for washing shall be restricted to low phosphate and nitrate containing, low sudsing-type detergents.

3.1.11 Drinking and Construction water

3.1.11.1 Water for drinking and construction purposes should be obtained from local reticulation works, or from an approved source. This must be approved by the local authority and by DWS. Water should not be extracted from nearby dams, rivers and wetlands unless such activities have been approved by the relevant authorities. Construction activities should not be conducted in, or directly adjacent to, rivers, watercourses, wetlands and dams except where specified in the design plan.

3.1.11.2 Water is a scarce resource throughout South Africa and certain parts of the Eastern Cape Province are prone to water shortages during periods of drought. Water, whether drinking or for operational purposes must be used responsibly.

3.2 Specific Construction Activities

3.2.1 Working Areas

3.2.1.1 The construction of the water infrastructure pipelines and associated activities may be conducted only in designated working areas. Limitation of these activities to specific working areas minimises the impact on the surrounding environment and facilitates control of the works. Sites should be divided into working areas and “no-go” areas:

3.2.1.1(a) “Working areas” are those areas required by the Contractor to undertake the works and as approved by the RE. These areas include the area of works, and haul roads between the working site and material sources. If necessary, the working areas may be demarcated during the period. The Contractor and his staff are not permitted to move around outside the designated working areas. The Contractor shall ensure that, insofar as he/she has the authority, no person, machinery, equipment or material enters the “no go” areas at any time.

3.2.1.2 (b) “No-go” areas are those areas outside of working areas. The Contractor shall erect and maintain permanent and / or temporary fences of the type and in the locations directed by the RE. Such fences shall, if so specified, be erected before undertaking designated activities.

Within the overall working area, the ER shall designate specific areas for the following:

3.2.2.1 Site Camp.

3.2.2.2 Stockpiling and storage of construction materials.

3.2.2.3 Stockpiling of topsoil for rehabilitation purposes (stockpiles not higher than 2m).

3.2.2.4 Sites for spoiling of cleared vegetation (alien / invasive species).

3.2.2.5 Sites for other spoil materials.

3.2.3 Protection of Flora and Fauna

3.2.3.1 Natural features, indigenous flora and fauna in the vicinity of the project works should be protected. Damage and or disturbance to be prevented or minimised.

3.2.3.2 No plant species may be removed unless agreed by the RE or unless they are listed as alien invasive species.

3.2.3.3 The minimum amount of vegetation must be removed. Excessive clearing of a site must be avoided. Disturbance outside of the immediate construction area must be avoided.

3.2.3.4 No construction staff may have access to indigenous vegetation outside of the working corridor.

3.2.3.5 The use of indigenous plants as firewood is prohibited.

3.2.3.6 Where protected or Red Data Species are encountered and require removal, the ECO should be consulted and the plant(s) then replanted in a nearby 'safe' area of similar habitat. Permission should be obtained from DEDEAT, Eastern Cape.

3.2.3.7 All fauna (including domestic livestock) within and surrounding the site shall be protected; they shall not be caught, poisoned, trapped, snared or killed.

3.2.3.8 No domestic animals shall be brought onto the site.

3.2.3.9 All construction activities that intersect watercourses must be carefully monitored and the development footprint minimised in both an upstream and downstream direction in order to maintain habitat integrity and minimise habitat fragmentation. Remove the minimum amount of vegetation possible and minimize soil compaction. Appropriate stabilization and erosion protection measures (e.g. bio-engineering techniques) must be used at watercourse crossings.

3.2.3.10 Construction at water course crossings must ensure that no abrupt step forms on the upstream or downstream sides of trenched pipelines relative to the natural channel level, or due to subsequent scour on the upstream or downstream side of the structure.

3.2.3.11 Discontinuity of the riparian corridor due to clearing of any vegetation for construction must be minimised. A comprehensive rehabilitation programme (including waste removal and alien vegetation removal) must be planned and implemented, in addition to adhering to best practice engineering design for the hydrological component.

3.2.4 Sites of Archaeological and or Cultural Interest

3.2.4.1 The Contractor shall take responsible precautions to prevent any person from removing or damaging any fossils, coins, articles of value or antiquity and structures and other remains of archaeological interest discovered on the site.

3.2.4.2 Should any other archaeological or cultural site be located during the construction phase, it should immediately be reported to the National Monuments Council and / or Eastern Cape Provincial Heritage Resources Authority (Contact Person: Mr. Sello Mokhanya). Failure to report a site of archaeological and / or cultural significance is a contravention of the National Heritage Act (Act No 25 of 1999).

3.2.4.3 All construction site staff must be briefed to and immediately report any potential sites which are encountered during the construction of the new pipelines. In the event of finding what appears to be an archaeological site or a cultural and / or historic site or object, work should be terminated until a qualified archaeologist or historian can examine the item or find.

3.2.5 Protection of Natural Features

3.2.5.1 The Contractor shall not deface, paint, damage or mark any natural features (e.g. rock formations) situated in or around the site for survey or other purposes unless agreed beforehand with the RE.

3.2.5.2 Any features affected by the Contractor in contravention of this clause shall be restored / rehabilitated to the satisfaction of the RE.

3.2.5.3 The Contractor shall not permit his employees to make use of any natural water sources (e.g. springs, streams, open water bodies) for the purposes of swimming, personal washing and the washing of machinery or clothes.

3.2.6 Aesthetics

3.2.6.1 The Contractor shall take reasonable measures to ensure that construction activities do not have an unreasonable negative impact on the aesthetics of the area.

3.2.7 Conservation and Stockpiling of Topsoil

3.2.7.1 Topsoil shall be removed from the following areas a maximum of 10 days before construction begins:

3.2.7.1.1 All areas to be excavated;

3.2.7.1.2 Areas to be occupied by roads, including the temporary haulage roads;

3.2.7.1.3 Areas for the storage of fuels;

3.2.7.1.4 Areas to be used for batching / mixing of concrete;

3.2.7.1.5 Areas for stockpiling of construction materials;

3.2.7.1.6 Areas for stockpiling of crushed rock; and

3.2.7.1.7 Areas for spoiling material.

3.2.7.2 Topsoil shall be excavated to a minimum depth of 150 mm or to a maximum depth of 300 mm. Topsoil shall be stockpiled in suitable flat areas where erosion is unlikely. Compaction of these topsoil stockpiles is not permitted. Where topsoil has been stored for longer than 12 months the Contractor shall turn the soils to maintain viability of the seeds and the soil properties.

The topsoil stockpiles shall be clearly demarcated and vehicle access to the area shall be restricted. The topsoil shall not be contaminated with any fuels, oils or other construction waste or material. Topsoil shall not be mixed with any other material (construction rubble, sub-soils etc.) and erosion of the topsoil stockpiles must be prevented.

3.2.8 Erosion Control

- 3.2.8.1** Soil erosion is a particularly sensitive issue in the area because of its potential downstream impact on rivers and estuaries in the area. Erosion shall not be tolerated on the site. Uncontrolled erosion will cause siltation and pollution of the various rivers, and their tributary streams, and will result in loss of valuable topsoil as well as a loss of biodiversity and habitat in rivers, streams and estuaries. The Contractor should take all reasonable measures to prevent soil erosion and protect areas susceptible to erosion. Erosion prevention measures must be implemented to the satisfaction of the RE.
- 3.2.8.2** Areas affected by construction related activities must be monitored regularly for evidence of erosion. Areas particularly susceptible to erosion include: banks of watercourses, areas stripped of topsoil, soil stockpiles and steep slopes (gradients>8%).
- 3.2.8.3** Soil erosion may result from a diversion, a restriction, or an increase in the flow of stormwater or rivers caused by the presence of temporary / permanent works, operations and activities. Where evidence of erosion appears, the construction of contour berms, cut-off drains or planting of grass sods / ground cover may be necessary.
- 3.2.8.4** The Contractor shall take reasonable measures to control the erosive effects of stormwater runoff. A cut-off drain(s) or low berm will be constructed where necessary to lead run-off rain water away from steep, exposed slopes, ensuring that the water does not flow over the slopes and cause erosion. Water from these drain(s) will be disposed of in such a way that the erosive force of the water in the drain(s) is dissipated and erosion does not occur at the drain discharge point(s).
- 3.2.8.5** Where erosion does occur the Contractor shall reinstate such areas and areas damaged by the erosion, at his own cost and to the satisfaction of the RE and ECO. Topsoil that has been washed away shall be replaced.
- 3.2.8.6** After ripping, any access / haul roads must be topsoiled and hydro-seeded with an appropriate hydro-seed mix and the same specifications apply as in the other areas that require hydro-seeding.
- 3.2.8.7** The order for the seeds must be placed timeously to ensure availability at the time required.

3.2.9 Prevention of Pollution

- 3.2.9.1** The Contractor shall ensure that pollution of the soil or water (i.e. surface and ground) does not occur as a result of any activities on site. Pollution can result from the release, accidental or otherwise, of chemicals, oils, fuels, sewage, wastewater containing kitchen waste, detergents, solid waste and litter, etc. Specific measures to be taken to prevent the pollution of the environment include:

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- 3.2.9.1.1 Immediately report and manage any leakage or spillage with appropriate spill contingency equipment and measures.
 - 3.2.9.1.2 No fuels, oils, lubricants and other petrochemical products must be stored within 100 meters of any wetlands, watercourses rivers and dams.
 - 3.2.9.1.3 Fuel lubricants, solvents, paints, and other chemicals must be stored within the contractors' campsite in a facility secured with lock and key. Storage should be on a bunded, impervious site (secondary containment).
 - 3.2.9.1.4 Maintenance of vehicles must only take place in a designated workshop (preferably off site in either of the nearby towns) with a concrete base and drip trays for the collection of waste lubricants. Emergency maintenance vehicles must be equipped with drip trays and absorbent material, such as spillsorb, to collect and contain waste oils.
 - 3.2.9.1.5 No rock, silt, cement, grout, asphalt, petroleum product, timber, vegetation, domestic waste, or any deleterious substance should be placed or allowed to disperse into any stream, river, pond, dam, storm or sanitary sewer, or other watercourse.
 - 3.2.9.1.6 Ensure all construction equipment is free of leaks from oil, fuel or hydraulic fuels, and is cleaned in an area with a suitable controlled runoff.
 - 3.2.9.1.7 Refuelling activities should not be conducted where runoff could carry contaminants into drainage pathways (including stormwater drains / trenches and sewers).
 - 3.2.9.1.8 Washing of vehicles must be undertaken off site if possible. If it is necessary to wash vehicles on site then those activities must be kept to a minimum and must only take place in a designated area on an impervious surface which drains into an oil sump.
 - 3.2.9.1.9 Cleaning out of concrete mixers and trucks must take place on a properly designated site where there is no opportunity for the pollution of water bodies.
 - 3.2.9.1.10 The Principal Contractor shall ensure the availability of the appropriate HAZMAT facilities to address any emergencies as a result of accidental spillage.

3.2.10 Stockpiling / Spoiling of Materials

- 3.2.10.1 The RE and ECO shall approve all stockpiling and spoiling sites and confirm the end-use or rehabilitation plans for these sites.
- 3.2.10.2 Spoil sites are to be identified ahead of time and in negotiation with local authorities where necessary.
- 3.2.10.3 The stockpiles should be located within demarcated construction sites. Material stockpiled should be done so in such a way as to minimise the spread of materials and the impact on the natural vegetation. The Contractor should ensure that no materials 'creep' into "no-go" areas.
- 3.2.10.4 Establish sediment controls around stock piles where there is a risk of erosion to water courses and wetlands.
- 3.2.10.5 Treat stockpiles that have weed infestations and implement dust control measures to minimise dust generation from stockpiles.

3.2.10.6 No spoiling of material should take place below the 1:100 year floodline of any river, stream, wetland or water course.

3.2.10.7 The Contractor, upon completion of the project shall reinstate areas used for stockpiling to their former states.

3.2.11 Asphalt, Bitumen and Paving

3.2.11.1 No asphalt and bitumen products shall be used in the construction of access roads in the Project area and proposed access will be gravelled. No bitumen or asphalt products may be delivered to the Project site, or stored on site.

3.2.12 Cement and Concrete Batching

3.2.12.1 Cement products are highly toxic to many organisms and particularly aquatic organisms. Permitted location of the batch plant (including the location of cement stores, sand and aggregate stockpiles) should be indicated by the RE. The concrete / cement batching plant shall be kept neat and clean at all times.

3.2.12.2 Permitted batch plant should not be located closer than 100 m from any water course or wetland and not below the 1:100 year floodline of any water course or wetland.

3.2.12.3 Permitted batch plant shall be located on a smooth impermeable surface (plastic or concrete). The area shall be bunded and sloped towards a sump to contain any spillages of substances.

3.2.12.4 No batching activities shall occur directly on the ground. All wastewater resulting from batching of concrete shall be disposed of via the wastewater management system and shall not be discharged into the environment.

3.2.12.5 Used cement bags shall be stored in weather-proof containers to prevent wind-blown cement dust and water contamination. Used bags shall be disposed of on a regular basis via the solid waste management system, and shall not be used for any other purpose. unused cement bags shall be stored so as not to be affected by rain or runoff events. In this regard, closed steel containers should be used for the storage of cement powder and any additives.

3.2.12.6 The Contractor shall ensure that sand, aggregate, cement or additives used during the mixing process are contained and covered to prevent contamination of watercourses, the surrounding vegetation and natural rock through wind or water dispersion.

3.2.12.7 All runoff from the batching plant shall be strictly controlled, and cement-contaminated water shall be collected, stored and disposed of off-site, at a location approved by the RE.

3.2.12.8 Contaminated water storage areas shall not be allowed to overflow and appropriate protection from rain and flooding shall be implemented.

3.2.12.9 On completion of the plaster or concrete pour section all visible remains of excess concrete shall be physically removed and disposed of. Washing the remains into the ground is not acceptable. All excess aggregate shall also be removed and disposed of in an approved landfill site.

3.2.13 Dust Control

3.2.13.1 Dust is often generated by construction and maintenance activities and is regarded as a nuisance when it reduces visibility, soils private property, and reduces the palatability of grazing grasses. It may also retard plant growth and is aesthetically displeasing.

3.2.13.2 The Contractor shall be responsible for the control of dust arising from his/her operations and activities. Control measures could include regular spraying of working areas or bare areas with water and the limitation of vehicle movement during high wind conditions.

However, the application of water to dust generating areas must be at a rate that will not result in soil erosion or runoff.

3.2.14 Noise Control

3.2.14.1 The Contractor shall limit noise levels (e.g. install and maintain silencers on machinery). The Contractor's attention is drawn to the applicable regulations framed under the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983) and more specifically the Environmental and Noise Induced Hearing Loss Regulations. Other requirements noted in the H&S specification may be required. Copies of all monitoring reports are to be copied to the ECO.

3.2.14.2 All activities with high noise level should be restricted to daylight hours in the areas close to villages and homesteads. The contractor must discuss the timing of noise generating activities with the staff of schools and churches located close to the areas where construction activities will take place.

Appropriate times for noisy construction activities should be agreed to by both parties.

3.2.14.3 The contractor shall inform village residents of any high noise events such as blasting.

3.2.14.5 Contractor's camps should be located away from residential/homesteads, grazing and informal agricultural areas.

3.2.14.6 Crushing plants (if required) should be located as far as practical from homesteads, churches, schools and social facilities.

3.2.15 Vehicles and Access Roads

3.2.15.1 Site vehicles should be permitted access only within the demarcated construction sites or on existing roads, and to the extent that is required to complete their specific tasks. Vehicles are not permitted on re-vegetated areas.

3.2.15.2 Site vehicle traffic should be limited to specific access roads to prevent unnecessary damage to the natural environment.

3.2.15.3 On site, the Contractor shall control the movement of all vehicles and plant including that of his/her suppliers so that they remain on designated routes, are distributed so as not to cause an undue concentration of traffic and so that all relevant laws are complied with. In addition, such vehicles and plant shall be routed and operated so as to minimise disruption to regular users of the routes not on the site. On gravel or earth roads on site and within 500m of the site, the vehicles of the Contractor and his suppliers shall not exceed a speed of 60 km/hr.

3.2.16 Traffic Control and Temporary Deviations

- 3.2.16.1 Increased traffic, especially heavy vehicle traffic, has the potential to draw complaints from nearby residents, homesteads, livestock owners and other road users. The potential impact of vehicles on livestock can be a particular issue for community members in rural areas. The Contractor is expected to address any complaints received.
- 3.2.16.2 The Contractor shall comply with all the applicable local, regional and national by-laws with regard to road safety and transport. He shall instruct his/her drivers and plant operators that vehicles will be expected to comply with all road ordinances, such as speed limits, roadworthiness, load securing and covering.
- 3.2.16.3 Where sections of the road are closed for construction, barricades shall be constructed to prevent unauthorised access at all times. Suitable signage should be erected informing drivers of the road closure and warning of the possible dangers involved in trespassing within the closed areas.
- 3.2.16.4 Where the road is to be closed for extended periods of time, e.g. for the purpose of blasting, nearby communities and motorists must be given suitable prior warning through signposting, media notices etc. The safety of motorists should remain paramount at all times.
- 3.2.16.5 The Contractor shall keep the local Traffic Control department (Traffic Police) aware of road closure and other activities that will affect traffic flow.
- 3.2.16.6 Traffic shall be deviated along the existing roads and tracks as identified in the project design report (i.e. those routes specified by the project engineer).
- 3.2.16.7 Temporary vehicular deviations should be located so as to cause minimal disruption to surrounding residents and their livestock, and minimal disturbance to flora, fauna and the surrounding landscape, and minimal risk of erosion. The deviations shall not impede normal pedestrian or vehicular access to adjoining areas.
- 3.2.16.8 Stop – go’s may also be used along those sections of roads where currently existing deviation roads and tracks do not exist.

3.2.17 Fire Prevention and Control

- 3.2.17.1 The Contractor shall take all the necessary precautions to ensure that fires are not started as a consequence of his/her activities on site. The Contractor must include fire hazards in his emergency plans. The Contractor, subcontractors and all employees are expected to be conscious of fire risks. The Contractor shall hold fire prevention talks with his staff to create an awareness of the risks of fire. Regular reminders to his staff on this issue are required.
- 3.2.17.2 Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include the workshop and fuel storage areas and any areas where the vegetation or other material is such as to make liable the rapid spread of an initial flame. In terms of the Atmospheric Pollution Prevention Act (No. 45 of 1965), burning is not permitted as a disposal method.
- 3.2.17.3 No fires may be made other than for the purpose of cooking, and all fires must be extinguished with water once they have served their purpose. Cooking fires shall be contained in a fire drum, in an area approved by the RE.

3.2.17.4 The Contractor shall appoint a Fire Officer who shall be responsible for ensuring immediate and appropriate actions are taken in the event of a fire, and he/she shall ensure that staff are aware of the procedure to be followed. The Contractor shall forward the name of the Fire Officer to the RE for his approval. The Contractor shall ensure that there is adequate fire-fighting equipment (i.e. fire extinguishers and fire beaters) on site and in all major working areas.

3.2.17.5 The Contractor shall be liable for any expenses incurred by any organisations called to assist with fighting fires and for costs involved in rehabilitation of burnt areas / property / persons, should the fire be the result of the Contractor's activities on site.

3.2.17.6 Removed plant material shall not be dumped across the fence-line or along the fence-line onto private property or on to any property that indicates it is in use by rural community members (meeting areas, agriculture areas, stock dipping areas, informal recreation areas). If an abutting land owner requests dumping along the fence line the Client must be indemnified.

3.2.18 Blasting (if required)

3.2.18.1 All blasting is to be done in terms of the Minerals and Petroleum Resources Development Act (Act 28 of 2002) and the Mine Health and Safety Act (Act 29 of 1996).

3.2.18.2 The Contractor shall notify nearby residents and communities and erect appropriate signage, warning of the event, 14 days in advance of any blasting. The Contractor is responsible for any accidental damages to persons or property resulting from blasting.

3.2.18.3 Prior to blasting, the Contractor shall notify the relevant occupants of surrounding land and address any concerns. The Contractor shall notify emergency services, in writing, a minimum of 24 hours prior to the commencement of any blasting activities on site.

3.2.18.4 crack survey shall be undertaken of all existing structures within a distance of 500m of the blasting site specified by the RE. The survey shall be undertaken a) prior to any blasting activities in order to establish the baseline conditions, and b) following blasting or on receiving any complaints from the community. Structural damage to houses or other buildings, which has resulted from blasting, must be repaired at the expense of the Contractor.

3.2.18.5 The Contractor shall prevent damage to special features and the general environment, which includes the removal of fly-rock. Damage caused by blasting / drilling shall be repaired to the satisfaction of the RE.

3.2.19 Watercourse crossings, Bridges and Culverts

3.2.19.1 The Contractor shall minimise the extent of any damage to any flood plains and watercourses to that necessary to complete the works, and shall not pollute the river systems as a result of construction activities.

3.2.19.2 The Contractor shall not divert, dam or modify any watercourse or stream without the approval of the RE and DWS.

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- 3.2.19.3 Avoid operating machinery in water bodies. Excavations for the purposes of trenching pipelines or for a bridge or large culvert should not be performed in flowing water. Where construction activities have to be performed in flowing water, the water should be diverted around the work site with a cofferdam or stream diversion. Any diversion of a stream or modification of the flow regime requires a separate investigation and an approval from both the Project Manager and the Department of Water and Sanitation. If a coffer dam or stream diversion is necessary, it must be in place for as short of time as possible. Cofferdams are to be fail-safe engineered and if at all possible should not be constructed from sand bags. Use sheet piling or wood in conjunction with gabion baskets/reno mattresses. Where relevant, 25% of the 'normal flow' of the affected stream or river must be maintained downstream of the coffer dam in the 'low flow channel' using a pipe in the coffer dam, in order to preserve aquatic migration routes. When coffer dams are removed, stream flow should be re-directed into the original channel.
- 3.2.19.4 Watercourse crossing construction and any bridge construction or culvert installation that might be required should, where possible, be planned to take place during periods when stream flow is low (i.e., outside the normal season of rain).
- 3.2.19.5 The Contractor should plan and execute construction of all water crossings in such a manner as to minimise the time that excavations need to be left open.
- 3.2.19.6 The Contractor must clearly mark the footprint of the water crossings construction activity in full to provide a clear definition of the work area. Any work space that falls outside the footprint of the water crossings must also be clearly marked.
- 3.2.19.7 The ECO must inspect the marked watercourse construction area to identify any endangered plant or animal species within the construction footprint and any particularly sensitive feature (habitat corridors, stream bed structure, substrate levels above and below the crossing). Should any be identified, the ECO must arrange for the removal/ mitigation of these. The Contractor must allow sufficient time under his construction programme for such removal or mitigation.
- 3.2.19.8 Avoid channel changes and protect the embankments of rivers, streams and watercourses. When coffer dams are removed, stream flow should be re-directed into the original channel.
- 3.2.19.9 All rubble from any demolished structures including coffer dams must be removed from river and stream beds, wetland areas, and any other perennial or ephemeral watercourse. Such rubble must be disposed of according to the waste management system. No rubble may be left in a watercourse.
- 3.2.19.10 construction materials shall be stockpiled on a flood plain.**
- 3.2.19.11 All concrete must be allowed to cure fully before coming into contact with water in a watercourse.

3.2.20 Water Abstraction

3.2.20.1 Water for construction purpose may only be abstracted from rivers or other small streams in the extended area once the required permits have been obtained from the Department of Water and Sanitation.

3.2.20.2 During water abstraction the Contractor shall take all reasonable measures to limit sedimentation of downstream watercourses as a result of his activities, and he shall ensure that the flow in the river is never reduced below 50% of ambient. Any temporary sump shall be removed from the river or stream as soon as practically possible.

3.2.21 Earthworks

3.2.21.1 All earthworks shall be undertaken in such a manner so as to minimise the extent of any impacts caused by such activities. No equipment associated with earthworks shall be allowed outside of the site and defined access routes unless expressly permitted by the RE.

3.2.22 Site Rehabilitation

3.2.22.1 The Contractor shall be responsible for complete rehabilitation of the site, including spoil sites, access roads, haul routes, site camp, stockpile, ablution facilities and storage areas.

3.2.22.2 The Contractor shall undertake full rehabilitation at no extra cost to the Client.

3.2.22.3 The Contractor should implement progressive rehabilitation, once works are complete in a particular area, rehabilitation / re-vegetation should begin. This would provide the opportunity to assess whether or not the methods employed are suitable and successful and would help prevent erosion in impacted areas.

3.2.22.4 Where re-vegetation of an area is not successful the Contractor will replant these areas, at no additional cost to the Client.

3.2.22.5 The Contractor shall provide the ECO and RE with a comprehensive plan for rehabilitation of the entire site. This plan must meet the approval of the ECO and RE. The following points must be taken into account when drawing up the Rehabilitation Plan:

3.2.22.5(a) The Plan should be flexible – where measures are found to be inefficient, the plan shall be modified, at no additional cost to the Client.

3.2.22.5(b) The Contractor shall be responsible for successful rehabilitation and re-vegetation of the site, for a minimum period of 12 months after construction is complete.

3.2.22.5(c) The Plan shall include the eradication of young alien invasive plant species that may have become established in impacted areas and in rehabilitated areas during the construction period.

3.2.22.5(d) The growth of alien invasive plant species shall be monitored during the 12 month period following construction.

- 3.2.22.5(e) The Plan shall include grass seed mixes suitable for both summer and winter.
- 3.2.22.5(f) The Plan shall include suitable fertilizers and application rates.
- 3.2.22.5(g) Successful re-vegetation means ≥ 80 % of the seeded area is covered with grass / groundcover.
- 3.2.22.5(h) Where there is insufficient topsoil to cover an area to specified depth, the Contractor shall import suitable topsoil at no cost to the Client.
- 3.2.22.5(i) Consideration should be given to using established seedlings of indigenous grasses such as Themeda triandra and Cenchrus ciliaris to at least augment the use of alien grasses in re-vegetation of bare areas. On eroded soil chopped bush (not exotic/alien bush) should be spread over bare surfaces, the soil should be re-seeded and the veld rested.

3.2.23 Exotic Vegetation

- 3.2.23.1 Exotic invasive vegetation shall be removed from any working areas and the site camp(s). These vegetation species shall also be eradicated when they begin to establish themselves in disturbed areas (disturbance of the natural vegetation will encourage the establishment of invasive species). In order to discourage the spread of exotic species, soil should not be moved from one part of the site to another without the consent of the ECO.
- 3.2.23.2 The ECO shall assist in the identification and eradication of exotic plant species. Methods of removal / eradication may involve hoeing by hand or by the controlled application of herbicides.

3.2.24 Community Relations

- 3.2.24.1 The Contractor shall erect and maintain information boards in the position, quantity, design and dimensions specified. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the RE.
- 3.2.24.2 The Contractor shall identify and liaise with the existing community structures in any area in which work is being undertaken.
- 3.2.24.3 The Contractor shall keep a “Complaints Register” on Site. The Register shall contain all contact details of the person who made the complaint, information regarding the complaint itself and measures taken to address the complaint.

3.2.25 Social Disruption

- 3.2.25.1 Where construction activities require the removal of fences of whatever description from around private or communal land, the occupants must be warned at least three days in advance. These fences / boundary markers shall be reinstated as soon as construction is complete and they must be re-instated to the level and specifications of the original installation.
- 3.2.25.2 are should be taken not to damage private or community property. No access to surrounding business properties, residences/homesteads farms or other such areas is permitted without permission of the resident/owner and on agreement with the RE.

3.2.25.3 The Contractor shall take all practical measures to reduce disruption to users of the areas adjacent to the pipeline construction site.

3.2.26 Existing Services and Infrastructure

3.2.26.1 The Contractor shall ensure that any existing services (road, pipelines, power lines and telephone services) are not disrupted or damaged, unless required by the contract and with the permission of the RE.

3.2.27 Protection of the Public

3.2.27.1 The Contractor shall be responsible for the protection of the public, and public property, from any dangers associated with the construction of the pipelines and its associated activities. The Contractor is also responsible for the safe and easy passage of pedestrians, stock and traffic in areas affected by project activities.

3.2.27.2 Any excavation material, spoil sites and other obstructions or excavations shall be suitably barricaded and / or demarcated as per the H&S Specification or legislation.

3.2.28 Staff Safety and Education

3.2.28.1 Environmental issues shall be addressed during induction prior to the commencement of work on the site. Further training that is focused on key environmental hazards identified at any stage of the project may be required throughout the project.

3.2.28.2 The environmental aspects of the emergency plan will be included during all training.

3.2.28.3 The Contractor must maintain a suitable First Aid Kit at the site office and will have a list of the emergency service contact numbers readily available.

3.2.28.4 Telephone numbers of emergency services, including the local firefighting service and HAZMAT, shall be posted conspicuously in the Contractor's office near the telephone.

3.2.28.5 No authorised firearms are permitted on Site.

3.3 Emergency Procedures

The Contractor's procedures for the following emergencies shall include:

3.3.1 Fire

3.3.1.1 The Contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. The Contractor shall ensure that his employees are aware of the procedure to be followed in the event of a fire.

3.3.2 Accidental Leaks and Spillages

3.3.2.1 The Contractor shall ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the RE and the relevant authorities.

3.3.2.2 The Contractor shall ensure that the necessary HAZMAT materials and equipment for dealing with spills and leaks is available on site at all times.

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- 3.3.2.3 Treatment and remediation of the spill areas shall be undertaken to the reasonable satisfaction of the RE.
 - 3.3.2.4 In the event of a hydrocarbon spill, the source of the spillage shall be isolated, and the spillage contained. The area shall be cordoned off and secured. The Contractor shall ensure that there is always a supply of absorbent material readily available to absorb or break down the spillage. The quantity of such materials shall be able to handle a minimum of 200 litres of hydrocarbon liquid spill. Near aquatic environments equipment (booms, curtains) shall be available to encapsulate minor hydrocarbon spillage.
 - 3.3.2.5 In the event of a fire or accidental leak / spillage, the Contractor shall notify the RE as soon as possible, but at least within 48 hours of the incident being noticed.
 - 3.3.2.6 The telephone numbers for the closest Hazmat offices should be prominently displayed since oil and diesel spillages on construction and road building sites are fairly common. The clean-up procedure is critical to prevent contamination.

3.4 Environmental Management During Decommissioning

- 3.4.1 There are no plans to decommission the project. However, Environmental Management associated with the decommissioning of this project would normally ensure that the following items are addressed at closure and during the defects liability period:
 - 3.4.1.1 All cleared sites are rehabilitated with indigenous grass material with a cover of at least 80%.
 - 3.4.1.2 All visible alien plants are removed from disturbed sites.
 - 3.4.1.3 All recyclable rubble and waste, for example, scrap metal, bottles, cans and plastics are collected and disposed of through a registered recycling company.
 - 3.4.1.4 All non-recyclable rubble and solid waste be collected and disposed of at a registered waste disposal facility.
 - 3.4.1.5 Provision has been made for stormwater control to prevent erosion from taking place post construction.
 - 3.4.1.6 All borrowpits and quarries shall conform to the designed closure specifications including drainage, slope stability, top-soiling and grass planting.

C3.7 VARIATIONS AND ADDITIONS TO SABS 1200 STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS

Note: The below lists are not deemed exhaustive, and other specifications listed or referenced in the document may be applicable as required.

STANDARD SPECIFICATIONS

SANS 1200 A	GENERAL
SANS 1200 AB	ENGINEER'S OFFICE
SANS 1200 C	SITE CLEARANCE
SANS 1200 D	EARTHWORKS
SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)
SANS 1200 G	CONCRETE
SANS 1200 L	MEDIUM PRESSURE PIPELINES
SANS 1200 LE	STORMWATER DRAINAGE

PSA: GENERAL
(Applicable to SABS 1200 A – 1986)

PSA 3: MATERIALS

Add the following new sub-clause:

PSA 3.3: ORDERING OF MATERIALS

“The quantities set out in the Schedule of Quantities have been determined from calculations based on data available at the time and should therefore be considered to be approximate quantities only. The liability shall rest entirely and solely with the Contractor to determine before ordering, the required types and quantities of the various materials required for the completion of the works in accordance with the Specifications and Drawings issued to the Contractor for construction purposes.

Any reliance placed by the Contractor on the estimated quantities stated in the Schedule of Quantities issued for tendering purposes, or measurements made by the Contractor from Drawings issued for tendering purposes only, shall be entirely at the Contractor’s risk and the Employer accepts no liability whatsoever in respect of materials ordered by the Contractor for construction purposes.”

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

The Contractor shall, by producing copies of written orders or written enquires for supplies, prove to the satisfaction of the Engineer that any delay occasioned by non-availability of materials has been caused by the inability of suppliers to supply and not by his own lack of timely ordering or lack of exhaustive enquiry for supplies, before any extensions of the contract time will be allowed due to such delays.

PSA 4: PLANT

PSA 4.2: CONTRACTOR’S OFFICES, STORES AND SERVICES

Add the following:

“No housing is available for the Contractor's employees, and the Contractor shall, at his own cost, make arrangements with Local Authorities regarding the housing of his employees.”

Add the following new sub-clauses:

PSA 4.3 PLANT FOR CONSTRUCTION PURPOSES

The Contractor’s plant for construction purposes shall be of modern design, adaptable for the purpose for which it is required, in sound working condition, and ample in capacity for carrying out the Works expeditiously.

Should the Engineer be of the opinion that the plant in use is in any way unsuitable for carrying out the Works in a manner or at a rate commensurate with the requirements of the Contract, they shall have the right to call on the Contractor at any time during the progress of the Works to provide additional or improved plant and tools as may be necessary to meet these requirements.

PSA 5: CONSTRUCTION

Add the following new sub-clauses:

PSA 5.9: DAYWORKS:

PSA 5.9.1: SCOPE

“Day works is to be understood to be work and/or material, the provision of which cannot, in terms of the Contract be measured in the normal items of the Schedule of Quantities and has to be measured in terms of time and cost.”

PSA 5.10: SITE MEETINGS

The contractor will be required to attend site meetings, normally held once a month, to discuss general progress, quality of work, problems, claims, payments, etc.

PSA 7: TESTING

PSA 7.2: APPROVED LABORATORIES

Add the following:

“The independent laboratory used by the Contractor, if approved by the Engineer, shall be deemed to be an approved laboratory.”

**PSA 8: MEASUREMENT AND PAYMENT PSA 8.1: MEASUREMENT
PSA 8.1.2: PRELIMINARY AND GENERAL ITEM OR SECTION**

PSA 8.1.2.3: CONTRACTOR TO PRICE ALL ITEMS

Add the following:

“Where the Contractor inserts ‘NIL’, “included”, or omits to insert a rate in the ‘Rate’ column, this shall be interpreted as a rate or price of zero.”

PSA 8.3.5 Provision of Materials Guarantee Unit: Sum

This shall include the cost of acquiring and maintaining an on-demand materials guarantee for the construction duration.

PSA 8.4: SCHEDULED TIME-RELATED ITEMS

Add the following new payment items:

PSA 8.4.6: COMPLIANCE WITH OHS ACT (1993, AS AMENDED), THE CONSTRUCTION REGULATIONS (2014) AND THE PARTICULAR SAFETY SPECIFICATION:

Unit: Sum

“The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer’s Health and Safety Specification as applicable to this contract. (See Particular Specification C3.6)

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and Employer’s Health and Safety Specification.”

PSA 8.4.7: COMPLIANCE WITH ENVIRONMENTAL MANAGEMENT PLAN

Unit: Sum

“The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Environmental Management Plan as well as the EMPr as applicable to this contract. (See Particular Specification C3.5.2 and EMPr (Annexure D)

Should the Contractor fail to comply with the provisions of the Environmental Management Plan, he will be liable for penalties as provided in the Environmental Management Specification.”

PSA 8.4.8: SUPERVISION OF SUBCONTRACTOR Unit: Sum

The rates shall cover the cost of supervising the Subcontractor including overheads, charges and profit for the duration of construction.

PSA 8.7: DAYWORK

Add the following:

“Payment for work on a daywork basis will only be made if:

- a) It is agreed by the Engineer to be outside the specified scope of a measured item in the Contract.
- b) It is carried out in response to a written instruction by the Engineer.
- c) The records of plant, labour and material are submitted daily for the consideration of the Engineer and duly approved.

The rates submitted for daywork are to be approved by the engineer prior to any work being undertaken.

PSA 8.8: TEMPORARY WORKS

PSA 8.8.2: DEALING WITH TRAFFIC (OR ACCOMMODATION OF TRAFFIC) Unit: Sum

Add the following:

“The rate shall cover all costs pertaining to the provision, erection, moving, re-erection and maintenance of all temporary barricades, road signs, lights, flagmen, etc. as required for the guarding and protection of the Works as well as all other costs to accommodate the traffic during construction

All signs provided by the Contractor shall be in accordance with the latest issue of the South African signs manual.”

Add new payment item:

PSA 8.8.7: CONTRACTOR TO PROVIDE “CONSTRUCTION RECORD” INFORMATION

Unit: Sum

The tendered rate for this item to include for the surveying of the pipeline route, including pipe invert levels as laid, the position of all valve chambers, reservoir inlet, outlet and bulk meter chambers, reservoir positions and perimeter fencing by an independent Surveyor. The information supplied to the Engineer is to be in the form coordinated Autocad drawings and Model Maker “tot” survey files.

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

PSAB 3: MATERIALS

PSAB 3.1: NAMEBOARDS

Add the following to sub-clause:

The Contractor shall supply and install and include in his rates for the standard applicable infrastructure grant name board provided in the drawings. 2 No. name boards. The board shall be erected prior to any execution of work. The name board shall also comply with the EPWP requirements.

The boards shall be placed in a position designated by the Engineer for the full duration of the contract.

PSAB 3.2: OFFICE BUILDING

Replace sub-clause with the following:

“The Contractor shall provide and maintain a single office (one room) with a floor area of at least 12 m² and a ceiling height of at least 2,5 m. The office shall be lockable and waterproof. Ablution facilities for the sole use of the Engineer and his site staff shall also be provided.

The office furnishings shall include:

- a) Three office desks each with lockable drawers
- b) Three high swivel chairs
- c) Meeting facilities with a table and chairs to seat at least 12-15 people (for purposes of site meetings).
- d) Acceptable lighting
- e) Internet Facilities (uncapped)
- f) Engineer's laptop
- g) Air-conditioning in Engineers office
- h) A facility to store / hang drawings
- i) Printing facilities
- j) Drawing rack
- k) 5 No. shade cloth covered parking
- l) Engineer's vehicle

On completion of the Works, ownership of the building and the furnishings shall revert to the Contractor who shall remove them from site.

PSAB 4: PLANT

PSAB 4.1: TELEPHONE

Delete this clause in its entirety and replace with the following:

“Telephone facilities are required by the Engineer. A cellphone with a prepaid sim card to the value of R5000 per month will be required for the Engineer's Representative.”

PSC : SITE CLEARANCE
(Applicable to SABS 1200 C – 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 sites shall be appropriate for the nature of the material that is to be disposed of and shall be within the free-haul distance unless confirmed and approved by the Engineer, Local Authority and/or Environmental Officer for the project. 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.

Payment for the clearing, loading, transport, dumping fees and any other requirement or costs incurred shall be included in the rates submitted for site clearance.

PSC 8.2 SCHEDULED ITEMS

PSC 8: MEASUREMENT AND PAYMENT

PSC 8.2.5: TAKE DOWN EXISTING FENCES

Unit: km

Add the following:

“The unit rate tendered for removal and re-erection of fences and gates shall cover the cost of reinstatement of the fence to its original condition.

PSD: EARTHWORKS
(Applicable to SABS 1200 D – 1988)

PSD 5: CONSTRUCTION

PSD 5.2: METHODS AND PROCEDURES

PSD 5.2.3: PLACING AND COMPACTION

Add the following new sub-clauses:

PSD 5.2.3.3: EROSION CONTROL BERMS

“Where instructed by the Engineer, earth berms shall be constructed to the dimensions shown on the drawings or to the detail instructed by the Engineer. The berms shall comprise excess fill material from the trench, shall be hauled by wheelbarrow, placed and shall be hand stamped in layers not exceeding 150mm. The berms shall be slightly overfilled before being shaped to the detail shown on the drawings. The material shall wherever possible be sourced within the freehaul distance of 0.5 km. After completion, the Engineer may instruct the Contractor to construct un-grouted, handpicked and packed stone pitching along the upstream edge of the berm.”

PSD 5.2.3.4: SANDBAG PROTECTION TO PIPE TRENCH

“Where instructed by the Engineer, 25kg sandbags made from woven polypropylene shall be filled with selected fill material as specified in SABS 1200 LB and placed in a stretcher bond pattern around the pipe. The bags shall be firmly packed and hand stamped into place and shall be keyed a minimum of 500mm into the side wall of the trench. Where specified, the selected fill material shall first be brought to optimum moisture and then stabilized by the addition of 1% cement.”

PSD 8: MEASUREMENT AND PAYMENT PSD 8.3: SCHEDULED ITEMS

PSD 8.3.1.2: REMOVE TOPSOIL TO NOMINAL DEPTH 150mm (OR OTHER STATED), STOCKPILE AND MAINTAIN Unit: m²

Add the following:

“The top 150mm of material in the reservoir and chamber sites shall, unless otherwise indicated by the Engineer, be deemed to be topsoil and shall be stripped and stockpiled separately along the route of the pipeline. The stockpile shall not be more than 1,5m in height and shall not be covered by other material or be used for an access road.

The soil on top of which the top soil will be reinstated shall be scarified to a depth of 50mm.”

Add the following new payment items:

PSD 8.3.13: EROSION CONTROL BERMS Unit: m³

“The rate shall include for all costs to source the material, remove any oversized material, load, haul within the freehaul, offload, spread, overfill, compact and trim to the finished dimensions shown on the drawings.”

PSD 8.3.14: SANDBAG PROTECTION TO PIPE TRENCH Unit: No.

“The rate shall include for all costs to supply the 25kg bags, select material, fill bags and place in restricted areas and hand stamp.”

PSD 8.3.15: EXTRA-OVER SANDBAG PROTECTION FOR STABILIZATION Unit: No.

“The rates shall include all extra costs to ensure that the material is at optimum and to supply and mix cement at 1%.”

PSD 8.3.2 BULK EXCAVATION

Replace the contents of this clause with the following:

Separate scheduled items will be provided for each type of excavation material (in accordance with the selection criteria specified in PSD 3.3.1), together with its method of excavation and intended destination / use. The classification criteria specified in PSD 3.2.2.1 is intended to assist with making the distinction between ‘weak’ mudstone / siltstone from ‘intermediate’ mudstone / siltstone material and between ‘intermediate’ and ‘hard’ material (unweathered sandstone and dolerite). The distinction between ‘completely-weathered soft soil material’ and ‘weak mudstone’ is fairly obvious, but shall none-the-less be as agreed with the Engineer’s Representative. In all cases, the rates tendered shall make allowance for liaising and agreeing with the Engineer’s Representative as to which selection category material being excavated falls into, how it is to be excavated and where such material is to be placed.

Except for measurement of overhaul to the designated spoil site, there are no ‘extra-over’ excavation items.

The tendered rates for excavation shall cover all costs associated with excavating and spoiling or filling and any conditioning, gridding and compaction required to achieve the required compaction density. The tendered rates for overhaul shall cover all costs associated with selecting, loading and transporting the spoil material to the designated spoil dump and depositing the material in a way there is no mixing of the different selection types.

PSD 8.3.6 OVERHAUL

Replace the contents of this Clause with the following:

All movement of cut to fill material shall be regarded as freehaul. In addition, all movement of topsoil, and any other material within the boundary of the site and less than 0.5 km from the site boundary shall be regarded as freehaul.

Overhaul will only be paid where the transportation of material is beyond 0.5 km of the boundary of the site. Overhaul shall not apply to imported material from commercial sources.

The overhaul distance shall be measured from the point of exit of the site perimeter to the agreed centre of the designated spoil area.

PSDB: EARTHWORKS (PIPE TRENCHES)
(Applicable to SABS 1200 DB – 1989)

PSDB 3: MATERIALS

PSDB 3.5: BACKFILL MATERIAL

Add the following new sub-clause

PSDB 3.5(C): STABILISED BACKFILL

“Any pipe laid down on a slopes steeper than 1: 6 is to be backfilled with 4% cement stabilisation by mass at 5 metre intervals in lengths of 2 metres.

PSDB 5: CONSTRUCTION

PSDB 5.1: PRECAUTIONS

Add the following new sub-clause:

PSDB 5.1.5: BARRICADING, WATCHING AND LIGHTING

“While the responsibility for the efficient barricading, lightning and watching of all trenches, excavations and stocks of material shall rest upon the contractor, he shall make every effort to comply with requirements of the local traffic Authority.

The cost of all chevron taping, supports, steel plate bridges, temporary road warning signs, drums, safety lamps, shall be deemed to be included in the Contractors price rates for excavation.”

PSDB 5.4: EXCAVATION

Add the following:

“The total length of any section of open or partially open trench in advance of the backfilling (i.e. to ground level) shall not exceed 1000 m unless otherwise instructed by the Engineer.”

PSDB 5.6: BACKFILLING

PSDB 5.6.3: DISPOSAL OF SOFT EXCAVATION MATERIAL

Add the following:

“Surplus material shall be spread evenly and neatly alongside the trench excavation, unless otherwise directed by the Engineer.”

PSDB 5.6.6: COMPLETION OF BACKFILLING

Add the following:

“The Contractor shall bear all costs associated with the remedy of defects in trenches caused by lengthy exposure as instructed by the Engineer.”

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 5.2.5.1 (Freehaul) of SABS 1200 D as amended and as relevant, shall apply to freehaul.

No additional payment will be made for excavating and backfilling jointing slots as the cost of that work will be deemed to be included in the rates for trenching.

PSDB 8.3.1: SITE CLEARANCE AND (IF SPECIFIED) REMOVAL OF TOPSOIL

PSDB 8.3.1.C: REMOVE TOPSOIL

Unit: m²

Add the following:

“The top 150mm of material in the pipe trench shall, unless otherwise indicated by the Engineer, be deemed to be topsoil and shall be stripped and stockpiled separately along the route of the pipeline. The stockpile shall not be more than 1,5m in height and shall not be covered by other material or be used for an access road.

The soil on top of which the top soil will be reinstated shall be scarified to a depth of 50mm.”

Add the following new payment item

PSDB 8.3.3.1(D) STABILISED BACKFILL (4% CEMENT)

Unit: m³

“The rate shall include the cost of material, delivery to site and the mixing in of the stabiliser as per clause PSDB 3.5 (c)

PSDB 8.3.3.4 OVERHAUL

Replace the contents of this Clause with the following:

All movement of cut to fill material shall be regarded as freehaul. In addition, all movement of topsoil, and any other material within the boundary of the site and less than 0.5 km from the site boundary shall be regarded as freehaul.

Overhaul will only be paid where the transportation of material is beyond 0.5 km of the boundary of the site.

Overhaul shall not apply to imported material from commercial sources. The overhaul distance shall be measured from the point of exit of the site perimeter to the agreed centre of the designated spoil area

PSG: CONCRETE FOR WATER RETAINING STRUCTURES
(Applicable to SABS 1200 G – 1982)

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 where specified under floor slabs shall be 250 micrometre polythene sheet complying with SANS 952, Type D.

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/m ³	110	DIN 53420
Compression Stress at compression strains of	kPa	175	DIN 53577
10%	kPa	210	DIN 53577
25%	kPa	340	DIN 53577
50%			
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

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

PSG 5.5.1 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 ± 25 mm.

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 prestressed 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.

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.

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 32°C, or is likely to rise to above 32°C 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, 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

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 in 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 AASHTO density (100% for sand), trimmed and then treated with an approved weedkiller, 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 Lateral Load (kN)	Ultimate
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."

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.

For testing, water sorptivity, oxygen permeability and chlorine conductivity, cores of 68 mm diameter shall be extracted from the structure when the concrete reaches the age of at least 28 days and tested for the durability criteria set out in PSG 7.3.7. The frequency of the testing

at the start of the contract shall be such that there is at least one test (consisting of 2 cores) per discrete concrete element, or per 15 m³ poured (whichever is the lesser), until such time that the Engineer is satisfied that the specified criteria are consistently achievable.

Hereafter testing shall be limited to one test per discrete concrete element or maximum concrete pour of 40 m³ (whichever is the lesser), or as directed by the Engineer. Depending on access requirements, the frequency and locations of the tests may be changed to suit site requirements as directed by the Engineer. Note that for decks and walls, the cores shall be taken on the exposed faces of the concrete i.e. the soffit and side wall face, taking care not to cut the reinforcing bars. Where the cores do contain pieces of reinforcing steel, they shall not be used for the tests, particularly in the chloride conductivity test or where bleeding cavities may have formed.

The cores shall be extracted through the cover concrete from the constructed concrete element and a slice (25 mm thick) shall then be cut from the outer surface of this core such that the slice is representative of the middle layer of the cover concrete, i.e. the middle layer being a 25 mm thick slice of concrete, 5 mm from the exposed outer surface extending in towards the reinforcement, and tested. The positions at which the cores shall be extracted shall be as indicated by the Engineer.

Filling of the holes left by the drilling of the cores shall be the responsibility of the contractor and shall be carried out using an approved proprietary non-shrink repair mortar so as to restore structural integrity and durability of the structural element tested. The cost of drilling and filling of the holes shall be included in the rate make-up of pay items for durability testing

PSG 7.2.7 Depth Of Concrete Cover

The procedure for testing for depth of reinforcement from concrete surface shall be in accordance with the manufacturer’s requirements for the relevant electromagnetic cover meter. The number of readings taken to each 1 m² to be tested shall be such that an accurate average cover can be determined for the tested area.

PSG 7.2.8 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 Parameters Acceptance Ranges

When tested in accordance with the test procedures described below for each potential durability parameter, the concrete shall meet the limits given in the tables below:

PSG 7.3.6.1 Water Sorptivity And Oxygen Permeability

Table PSG 7.3.6.1 Water Sorptivity and Oxygen Permeability		
Acceptance Category	Test No. / Description / Unit	
	Water Sorptivity (mm/h)	Oxygen Permeability (log scale)
Concrete made, cured and tested in laboratory	6	> 10.0
Full acceptance of in-situ cast concrete	< 8	> 9.15
Conditional acceptance of in-situ cast concrete (with remedial measures)	8 - 15	8.75 – 9.15
Rejection	> 15	< 8.75

PSG 7.3.6.2 Chloride Conductivity

Concrete	100% PC		10% CSF		30% FA		50% GGBS	
Curing Period	28d	90d	28d	90d	28d	90d	28d	90d
Full wet cured	1.25	1.00	0.50	0.45	1.50	0.40	1.25	1.00
Moist cured (3 – 7d)	1.75	1.60	0.60	0.55	2.25	1.25	2.25	2.00

PSG 7.3.6.3 Concrete Cover

Test Description	Specified Cover (mm)	Acceptance Range	
		Minimum	Maximum
Concrete cover to reinforcement	20 – 30	As specified	As specified + 5 mm
	30 - 80	As specified	As specified + 10 mm

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 7.3.10 Determination Of Reduced Payment

Payments for all durability concrete shall be based on the test results. The durability parameters are calculated according to Tables PSG 7.3.10.1, PSG 7.3.10.2 and PSG 7.3.10.3 below.

Table PSG 7.3.10.1 Water Sorptivity

TEST	Coastal (≤ 5 km from coast and up to 15 km up river valleys/estuaries)		Inland (> 1 km from coast)	
Water sorptivity (mm/h)	TEST RESULT	% PAYMENT	TEST RESULT	% PAYMENT
	< 8	100%	< 8	100%
	$8 < 12$	90%	$\geq 8 < 12$	90%
	$12 < 15$	85%	$\geq 12 < 15$	85%
	≥ 15	0%	≥ 15	0%

Table PSG 7.3.10.2 Oxygen Permeability

TEST	Coastal (≤ 5 km from coast and up to 15 km up river valleys/estuaries)		Inland (> 1 km from coast)	
Oxygen Permeability Index (log scale)	TEST RESULT	% PAYMENT	TEST RESULT	% PAYMENT
	> 9.15	100%	> 9.5	100%
	$> 9.0 \leq 9.15$	90%	$>9.25 \leq 9.5$	90%
	$> 8.75 \leq 9.0$	85%	$>9.0 \leq 9.25$	85%
	≤ 8.75	0%	≤ 9.0	0%

Table PSG 7.3.10.3 Concrete Cover

TEST	Coastal (≤ 5 km from coast and up to 15 km up river valleys/estuaries)		Inland (> 1 km from coast)	
	TEST RESULT	% PAYMENT	TEST RESULT	% PAYMENT

30 mm specified	$\geq 30 \leq 40$	100 %	$\geq 30 \leq 40$	100 %
	$\geq 25 < 30$	40 %	$\geq 20 < 30$	40 %
	$< 25 \text{ or } > 40$	0 %	$< 20 \text{ or } > 40$	0 %
40 mm specified	$\geq 40 \leq 50$	100 %	$\geq 40 \leq 50$	100 %
	$\geq 35 < 40$	40 %	$\geq 30 < 40$	40 %
	$< 35 \text{ or } > 50$	0 %	$< 30 \text{ or } > 50$	0 %
50 mm specified	$\geq 50 \leq 60$	100 %	$\geq 50 \leq 60$	100 %
	$\geq 45 < 50$	40 %	$\geq 40 < 50$	40 %
	$< 45 \text{ or } > 60$	0 %	$< 40 \text{ or } > 60$	0 %
60 mm specified	$\geq 60 \leq 70$	100 %	$\geq 60 \leq 70$	100 %
	$\geq 55 < 60$	40 %	$\geq 50 < 60$	40 %
	$< 55 \text{ or } > 70$	0 %	$< 50 \text{ or } > 70$	0 %
65 mm specified	$\geq 65 \leq 75$	100 %	$\geq 65 \leq 75$	100 %
	$\geq 60 < 65$	40 %	$\geq 55 < 65$	40 %
	$< 60 \text{ or } > 75$	0 %	$< 55 \text{ or } > 75$	0 %
75 mm specified	$\geq 75 \leq 85$	100 %	$\geq 75 \leq 85$	100 %
	$\geq 70 < 75$	40 %	$\geq 65 < 75$	40 %
	$< 70 \text{ or } > 85$	0 %	$< 65 \text{ or } > 85$	0 %
80 mm specified	$\geq 80 \leq 90$	100 %	$\geq 80 \leq 90$	100 %
	$\geq 75 < 80$	40 %	$\geq 70 < 80$	40 %
	$< 75 \text{ or } > 90$	0 %	$< 70 > 90$	0 %

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 where specified.

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:

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: m³

No-fines concrete will be measured by volume.

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 is 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: m²

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.

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 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: m²

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 3T50/75 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 Polyurethane 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.

PSL: MEDIUM PRESSURE PIPELINE
(Applicable to SABS 1200 L – 1983)

PSL 3: MATERIALS

PSL 3.7: OTHER TYPES OF PIPES

Add the following new sub-clause:

PSL 3.7.3: GALVANISED RESTRAINED STEEL PIPES

The piping system shall have a spigot and socketed and fittings that shall comply with SANS 966-2. All pipes shall be supplied in 6m lengths with the length tolerance as per SANS 966-2

PSL 7.3: STANDARD HYDRAULIC PIPE TEST PSL 7.3.1: HYDRAULIC TESTING
Add the following sub-clauses:

PSL 7.3.1.6: GENERAL REQUIREMENTS

“The Contractor shall make his own arrangements for the procurement of water and for filling of sections of the pipelines for hydraulic testing purposes.

The Contractor shall test the pipeline in short sections of pipeline so as to allow timeous backfilling of the trenches. On the completion of a pipeline, a test of the full length will be required as part of the commissioning of pipeline, and as the acceptance test.

The cost of all hydraulic tests is for the Contractor’s cost.”

PSL 7.3.1.7: PIPE SECTION ACCEPTANCE TESTING

“The test pressure varies with the position of the measuring gauge. The measuring gauge should always be positioned at the lowest elevation of the section being tested with the test pressure not exceeding the pipe class at any point along the pipeline.”

PSL 7.3.1.8: FILLING OF PIPELINES FOR TESTING

“Prior to the commencement of filling, the Contractor shall ensure that all scour valves, air valve isolating valves and in-line isolating valves are in the open position, man all temporarily blanked off ends are firmly anchored against thrust blocks.

The Contractor’s proposed methodology for filling shall be submitted to the Engineer for approval. No filling shall commence until the Engineer’s approval to do so has been obtained.

The filling process shall be carried out slowly and scour valves are to be continuously monitored to ensure no erosion or damage to property occurs. Scours shall be closed once they begin to discharge water. Blank flanges/end caps shall be installed on the downstream flange after the water in the pipeline has been left to stand for 24 hours. Once the flange has been installed, scour valves are to be re- opened for the duration of the hydraulic test. The Contractor is to ensure that air is vented out of the pipeline as the filling proceeds. It is essential that all air is expelled.

No separate payment will be made for the Contractor’s attendance during filling, the Contractor will be deemed to have included for such in his rates.

scour valve shall be opened without the prior approval of the Engineer.”

PSL 8: MEASUREMENT AND PAYMENT

Add the following new payment items:

PSL 8.2.16: PIPE MARKERS Unit: No.

“The Contractor shall allow an all-inclusive rate for excavation and installing pipe markers complete as per supplied drawings.”

PSL 8.2.17: VALVE MARKERS Unit: No.

“The Contractor shall allow an all-inclusive rate for excavation and installing valve markers complete as per supplied drawings.”

PSL 8.2.18: TIE INTO EXISITING PIPELINE/CHAMBERS ALL INCLUSIVE Unit: Sum

“The rate tendered for this item is to include for the at the existing valve chamber, all fittings, couplings and jointing materials, etc. necessary for the connection from the existing main. Demolishing of the concrete anchor block is also to be included.”

C3.8 GENERIC LABOUR-INTENSIVE SPECIFICATION

The Generic Labour-intensive specification below is the same as SANS 1921- 5, Construction and management requirement for works contracts- Part 5: Earthworks activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

C3.8.1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- a) trenches having a depth of less than 1.5 metres
- b) stormwater drainage
- c) low-volume roads and sidewalks

Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

C3.8.2 Hand excavateable material

Hand excavateable material is material:

a) Granular materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) Cohesive materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note:

- 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.
- 2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

C3.8.3 Trench excavation

All hand excavateable material in trenches having a depth of less than 1.5 metres shall be excavated by hand.

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

- a) to 90% Proctor density;
- b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or
- c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

C3.8.4 Excavation

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation

by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

C3.8.5 Clearing and grubbing

Grass and small bushes shall be cleared by hand.

C3.8.6 Shaping

All shaping shall be undertaken by hand.

C3.8.7 Loading

All loading shall be done by hand, regardless of the method of haulage.

C3.8.8 Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

C3.8.9 Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilized for haulage

C3.8.1 Spreading

All material shall be spread by hand.

C3.8.1 Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

C3.8.12 Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

C3.8.13 Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m. Grout shall be mixed and placed by hand.

C3.8.14 Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper hand hold on them.



**O.R. TAMBO
DISTRICT MUNICIPALITY**

VOLUME 1

CONTRACT

C4. SITE INFORMATION

C4 SITE INFORMATION

C4.1 CONDITIONS ON SITE

The Contractor will not have exclusive use of the site.

The geotechnical reports for the investigations undertaken for the project sites will be emailed to all contractors.