

# O. R. TAMBO DISTRICT MUNICIPALITY



**O.R. TAMBO  
DISTRICT MUNICIPALITY**

**CONTRACT NO.: MIS 316 080 B**

**DESCRIPTION: DUMASI REGIONAL WATER SUPPLY PHASE 1 – CONSTRUCTION OF  
DUMASI 5ML RESERVOIR**

**CONTRACT 2**

**NOVEMBER 2022**

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 x 6043  
MTHATHA  
5100

Tel. No. (047) 501 6425

NAME OF BIDDER: \_\_\_\_\_

CSD SUPPLIER NUMBER: \_\_\_\_\_

SAR TAX COMPLIANCE STATUS PIN: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

TENDER AMOUNT: \_\_\_\_\_

### **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 check-list 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.9	Contract Data (Part 2)					
PD.4	Bill of Quantities					

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		T1.2	Tender Data	Pink	TP.7
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		T.2.2	Returnable Schedules	Yellow	RD.3
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		C1.2	Contract Data	Yellow	C.6
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		<b>Part 2: Pricing Data</b>			
		C2.1	Pricing Instructions	Yellow	PD.1
		C2.2	Bill of Quantities	Yellow	PD.4
		<b>Part 3: Scope of Work</b>			
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		C3.3	Procurement	Blue	SW.5
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**VOLUME 1**  
**TENDER**  
**TENDERING PROCEDURES**

## T1.1 TENDER NOTICE AND INVITATION TO TENDER



**Tender №: MIS 316 080 B**

### **DUMASI REGIONAL WATER SUPPLY PHASE 1 – CONSTRUCTION OF DUMASI 5ML RESERVOIR REINFORCED CONCRETE RESERVOIR**

Tenderers are hereby invited from experienced and suitably qualified service providers for the construction of the Dumasi Regional Bulk Water Scheme Phase 1, located in the O. R. Tambo District Municipality of Eastern Cape.

<b>Contract Number</b>	<b>Name and Description</b>	<b>CIDB Grading</b>	<b>Contract period</b>
MIS 316 080 B	DUMASI Regional Water Supply Phase 1: Construction of 5ML Reinforced Concrete Reservoir. Contract 2	7CE	12 months

A compulsory site visit and clarification meeting will be conducted by the Employers Agent and the Employer on **the 24th of November 2022, meeting at 10h00 at the Nyandeni Local Municipality Offices, Ngqeleni, then proceed to site.**

**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](http://www.etenders.gov.za)) alternatively on the O. R. Tambo website ([www.ortambodm.gov.za](http://www.ortambodm.gov.za)).

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 **12h00 Thursday, 15 December 2022.**

**It must be expressly understood that the Municipality does not accept any 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).**

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 – Compliance with Bid Rules
- Stage 2 – Functionality
- Stage 3 - Price and BBBEE Points

Item	Weight
<b>Stage 2 of Evaluation-Functionality</b>	<b>100</b>
• Company Experience with respect to similar projects	30
• Qualifications & Experience of key staff assigned to the contract	30
• Preliminary Quality Assurance Plan	20
• Availability of key plant and equipment	10
• Preliminary Programme	10
<b>Stage 3 of Evaluation- Price &amp; B-BBEE</b>	<b>100</b>
• 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.

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**Technical enquiries:** Mr N. Noto 047 501 6400 / 6425, or email [nkosiyabon@ortambodm.gov.za](mailto:nkosiyabon@ortambodm.gov.za). All **Supply Chain Management enquiries** may be directed to Mr. S. Hopa, telephone number 047 501 6557 or email: [sakhiwoh@ortambodm.org.za](mailto: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>B-BBEE status level of contributor</b>	<b>Number of points</b>
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**

<b>YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF O. R. TAMBO DISTRICT MUNICIPALITY</b>			
<b>BID NUMBER:</b>	MIS 316 080 B	<b>CLOSING DATE:</b>	15 DECEMBER 2022
<b>DESCRIPTION:</b>	Dumasi Regional Bulk Water Scheme Phase 1: Construction of 5ML Concrete Reservoir. Contract 2.		
<b>CLOSING</b>	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**

<b>NAME OF BIDDER</b>			
<b>POSTAL ADDRESS</b>			
<b>STREET ADDRESS</b>			
<b>TELEPHONE NUMBER</b>	<b>CODE</b>		<b>NUMBER</b>
<b>CELLPHONE NUMBER</b>			
<b>FACSIMILE NUMBER</b>	<b>CODE</b>		<b>NUMBER</b>
<b>E-MAIL ADDRESS</b>			
<b>VAT REGISTRATION NUMBER</b>			
<b>TAX COMPLIANCE STATUS</b>	<b>TCS PIN:</b>		<b>CSD No:</b>
<b>B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>B-BBEE STATUS LEVEL SWORN AFFIDAVIT</b>	<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]**

<b>ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <b>[IF YES ENCLOSE PROOF]</b>	<b>ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <b>[IF YES, ANSWER PART B:3 ]</b>
<b>TOTAL NUMBER OF ITEMS OFFERED</b>		<b>TOTAL BID PRICE</b>	R
<b>SIGNATURE OF BIDDER</b>	..... <b>DATE</b>		

<b>CAPACITY UNDER WHICH THIS BID IS SIGNED</b>			
<b>BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:</b>		<b>TECHNICAL INFORMATION MAY BE DIRECTED TO:</b>	
<b>DEPARTMENT</b>	SCM DEPARTMENT	<b>CONTACT PERSON</b>	MR. N NOTO
<b>CONTACT PERSON</b>	MR. SAKHIWO HOPA	<b>TELEPHONE NUMBER</b>	047 501 6425
<b>TELEPHONE NUMBER</b>	047 501 6557	<b>FACSIMILE NUMBER</b>	N/A
<b>FACSIMILE NUMBER</b>	N/A	<b>E-MAIL ADDRESS</b>	<a href="mailto:nkosiyabon@ortambodm.gov.za">nkosiyabon@ortambodm.gov.za</a>
<b>E-MAIL ADDRESS</b>	<a href="mailto:sakhiwoh@ortambodm.gov.za">sakhiwoh@ortambodm.gov.za</a>		

**PART B  
TERMS AND CONDITIONS FOR BIDDING**

<b>1. BID SUBMISSION:</b>	
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.	
1.2. <b>ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED--(NOT TO BE RE-TYPED).</b>	
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.	
<b>2. TAX COMPLIANCE REQUIREMENTS</b>	
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 <a href="http://WWW.SARS.GOV.ZA">WWW.SARS.GOV.ZA</a> .	
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.	
<b>3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>	
3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	<input type="checkbox"/> YES <input type="checkbox"/> NO
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.	

**NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS 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	
<b>F.1</b>	<b>General</b>
F.1.1	The Client is: The Municipal Manager O. R. Tambo District Municipality Private Bag x 6043 Mthatha, 5100
F.1.2	The Tender documents issued by the Client comprise: <b>TENDER</b> <b>T1: Tendering Procedures</b> T1.1 Tender Notice and invitation to tender T1.2 Tender Data  <b>T2: Returnable Documents</b> T2.1 List of Returnable Documents T2.2 Returnable Documents for tender evaluation purposes T2.3 Returnable Documents to be incorporated into the contract
	<b>Contract</b> <b>Part 1: Agreements and Contract data</b> 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  <b>Part 2: Pricing Data</b> C2.1 Pricing Instructions C2.2 Bill of Quantities  <b>Part 3: Scope of Work</b> 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  <b>Part 4: Site Information</b> C4.1 Site Information  <b>Part 5: Drawings</b>

F1.3	<b>Interpretation</b> 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	<b>Communication:</b> Communication with all stakeholders shall be through the O. R. Tambo Municipality's District Engineer. Communication's shall be in the English language. The Employer shall not take any responsibility for non-receipt of communications from or by a tenderer	
	The Employer is O. R. Tambo District Municipality Private Bag x 6043 Mthatha, 5100 Contact person: <u>Mr. Nkosiyabo Noto</u> Tel: 047 501 6400 / 6425	The employer's agent is: Ziinzame Consulting Engineers (Pty) Ltd. 25 Falcon Street, Southernwood, Mthatha (047) 531 0269 Email: admin@ziinzame.co.za Contact person: <u>Mr. M Ndabankulu</u>
F.1.5	<b>The employer's right to accept or reject any tender offer</b>	
F.1.5.1	<b>Reject or accept</b> 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	<b>Procurement procedures</b>	
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	<b>Tenderer's obligations</b>	
F.2.1	<b>Eligibility criteria and requirements</b> 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 7CE class 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 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;  (b) the Tenderer or any of its directors / shareholders are 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 (ii) failed to perform on any previous contract and has been given a written notice to this effect;  (c) The Tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer; (d) 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; (e) 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.  (f) Only those Tenderers who are registered with the CIDB in a Contractor grading designation equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a 7CE class of construction work, are eligible to submit tenders.	

	<p>Joint ventures are eligible to submit tenders provided that:</p> <ul style="list-style-type: none"> <li>(i) every member of the joint venture is registered with the CIDB;</li> <li>(ii) the lead partner has a Contractor grading designation in the 7CE class of construction work;</li> <li>(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;</li> <li>(iv) 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.</li> <li>(v) All Sub Contractors shall not be a subsidiary of the main Contractor, nor shall they share the same Directors.</li> </ul>	
F.2.2	<p><b>Cost of tendering</b>  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><b>Check documents</b>  Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.</p>	
F.2.4	<p><b>Confidentiality and copyright</b>  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><b>Reference documents</b>  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><b>Acknowledge Addenda</b>  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 <b>compulsory clarification meeting</b> are:</p>	
	Date: Thursday, 24 December 2022	<b>Location:</b> Nyandeni Local Municipality Offices Ngqeleni Town
	<b>Starting time:</b> 10h00	
F.2.8	<p><b>Seek clarification</b>  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.</p>	
F2.10	<p><b>Pricing the tender</b></p>	
F.2.10.1	<p>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.</p>	
F.2.10.2	<p>Show VAT payable by the employer separately as an addition to the tendered total of the prices.</p>	
F.2.10.3	<p>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.</p>	
F.2.10.4	<p>State the rates and prices in South African Rand</p>	
F2.11	<p><b>Alterations to documents</b>  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.</p>	

F.2.12	<p><b>Alternative tender offers</b>  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.</p>
F.2.13.3	Tender offers shall be submitted as an original only.
F.2.13.5	<p><b>Delivery of Tender</b>  The employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:  Location of tender box: <b>O. R. Tambo District Municipality</b>  Physical address: <b>Ground Floor, Nelson Mandela Drive, Myezo Park, Mthatha</b>  Identification details: <b>Project №: MIS 316 080 B</b>  <b>Dumasi Regional Water Scheme Phase 1: 5MI Reservoir</b></p>
F.2.14	<p><b>Information and data to be completed in all respects</b>  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.</p>
F.2.15	<p><b>Closing time</b>  The closing times for submission of <b>Tenders are 12h00 on Thursday, 15 December 2022</b></p>
F.2.15	Telephonic, telegraphic, telex, facsimile or e-mailed Bid offers will <b>not</b> be accepted.
F.2.16	<p><b>Tender offer validity</b>  The Tender offer validity period is 90 Days as stated in the tender data.</p>
F.2.17	<p><b>Clarification of tender offer after submission</b>  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.</p>
F.2.18	<p><b>Provide other material</b>  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.</p>
F2.20	<p><b>Submit securities, bonds, policies</b>  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.</p>
F.2.23	<p><b>The tenderer is required to submit with his tender:</b>  All certificates as listed under Part T2.2 – Returnable Documents.</p>
F.3	<b>The employer's undertakings</b>
F.3.1	<b>Respond to requests from the tenderer</b>
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	<p><b>Issue Addenda</b>  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.</p>
F.3.4	<b>Opening of tender submissions</b>
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	<b>Non-disclosure</b> 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	<b>Grounds for rejection and disqualification</b> 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	<b>Arithmetical errors, omissions and discrepancies</b>
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	<b>Clarification of a tender offer</b> Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.
F3.11	<b>Evaluation of tender offers</b> <i>Replace the contents of the entire sub-clause with the following:</i>  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 <b>BUT</b> the prerequisite will be to obtain at least <b>60 points</b> for quality (functionality), which will be explained in Stage 1 below.  Nevertheless, O. R. Tambo District Municipality retains the right to accept any bid.  <b>C. First stage in evaluation: Compliance with Bid Rules and other Requirements</b>  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.

	<ul style="list-style-type: none"> <li>• Certified company registration documents and ID of members</li> <li>• Form C: Compulsory Enterprise Questionnaire</li> <li>• Form D: Certificate of Authority for Signature</li> <li>• Form E: Amendments, Qualifications and Alternatives</li> <li>• Form H: Certificate of Good Standing</li> <li>• Form I: Relevant experience</li> <li>• Form J: Details of key staff and CVs</li> <li>• Form M: Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2017</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Addenda issued during the bid period, if any.</li> <li>• The pricing schedule</li> </ul> <p>Failure to supply the required information will compromise the bid</p> <p><b>D. Next Stage in Evaluation: Quality / Functionality; Price &amp; BBBEE Status Level</b></p> <p>The next state in the evaluation process will consist of two stages, as follows:</p>																											
	<p><b>STAGE 1: FUNCTIONALITY/QUALITY EVALUATION</b></p> <table border="1" data-bbox="296 857 1485 1167"> <thead> <tr> <th>ITEM</th> <th>WEIGHT</th> </tr> </thead> <tbody> <tr> <td>Functionality (see detailed criteria below)</td> <td>100</td> </tr> <tr> <td>• Company Experience with respect to similar projects</td> <td>30</td> </tr> <tr> <td>• Qualifications &amp; Experience of key staff assigned to the contract</td> <td>30</td> </tr> <tr> <td>• Preliminary Quality Assurance Plan</td> <td>20</td> </tr> <tr> <td>• Health and Safety Plan</td> <td>10</td> </tr> <tr> <td>• Preliminary Programme</td> <td>10</td> </tr> </tbody> </table> <p>Only bidders who score <b>60 points or more</b> on stage 1 will be evaluated further and therefore eligible for award.</p> <p>The maximum score for functionality shall be 100, distributed as follows:</p>	ITEM	WEIGHT	Functionality (see detailed criteria below)	100	• Company Experience with respect to similar projects	30	• Qualifications & Experience of key staff assigned to the contract	30	• Preliminary Quality Assurance Plan	20	• Health and Safety Plan	10	• Preliminary Programme	10													
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	<b>B1.2</b>	<b>Qualifications &amp; 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 = ND Civil Engineering (minimum), Site Agent = N6 (minimum) and Concrete Foreman = Grade12/N4 (minimum) plus Certificate in Concrete Works</b>	<b>30</b>
		Favourable previous experience in the Civil Engineering Field with a minimum of 5 years; <b>Contracts Manager</b> = 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; <b>Site Agent</b> = 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; <b>Concrete Foreman</b> = 8 points, 3-4 years = 6 points & 1-2 years = 4 points.	8
		Contractor failed to provide evidence of qualification and experience.	0
	<b>B1.3</b>	<b>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</b>	<b>20</b>
		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 or Practical and Coherent approaches. The approach provides details ways to improve the project outcomes.	20
		Contractor failed to provide a Quality Assurance Plan.	<b>0</b>
	<b>B1.4</b>	<b>Availability of key machinery and equipment</b> (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 signed confirmation letter from a reputable service provider together with proof of ownership). For compaction equipment Portfolio of Evidence (POE) should include the submission of Tax Invoices, Serial Numbers and Photographic Evidence.	<b>10</b>
		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
<b>B1.5</b>	<b>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.</b>	<b>10</b>	
	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	

	<p><b>STAGE 3: EVALUATION FOR PRICE AND PREFERENCE (80/20)</b>  The procedure for Stage 3 of evaluation of responsive tenders is <b>Method 2</b></p> <p>a) <b>PRICE:</b> .....80</p> <p>b) <b>B-BBEE STATUS LEVEL OF CONTRIBUTION:</b> .....20</p> <p><b>Points Awarded for Price (Ps)</b></p> <p>A total of 80 points will be awarded to the Tenderer with the lowest balanced price. The <b>other tenders will be awarded points on the ratio to bench mark price as follows</b></p>																				
	$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$ <p>Where</p> <p>Ps = Points scored for price of bid under consideration  Pt = Rand value of bid under consideration  Pmin = Rand value of lowest acceptable bid</p> <p><b>a) Points awarded for B-BBEE Status Level of Contribution</b></p> <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" data-bbox="316 945 1302 1267"> <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><b>Non-compliant Contributor</b></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	<b>Non-compliant Contributor</b>	0
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F.3.13	<b>Acceptance of tender offer</b>																				
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> <p>a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,</p> <p>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,</p> <p>c) has the legal capacity to enter into the contract,</p> <p>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,</p> <p>e) complies with the legal requirements, if any, stated in the tender data, and</p> <p>f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.</p>																				
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><b>Notice to unsuccessful tenderers</b></p> <p>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: <a href="http://www.ortambodm.gov.za">www.ortambodm.gov.za</a> by listing the successful tender.</p>																				
F.3.15	<b>Prepare contract documents</b>																				

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	<p>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"><li>a) addenda issued during the tender period,</li><li>b) inclusion of some of the returnable documents,</li><li>c) other revisions agreed between the employer and the successful tenderer, and</li><li>d) the schedule of deviations attached to the form of offer and acceptance, if any.</li></ul>
F.3.16	<p><b>Issue final contract</b></p> <p>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**

**RETURNABLE DOCUMENTS**

## T2.1 LIST OF RETURNABLE DOCUMENTS FORMS TO BE COMPLETED BY THE TENDERER

Form		Page
<b>T2.2 Returnable Documents</b>		
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
<b>C1.1 Form of Offer</b>		C.2
<b>C2.2 Bill of Quantities</b>		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
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- 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.

**Signature(s)**

\_\_\_\_\_

**Name(s)**

\_\_\_\_\_

**For the Tenderer**

\_\_\_\_\_  
(Name and address of organisation)

**Name and  
signature of  
witness**

\_\_\_\_\_

**Date** \_\_\_\_\_

### A. COMPULSORY SITE INSPECTION CERTIFICATE

A compulsory site inspection will be held at Nyandeni Local Municipality Offices, Ngqeleni Town on 24 November 2022 at 10h00.

Special Requirements: Tenderers are to meet the Engineer at the O. R. Tambo District Municipality Offices 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)*

<b>NAME OF REPRESENTATIVE</b>	
<b>ON BEHALF OF TENDERER</b>	
<b>ADDRESS</b>	
<b>TELEPHONE NUMBER</b>	
<b>SIGNATURE (FOR TENDERER)</b>	

---

### FOR OFFICIAL USE ONLY

<b>I CONFIRM THAT THE TENDERER WAS PRESENT AT THE COMPULSORY BRIEFING SESSION</b>	<b>OFFICIAL DATE STAMP</b>
---	----------------------------

**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)			
(iel.)			
(email)			
(fax)			
(name)			
(iel.)			
(email)			
(fax)			
(name)			
(iel.)			
(email)			
(fax)			
(name)			
(iel.)			
(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)			
(iel.)			
(email)			
(fax)			
(name)			
(iel.)			
(email)			
(fax)			
(name)			
(iel.)			
(email)			
(fax)			
(name)			
(iel.)			
(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 value: ..... Employer: .....

Contract duration: ..... Engineer: .....

Reference's Position in Contract: .....

Your assessment of the Contractor's performance in the following areas: (please tick <b>one</b> of the blocks on the right hand side)	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)**

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

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 this data correctly describes me, my qualifications and my experience.

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

.....  
DATE





**C. KEY PERSONNEL AND SCHEDULE (continued)**

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

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 this data correctly describes me, my qualifications and my experience.

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

.....  
DATE

**C. KEY PERSONNEL AND SCHEDULE (continued)**

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

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 this data correctly describes me, my qualifications and my experience.

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

.....  
 DATE

**C. KEY PERSONNEL AND SCHEDULE (continued)**

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

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 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.

<b>MATERIAL</b>	<b>TYPE OR TRADE NAME</b>	<b>SOURCE</b>
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 **xx%** 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 Dumasi 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

---

RD.17

*Contractor*

*Witness 1*

*Witness 2*

*Employer*

*Witness 1*

*Witness 2*

**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.

<b>Page or Item</b>	<b>Alteration Proposed by Tenderer</b>

.....  
**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

..... 20....., Mr./Ms. ....

acting in the capacity of ....., was authorised to sign all documents in connection with this tender for Contract No. MIS 316 080 B 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 316 080 B 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.*



**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: MIS 316 080 B 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
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: MIS 316 080 B 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 OHS 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 OHS 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 No. 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 bidders 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](http://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](http://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  $\leq$  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:

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

- 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:

$$P = 8 \left( - \frac{P - P_i}{P_i} \right)$$

**80/20**

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

- Partnership/Joint Venture / Consortium
  - One person business/sole propriety
  - Close corporation
  - Company
  - (Pty) Limited
- [TICK APPLICABLE BOX]

7.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

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

7.6 COMPANY CLASSIFICATION

- Manufacturer
  - Supplier
  - Professional service provider
  - Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

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.

WITNESSES	
1.	.....
2.	.....

.....	
SIGNATURE(S) OF BIDDERS(S)	
DATE:	.....
ADDRESS	.....
	.....
	.....



### **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:

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

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

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

\* Insert separate page if necessary

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

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

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

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?  <b>(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).</b>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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 <input type="checkbox"/>	No <input type="checkbox"/>
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 <input type="checkbox"/>	No <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		

Item	Question	Yes	No
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 <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

**Certification**

I, the undersigned (full name) .....  
 certify that the information furnished on this declaration form 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 so, furnish particulars:
  
  - 3.7 Have you been in the service of the state for the past twelve months? **Yes/No**
  - 3.7.1 If so, 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 so, 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 so, 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 so, 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 so, furnish particulars hereunder:
  
  - 3.12 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract? **Yes/No**

3.12.1 If so, 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.

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

Full name	Identity number	State employee number

-----  
**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 bids<sup>1</sup> 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).<sup>2</sup> 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:

<sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.

<sup>2</sup> 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.

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

---

(Bid Number and Description)

in response to the invitation for the bid made by:

---

(Name of 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 consortium<sup>3</sup> 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**

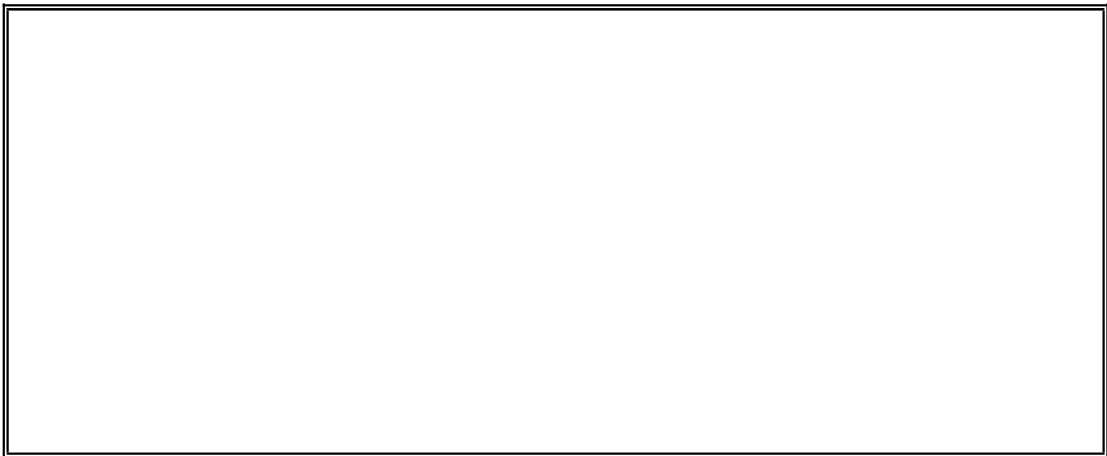
The tenderer is to affix to this page:

- 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 this 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:

$$LC = 1 - \left( \frac{\text{imported content}}{\text{bid price excluding value added tax (VAT)}} \right) \times 100$$

Where

Prices referred to in the determination of 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](http://www.reservebank.co.za).

Indicate the rate(s) of exchange against the appropriate currency in the table below:

<b>Currency</b>	<b>Rates of exchange</b>
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 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 No	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 authorised 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 utilised 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**

**AGREEMENT AND CONTRACT DATA**

**For the Tenderer**

**Q. R. Tambo District Municipality**

**Tender No: MIS 316 080 B**

**DUMASI REGIONAL BULK WATER SUPPLY PHASE 1: DUMASI 5 ML RESERVOIR**

**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 in respect of the following works:

**Contract No: MIS 316 080 B: DUMASI REGIONAL WATER SUPPLY PHASE 1: DUMASI 5 ML CONCRETE RESERVOIR**

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

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

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

.....  
.....

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

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

Signature(s) .....

Name(s) .....

Capacity .....

**Name and address of organisation** .....

*(Name and address of organisation)*

Name & signature of witness .....

*(Name)*

*Signature*

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 within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date 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** : First Floor  
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:** .....

---

**C: CONFIRMATION OF RECEIPT**

The Tenderer, (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the employer O. R. Tambo District Municipality, as identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

the ..... (day)

of ..... (month)

20..... (year)

at ..... (place)

**For the Contractor:**

**Signature:** .....

**Name:** .....

**Capacity:** .....

**Signature and name of witness:**

**Signature:** .....

**Name:** .....

o.k90mji0  
|

## **C1.2 CONTRACT DATA**

### **PART 1: DATA PROVIDED BY THE EMPLOYER**

#### **CONDITIONS OF CONTRACT**

The *General Conditions of Contract for Construction Works (2015) 3<sup>rd</sup> 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](http://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:

<b>Clause</b>	
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 48 calendar weeks [measured from the Commencement Date, including Saturdays and Sundays, but excluding special non-working days; the above duration includes a total of 14 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 <b>O. R. Tambo District Municipality</b> The Employer's address for receipt of communications is: Physical address:                               Postal Address: Second Floor                                       Private Bag X 6043 Nelson Mandela                                 Mthatha Mvezo Park   5100 Mthatha   Telephone: 047 501 6425 5100
1.1.1.16 1.2.1.2	The Employer's Agent is <b>Ziinzame Consulting Engineers (Pty) Ltd</b> , also referred to in the Contract as "ZCE" The Employer's Agent's address for receipt of communications is: Physical address:                               Postal Address: 25 Falcon Avenue,                               Private Bag X 6043, Southernwood                                     Mthatha Mthatha   5100 5100 Tel No: 047 531 0269 Fax: 086 274 4856                               e-mail: <a href="mailto:admin@ziinzame.co.za">admin@ziinzame.co.za</a>
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"> <li>1 Clause 6.3: Variations (where total variations exceed the contingency sum)</li> <li>2 Clause 5.12: Extension of Time for Practical Completion <ul style="list-style-type: none"> <li>- Certify additional costs/expenditure</li> <li>- Taking over of the Works</li> </ul> </li> </ol>
5.3.1	<p>The documentation required before commencement with Works execution are:</p> <ul style="list-style-type: none"> <li>- Health and Safety Plan (Refer to Clause 4.3)</li> <li>- Initial programme (Refer to Clause 5.6)</li> <li>- Security (Refer to Clause 6.2)</li> <li>- Insurance (Refer to Clause 8.6)</li> <li>- Cash flow projection</li> <li>- Agreement of Indemnity in Terms of Occupational Health and Safety Act 1993</li> </ul>
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.</p> <p>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 up to 10%</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>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.</p> <p>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>

Clause	
8.6.1.5	In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required: - All Risk Insurance - The insurance of materials on site is necessary.
10.5.3	The number of Adjudication Board Members to be appointed is 1.
10.7.1	The determination of disputes shall be by arbitration

	<b>Variations to the Conditions of Contract are:</b>
4.4.2	<i>Add the following to Clause 4.4.2 after the last sentence:</i>  "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."
4.5.4	<i>Replace the contents of Clause 4.5.4 with</i>  "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".
5.3.3	Time to instruct commencement of the Works  <i>Add the following to Clause 5.3.3 after the last sentence:</i>  "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."
5.12	<i>Add the following:</i>  "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."
5.12.2	<i>Replace sub-clause 5.12.2.4 with the following:</i>  "Any disruption of labour on a regional or national level due to political unrest, organised mass action or related incidents which is considered to be beyond the Contractor's control.  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."
5.14.1	Practical Completion  <i>Replace the last sentence of the second paragraph:</i>

	<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>  ", 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>
<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, pay 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>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, 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>10.5.4</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 –
- a) repay any payment except an overpayment previously made by the employer by mistake;
  - b) state that the worker received a greater amount of money than the employer actually paid to the worker; or
  - c) 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 –
- a) work in a way that does not endanger his/her health and safety or that of any other person;
  - b) obey any health and safety instruction;
  - c) obey all health and safety rules of the SPWP;
  - d) use any personal protective equipment or clothing issued by the employer;
  - e) 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 –
  - a) the worker's full name;
  - b) the name and address of the employer;
  - c) the SPWP on which the worker worked;
  - d) the work performed by the worker;
  - e) any training received by the worker as part of the SPWP;
  - f) the period for which the worker worked on the SPWP;
  - g) 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 at .....on this  
..... day of .....20.....

**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 .....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.]***

**C1.5 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)**

THIS AGREEMENT made at .....

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

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

in his capacity as .....

and .....

(Hereinafter called "the 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 mandataries, and
    - (iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.
  - (b) The procedures and safety rules of the Employer as pertaining to the 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**

**PRICING DATA**

## **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 <sup>2</sup>	=	square metre	No.	=	number
m <sup>2</sup> pass	=	square metre-pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewton
m <sup>3</sup>	=	cubic metre	MN.m	=	meganewton-metre
m <sup>3</sup> .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:

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
1.	SABS 1200 A - GENERAL	PD.5
2.	5ML RESERVOIR	PD.10
	SUMMARY OF BILL OF QUANTITIES	PD.52
	DECLARATION	PD.53

SECTION 1: SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.1	8.3	FIXED-CHARGE AND VALUE RELATED ITEMS				
1.1.1	8.3.1	Contractual Requirements	Sum	1		
	8.3.2	Establishment of Facilities on the Site				
	8.3.2.1	Facilities for Engineer				
1.1.2	PSAB 3.2	a) Furnished offices (1No.)	Sum	1		
1.1.3		b) Telephone	Sum	1		
1.1.4		c) Nameboards (2 No.)	Sum	1		
	8.3.2.2	Facilities for Contractor				
1.1.5		a) Offices and storage sheds	Sum	1		
1.1.6		b) Workshops	Sum	1		
1.1.7		c) Laboratories	Sum	1		
1.1.8		d) Living accommodation	Sum	1		
1.1.9		e) Ablution and latrine facilities	Sum	1		
1.1.10		f) Tools and equipment	Sum	1		
1.1.11		g) Water supplies, electric power and communications	Sum	1		
1.1.12		h) Dealing with water (see 5.5)	Sum	1		
1.1.13		i) Access (see 5.8)	Sum	1		
1.1.14		j) Plant	Sum	1		
1.1.15	8.3.3	Other Fixed-charge Obligations	Sum	1		
1.1.16	8.3.4	Removal of Site Establishment	Sum	1		
1.1.17	PSA 8.3.5	Provision of a Materials Guarantee	Sum	1		
	PSA 8.4.6	Compliance with the OHS Act (1993, as amended), the Construction Regulations (2014) and the Particular Safety Specification:				
1.1.18	PSHSS 6.1.2; CR 5 (1)(l)	i) Preparation of the Contractor's site specific Health and Safety Plan	Sum	1		
1.1.19	CR 7(1)(b)	ii) Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum	1		
	GSR 2; PSHSS 7.7	iii) Provision of EPWP Branded SABS Personal Protective Equipment				
1.1.20		(a) Hard Hats	No	70		
1.1.21		(b) Reflective vests	No	70		
1.1.22		(c) Protective foot wear	No	70		
1.1.23		(d) Corded Earplugs	No	200		
1.1.24		(e) Dust masks FFP2	No	200		
1.1.25		(g) Gloves	No	200		
1.1.26		(h) Goggles	No	200		
CARRIED FORWARD						

SECTION 1: SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
	CR 7(1)(g);	iv) Cost of medical certificates and medical surveillance				
1.1.27	PSHSS 7.2	(a) Initial (baseline) medical examinations	No	30		
1.1.28		(b) Exit medical examinations	No	30		
	PSHSS 7.14	v) Fall Protection				
1.1.29		a) Lifeline & anchorage	No	2		
1.1.30		b) Safety Harnesses	No	5		
1.1.31		c) Rescue Kit	No	1		
		vi) Occupational Hygiene Survey				
1.1.32	NIHL 6; PSHSS 7.3	(a) Establishment of noise zones (plant)	Sum	1		
1.1.33		(b) Compliance with Amendment of the Occupational Exposure Control Limit for Silica in Table 1 of the Hazardous Chemical Substances including air sampling and analysis	Sum	1		
1.1.34	PSA 8.4.7	Compliance with EMP and EMPr	Sum	1		
1.2	8.4	TIME-RELATED ITEMS				
1.2.1	8.4.1	Contractual Requirements		1		
	8.4.2	Operation and Maintenance of Facilities on Site, for Duration of Construction, except where otherwise stated				
	8.4.2.1	Facilities for Engineer				
1.2.2		a) Furnished offices (1No.)		1		
1.2.3	PSAB 8.4.1	b) Telephone	Sum	1		
1.2.4		c) Nameboards (2 No.)	Sum	1		
1.2.5		d) Survey assistants and materials	Sum	1		
	8.4.2.2	Facilities for Contractor				
1.2.6		a) Offices and storage sheds	Sum	1		
1.2.7		b) Workshops	Sum	1		
1.2.8		c) Laboratories	Sum	1		
1.2.9		d) Living accommodation	Sum	1		
1.2.10		e) Ablution and latrine facilities	Sum	1		
1.2.11		f) Tools and equipment	Sum	1		
1.2.12		g) Water supplies, electric power and communications	Sum	1		
1.2.13		h) Dealing with water (see 5.5)	Sum	1		
1.2.14		i) Access (see 5.8)	Sum	1		
1.2.15		j) Plant	Sum	1		
1.2.16	8.4.3	Supervision for duration of Construction	Sum	1		
CARRIED FORWARD						

SECTION 1: SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.2.17	8.4.5	BROUGHT FORWARD Other Time-related Obligations	Sum	1		
1.2.18	PSA 8.4.6	Compliance with the OHS Act (1993, as amended), the Construction Regulations (2014) and the Particular Safety Specification:				
1.2.18	CR 5(1)(g)	i) Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	month	12		
1.2.19	CR 8(5); PSHSS 6.1.5	ii) Provision of a full- time SACPCMP registered Construction Health and Safety Officer	month	12		
1.2.20		iii) Provision of a part-time assistant SACPCMP Candidate Construction Health and Safety Officer for Subcontractor Management & Assistance	month	12		
1.2.21	GSR 3(5); PSHSS 7.5	iv) OH&S Legal Compliance Training - SAQA UNIT STANDARD a) First Aid	No	1		
1.2.22	PSHSS 6.1.7	b) H&S Representative	No	1		
1.2.23	PSHSS 7.14	c) Working at height & rescue operations	No	20		
1.2.24	CR 29(h)	d) Basic Fire Fighting	No	1		
1.2.25	PSHSS 6.1.3/4	e) Safety for Supervisors	No	2		
1.2.26	PSHSS 7.13	f) Temporary Works Training	No	20		
1.2.27	SANS 10085; PSHSS 7.13	g) Scaffolding	No	5		
1.2.28	PSHSS 7.10	h) Plant Operators	No	5		
1.2.29	PSHSS 6.1.6	i) Temporary Roadworks Signage	Sum	1		
1.2.30	PSHSS 7.17	j) Excavation Safety - Supervisors	No	12		
1.2.31		k) Other	Sum	1		
1.2.32	GSR 3; PSHSS 7.5	v) Provision of First Aid Boxes to GSR requirements	No	3		
1.2.33	GMR 18; PSHSS 7.13	vi) Lifting Equipment Inspection by AIA	Sum	1		
1.2.34	PSHSS 7.13	vii) Temporary Works Designs, Inspections and Approval	Sum	1		
1.2.35	CR 7(1)(c) (e)	viii) Submission of a Health and Safety File	Sum	1		
1.2.36	PSA 8.4.7	Compliance with EMP and EMPr	Sum	1		
1.2.37	PSA 8.4.8	Supervision of Subcontractor	Sum	1		
CARRIED FORWARD						

SECTION 1: SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.3	8.5	BROUGHT FORWARD SUMS STATED PROVISIONALLY BY ENGINEER (Subclause 8.1.2.1 (d))				
1.3.1		Community Liason Officer	Prov. Sum	1	84 000.00	84 000.00
1.3.2		Overheads, charges and profit on 1.3.1 above	%	84000		
1.3.3		Additional Tests required by Engineer	Prov. Sum	1	50 000.00	50 000.00
1.3.4		Overheads, charges and profit on 1.3.3 above	%	50000		
1.3.5		Allowance for additional survey	Prov. Sum	1	50 000.00	50 000.00
1.3.6		Overheads, charges and profit on 1.3.5 above	%	50000		
1.3.7		Allowance for relocation of existing services	Prov. Sum	1	100 000.00	100 000.00
1.3.8		Overheads, charges and profit on 1.3.7 above	%	100000		
1.3.9		Allowance for connections to existing infrastructure	Prov. Sum	1	50 000.00	50 000.00
1.3.10		Overheads, charges and profit on 1.3.9 above	%	50000		
1.3.11		Allowance for lightning protection at Reservoir	Prov. Sum	1	50 000.00	50 000.00
1.3.12		Overheads, charges and profit on 1.3.13 above	%	50000		
1.3.13		Allowance for HIV awareness and training	Prov. Sum	1	10 000.00	10 000.00
1.3.14		Overheads, charges and profit on 1.3.15 above	%	10000		
1.3.15		Expanded Public Works Programme (EPWP) Allowance for training on targeted labour	Prov. Sum	1	100 000.00	100 000.00
1.3.16		Overheads, charges and profit on 1.3.17 above	%	100000		
1.3.17		Transportation and accomodation of workers for training where it is not possible to undertake in close proximity	Prov. Sum	1	10 000.00	10 000.00
1.3.18		Overheads, charges and profit on 1.3.19 above	%	10000		
1.3.19		Equipment for the Engineer	Prov. Sum	1	125 000.00	125 000.00
1.3.20		Overheads, Charges and Profit on item 1.3.23 above	%	125000		
CARRIED FORWARD						

SECTION 1: SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.3.21		BROUGHT FORWARD Allowance for Civil Engineering Student / Trainee	Prov. Sum	1	96 000.00	96 000.00
1.3.22		Overheads, Charges and Profit on item 1.3.25 above	%	96000		
1.3.23		Transportation (including fuel) for the Engineer for the duration of the contract.	Prov. Sum	1	300 000.00	300 000.00
1.3.24		Overheads, Charges and Profit on item 1.3.29 above	%	300000		
1.3.25		Accommodation for the Engineer for the duration of the contract.	Prov. Sum	1	125 000.00	125 000.00
1.3.26		Overheads, Charges and Profit on item 2.2.5 above	%	125000		
1.3.27		Cellphone allowance for the Engineer for the duration of the contract.	Prov. Sum	1	50 000.00	50 000.00
1.3.28		Overheads, Charges and Profit on item 1.3.31 above	%	50000		
	PSA 8.7	DAYWORK (See 8.1.2.1 (d) )				
1.3.29		a) Labour	Prov. Sum	1		
1.3.30		Overheads, charges and profit on item 1.3.33 above	%	100000		
1.3.31		b) Materials	Prov. Sum	1		
1.3.32		Overheads, charges and profit on item 1.3.35 above	%	100000		
1.3.33		c) Plant	Prov. Sum	1		
1.3.34		Overheads, charges and profit on item 1.3.38 above	%	100000		
1.4	8.8	TEMPORARY WORKS (See 8.1.2.1 (d) )				
1.4.1	8.8.1	Main Access Road to Works (construct and maintain)	Sum	1		
1.4.2	8.8.1	Construct Main Access Road to Completed Reservoir	Sum	1		
1.4.3	PSA 8.8.2	Dealing with traffic	Sum	1		
1.4.4		Supply and install 2.1m High Concrete Palisade Fence & 6m wide driveway meshed gate. Rate to Include gate posts and all materials necessary. (3 quotes form local contractors to be arranged)	No	1		
1.4.5	PSA 8.8.7	Contractor to provide "Construction Record" Information	Sum	1		
TOTAL FOR SECTION 1 CARRIED FORWARD TO SUMMARY						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.1	SABS 1200 C 8.2.1	SITE CLEARANCE				
2.1.1	PSC 3.1 PSDB 8.3.1.2	Clear and grub site	m <sup>2</sup>	2700		
	8.2.2	Remove and grub large trees and tree stumps of girth				
2.1.2	a)	over 0,5m and up to and including 1m	No	2		
2.1.3	a)	over 1m and up to and including 2m	No	1		
		Remove and stockpile topsoil				
2.1.4	8.2.10 PSC 3.1 PSDB 8.3.1.C	Remove topsoil to a depth of 200 mm prior to carrying out bulk excavation below reservoir, stockpile and maintain for further use	m <sup>3</sup>	240		
2.2	SABS 1200 D PSD	Bulk Excavation				
		Open face excavation in all materials over site				
2.2.1	8.3.2	Excavate in all materials from natural ground level to desired founding level and stockpile for later use and maintain for backfill and dispose of the remainder to an approved spoil site (including shaping to be free-draining and with embankment slopes shallower than 1:3 and compacting)	m <sup>3</sup>	7500		
		Excavation within particular sections to form platform for soil raft				
2.2.2		Excavate in all materials, to grade level, and stockpile for later use and maintain for backfill and dispose of the remainder to an approved spoil site (including shaping to be free-draining and with embankment slopes shallower than 1:3 and compacting)	m <sup>3</sup>	500		
	8.3.2 b	Extra over for items 3.1.1				
2.2.3	8.3.2 b.1	Intermediate excavation	m <sup>3</sup>	500		
2.2.4	8.3.2 b.2	Hard rock excavation	m <sup>3</sup>	150		
2.2.5	8.3.2 b.3	Boulder excavation Class A	m <sup>3</sup>	750		
	8.3.3	Restricted Excavation				
		Excavate in all materials and use for backfill or embankments or dispose, as ordered for: (Free haul 0.5km )				
2.2.6		Shear pads	m <sup>3</sup>	20		
2.2.7		Under floor drains	m <sup>3</sup>	100		
2.2.8		Chambers	m <sup>3</sup>	150		
	8.3.4	Imported Geo-fill below floor slab as directed.				
CARRIED FORWARD						



SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.2.9		BROUGHT FORWARD Import, place and compact in individual layers "G5" material to form Geo-fill below floor slab as directed by the engineer. Fill to be placed in layers typically 200 mm thick when loose and compacted to 95% Modified AASHTO dry density at O.M.C.	m <sup>3</sup>	1500		
2.2.10		Import, place and compact in individual layers "G2" material stabilised with 3% cement to form Geo-fill below floor slab as directed by the engineer. Fill to be placed in layers typically 200 mm thick when loose and compacted to 95% Modified AASHTO dry density at O.M.C.	m <sup>3</sup>	500		
2.2.11		Rip and re-compact 150mm layer in-situ material, stabilised with 2% lime and compact to 95% mod. Aashto dry density at O.M.C. below floor slab as directed by the engineer.	m <sup>2</sup>	1200		
	8.3.9	Backfill to reservoir Backfill and compact with material from excavations (stockpile previously set aside)				
2.2.12		Around chambers to 95% Modified AASHTO	m <sup>3</sup>	120		
2.2.13		Below natural ground level and around reservoir to 95% Modified AASHTO	m <sup>3</sup>	200		
2.2.14		Banks against walls, etc executed concurrently with water filling to reservoir in layers not exceeding 200 mm compacted to 93% Modified AASHTO	m <sup>3</sup>	1250		
	8.3.8	Existing Services				
2.2.15	8.3.8.1 c	Excavate by hand in soft material to expose existing services	m <sup>3</sup>	30		
	8.3.11	Grassing and ground covers				
2.2.16		Planting and maintaining of kikuyu grass until established	m <sup>2</sup>	650		
		Trimming				
2.2.17		Machine trimming	m <sup>2</sup>	200		
2.2.18		Hand trimming	m <sup>2</sup>	450		
		Preparing the area for grassing				
2.2.19		Ripping	m <sup>2</sup>	650		
2.2.20		Ploughing to loosen topsoil	m <sup>2</sup>	650		
	8.3.10	Topsoiling				
2.2.21		Topsoil obtained from stockpile	m <sup>2</sup>	650		
		Providing and applying chemical fertilisers and / or soil improvement material				
2.2.22		Lime	kg	50		
CARRIED FORWARD						

## SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.2.23		BROUGHT FORWARD Superphosphate	kg	50		
2.2.24		2 : 3 : 2 Planting and establishing	kg	50		
2.2.25		Trees	No	5		
2.2.26		Shrubs	No	10		
2.3	SABS 1200G & PSG	CONCRETE STRUCTURAL				
		Unreinforced Concrete				
	PSG 7.2.6	Concrete 15Mpa / 26mm				
2.3.1	8.4.3	No fines under floors minimum 75 mm thick	m <sup>2</sup>	1050		
2.3.2	8.4.2	Blinding layer minimum 75 mm thick	m <sup>2</sup>	1050		
2.3.3		Mass concrete to subsoil drain encasement	m <sup>3</sup>	10		
2.3.4		Mass concrete to pipe encasement	m <sup>3</sup>	20		
	8.4.3	Concrete 20Mpa / 19mm				
2.3.5		Shear pads	m <sup>3</sup>	18		
2.3.6		Concrete aprons to be cast in alternate panels around reservoir	m <sup>3</sup>	15		
	8.4.3 PSG 5.5.11 PSG 7.2.6	Reinforced Concrete				
		Concrete 30Mpa / 19mm				
		Chambers				
2.3.7		Floor slab	m <sup>3</sup>	12		
2.3.8		Walls	m <sup>3</sup>	75		
2.3.9		Roof slab	m <sup>3</sup>	12		
2.3.10		Plinths and Thrust blocks	m <sup>3</sup>	10		
		Reservoir				
2.3.11		Roof slab	m <sup>3</sup>	264		
2.3.12		Inverted Beams	m <sup>3</sup>	11		
		35 Mpa/19mm Concrete				
		Reservoir				
2.3.13		Wall base	m <sup>3</sup>	121		
2.3.14		Floor slab	m <sup>3</sup>	171		
2.3.15		Column bases	m <sup>3</sup>	33		
2.3.16		Columns	m <sup>3</sup>	61		
2.3.17		Walls	m <sup>3</sup>	237		
2.3.18		Scour sump	m <sup>3</sup>	3		
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
	8.2	Formwork				
	PSG 8.1.1					
2.3.19	8.2.1	Rough vertical: Chamber walls	m <sup>2</sup>	235		
2.3.20	8.2.2	Smooth vertical Reservoir wall	m <sup>2</sup>	1250		
2.3.21		Chamber walls	m <sup>2</sup>	215		
2.3.22		Plinths and Thrust blocks	m <sup>2</sup>	30		
2.3.23		300mm Diameter column approx. 5.5m high overall with cone shaped, cap 1200mm dia. At top and 475mm high overall, with the top 50mm of cap vertical	No	21		
2.3.24		Smooth horizontal Roof slab to inside face of reservoir wall (propped at 6.0m)	m <sup>2</sup>	915		
2.3.25		Chamber roof slabs (propped at exc. 3.0m but n.e 4.5m)	m <sup>2</sup>	40		
2.3.26	8.2.5	Narrow widths Reservoir 180mm Inside face of inverted beam at roof slab	m	110		
2.3.27		200mm Floor slab at construction joints (one side measured only)	m	330		
2.3.28		325mm Edge of column bases	m	170		
2.3.29		400mm Outside face of inverted beam / roof slab	m	110		
2.3.30		400mm Outside face of upstand at permanent access opening in roof slab	m	10		
2.3.31		450mm Edge to wall base	m	115		
2.3.32		Rough formwork to jointing face of wall and wall base	m	110		
2.3.33		600mm Inside face of upstand at permanent access opening in roof slab	m	10		
2.3.34		600mm Outside face of scour sump	m	4		
2.3.35		400mm Inside face of scour sump	m	4		
2.3.36		Chambers 200mm Inner face of manhole opening	m	25		
2.3.37		300mm Edge of floor slab	m	60		
2.3.38	PSG 8.17	Bondbreakers 250 micron Upvc sheeting under floors (measured nett) inclusive of 250mm overlap and appropriate tape / weld.	m <sup>2</sup>	1200		
CARRIED FORWARD						

## SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
	8.3	Reinforcement				
2.3.39	8.3.1	Mild steel bars		0		
2.3.40		8mm	t	1		
2.3.41		10mm	t	1		
	8.3.1	High-tensile steel bars				
2.3.42		10mm	t	15		
2.3.43		12mm	t	40		
2.3.44		16mm	t	43		
2.3.45		20mm	t	50		
	8.4.4	Unformed Surface finishes				
	8.4.4 a PSG 5.5.10.2	Wood floated finish (to degree of accuracy II)				
2.3.46		Reservoir roof slab including top of ring beam and manhole walls	m <sup>2</sup>	930		
2.3.47		External face of reservoir floor slab	m <sup>2</sup>	80		
	8.4.4 b PSG 5.5.10.3	Steel floated finish (to degree of accuracy II)				
2.3.48		Shear pads	m <sup>2</sup>	55		
2.3.49		Chamber floor and roof slabs	m <sup>2</sup>	80		
2.3.50		Top of wall base	m <sup>2</sup>	180		
	8.4.4 c	Power floated finish (to degree of accuracy II)				
2.3.51		Reservoir floor slab	m <sup>2</sup>	700		
	PSG 5.5.10.4	Screeds				
2.3.52		Average 100mm thick 1:4 sand cement screed to chamber floors	m <sup>2</sup>	50		
	8.5 PSG 3.11.2 PSG 5.5.7 PSG 8.5	Joints				
		Joints in reservoir floor including all materials, formwork, sealants, bandages, etc.as detailed on drawings.				
2.3.53		Reference type F1	m	100		
2.3.54		Reference type F2	m	115		
2.3.55		Reference type F3	m	115		
		Construction joint in reservoir sump as detailed				
2.3.56		Reference Type S1	m	4		
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.3.57		BROUGHT FORWARD Reference Type S2 Construction joint between top of wall and roof slab of reservoir as detailed	m	4		
2.3.58	PSG 8.18	Reference Type R1 Joints in reservoir wall including all materials, formwork, sealants, bandages, etc. all as detailed on the drawings.	m	110		
2.3.59		Reference type W1	m	110		
2.3.60		Reference type W2 Concrete Sundries	m	110		
	PSG 7.2.5 PSG 8.15	Testing				
2.3.61		Testing of new reservoir for Watertightness in accordance with the specification.	Sum	1		
2.3.62		Sterilising of new reservoir in accordance with the specification	Sum	1		
	PSG 5.5.8	Curing and Protection using Water or an approved curing compound				
2.3.63		Reservoir bases	m <sup>2</sup>	200		
2.3.64		floor slab	m <sup>2</sup>	760		
2.3.65		walls	m <sup>2</sup>	1230		
2.3.66		roof slab	m <sup>2</sup>	1000		
2.3.67		Scour sump Chambers	m <sup>2</sup>	5		
2.3.68		floor slab	m <sup>2</sup>	50		
2.3.69		walls	m <sup>2</sup>	385		
2.3.70		roof slab	m <sup>2</sup>	50		
2.4	SABS 1200 DB	EARTHWORKS ( PIPE TRENCHES )				
	8.3.2	Excavation				
2.4.1	8.3.1 c	Remove topsoil to a depth of 300 mm along pipe trench and stockpile separate from remainder of excavated material  Excavate in all materials for trenches, backfill and compact to 95% Mod AASHTO and dispose of surplus and unsuitable material for pipe not exceeding 300mm internal diameter	m <sup>3</sup>	120		
2.4.2		Exceeding 1.0m but not exceeding 2.0m deep	m <sup>3</sup>	730		
2.4.3		Exceeding 2.0m but not exceeding 3.0m deep	m <sup>3</sup>	280		
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
	8.3.2 b	Extra over for item 5.1.1:				
2.4.4	8.3.2 b.1	Intermediate excavation	m <sup>3</sup>	100		
2.4.5	8.3.2 b.2	Hard rock excavation	m <sup>3</sup>	100		
2.5	SABS 1200 L & PB	PIPE LAYING				
		Medium-Pressure Pipelines				
	PSG 5.5.16	ReservoirPipework				
		Inlet Pipework				
	8.2.5	Supply, handle, lay and install mild steel pipes and fittings including making good coating and lining all as detailed on drawings				
2.5.1		200 N.B S/S. MEDIUM, RADIUS, DUCKFOOT BEND, WITH BELLMOUTH AND FLANGED OTHER END. (marked item 12)	No	1		
2.5.2		200 N.B. x 3 715 F/F S/S. PIPE , FLANGED ON BOTH ENDS. (marked item 13)	No	2		
2.5.3		200 N.B. S/S. 90 DEG., MEDIUM RADIUS BEND, FLANGED. (SEE NOTE ABOUT AIR NOZZLE) (marked item 14)	No	1		
2.5.4		200 N.B. x 850 F/F S/S PIPE, FLANGED BOTH ENDS, WITH PUDDLE FLANGE 300mm FROM ONE END. (marked item 15)	No	1		
2.5.5		200 N.B. M.S. 90 Deg., MEDIUM RADIUS BEND, FLANGED. (marked item 16)	No	1		
2.5.6		200 N.B. M.S. 90Deg., LONG RADIUS BEND, ONE END FLANGED AND THE OTHER PLAIN. (marked item 17)	No	1		
2.5.7		200 N.B. x 1 000 F/F M/S PIPE, FLANGED ON BOTH ENDS , (marked item 17a)	No	1		
2.5.8		200 N.B. M.S. 22.5Deg., MEDIUM RADIUS BEND, FLANGED AT ONE END AND PLAIN AT THE OTHER, (marked item 17b)	No	1		
2.5.9		300 N.B. x 2 950 F/F M/S PIPE, FLANGED. (marked item 17c)	No	1		
2.5.10		200 N.B. M.S. V.J. COUPLING (TO BE DENSO WRAPPED TO SPECIFICATION), (marked item 45)	No	2		
		Outlet Pipework				
	8.2.5	Supply, handle, lay and install stainless steel pipes and fittings including making good coating and lining all as detailed on drawings				
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.5.11		BROUGHT FORWARD 200 N.B.x 155 F/F S/S BELLMOUTH, PLAIN ENDED. (WELDED TO ITEM No. 2 ), (marked item 01)	No	1		
2.5.12		200 N.B. S/S 90 degree MEDIUM RADIUS BEND, PLAIN ENDED, WITH ONE LEG 750 C/F AND A PUDDLE FLANGE 105mm C/F FROM LONG LEG END. (WELDED TO ITEM No. 1 & 3) (marked item 02).	No	1		
2.5.13		200 N.B. x 10 600 F/F, S/S PIPE , PLAIN ENDED. ( WELDED TO ITEM No. 2 ), (marked item 03)	No	1		
	8.2.5	Overflow Pipework Supply, handle, lay and install stainless steel pipes and fittings including making good coating and lining all as detailed on drawings				
2.5.14		250 N.B. x 5 945 F/F S/S, PIPE, BELL-MOUTHED ONE END, PLAIN OTHER END ( WELDED TO ITEM No. 26 ) (marked item 25)	No	1		
2.5.15		250 N.B. S/S 900 SHORT RADIUS BEND, PLAIN ENDED. (marked item 26)	No	1		
2.5.16		250 N.B. x 2 610 F/F S/S, PIPE , PLAIN BOTH ENDS. (marked item 27)	No	1		
2.5.17		250 N.B. M.S. V.J. COUPLING (TO BE DENSO WRAPPED TO SPECIFICATION), (marked item 28)		0		
2.5.18			No	1		
2.5.19		250 N.B. x 2 850 F/F M.S. PLAIN ONE END, FLANGED OTHER END, WITH PUDDLE 500mm FROM SHAPED END. (NOTE SHAPE OF THE END (NOTE SHAPE OF THE END ENTERING THE SCOUR/OVERFLOW CHAMBER) (marked item 29)	No	1		
2.5.20		250 N.B. M/S. 900, ELBOW. ENDS TO BE FLANGED. (marked item 35)	No	2		
2.5.21		250 N.B. x 3000mm F/F M/S. PIPE,FLANGED BOTH ENDS. (marked item 36)	No	1		
2.5.22		250 N.B. x 1900mm F/F M/S PIPE,FLANGED AT ONE END AND PLAIN ENDED AT THE OTHER END. (marked item 37)	No	1		
	8.2.5	Scour Outlet Supply, handle, lay and install stainless steel pipes and fittings including making good coating and lining all as detailed on drawings				
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.5.23		BROUGHT FORWARD 200 N.B. x 102 S/S BELLMOUTH, PLAIN ENDED. ( WELDED TO ITEM No. 19 ) (marked item 18)	No	1		
2.5.24		200 N.B. S/S 900 MEDIUM RADIUS BEND, PLAIN ENDED, WITH ONE LEG 393 C/F. (WELDED TO ITEM No. 20) (marked item 19)	No	1		
2.5.25		200 N.B. x 4 685 F/F S/S PIPE , PLAIN ENDED. (marked item 20)	No	1		
2.5.26		200 N.B. M.S. V.J. COUPLING (TO BE DENSO WRAPPED TO SPECIFICATION), (marked item 21)	No	1		
2.5.27		200 N.B. x 1 830 F/F M.S. PIPE , PLAIN ENDED AT ONE END AND FLANGED AT THE OTHER END. (marked item 22)	No	1		
2.5.28		200 N.B. x 790 F/F M.S. PUDDLE PIPE, FLANGED AT BOTH ENDS, WITH A PUDDLE FLANGE 300mm FROM EITHER END. (marked item 23)	No	1		
2.5.29		200 N.B., RESILIENT SEAL, GATE VALVE, DOUBLE- SPIGOTTED, NON-RISING SPINDLE, CLASS 10, FLANGED. (marked item 24)	No	1		
	8.2.1	Discharge from Scour Chambers to Headwall: Supply, handle, lay, joint, bed and test the following series for uPVC pipes and joints.				
2.5.30		355mm x 3 000mm "CLASS 12" uPVC PIPE. (marked item 39)	No	1		
2.5.31		355mm uPVC, 22.50 UPVC ELBOW. (marked item 40)	No	5		
2.5.32		355mm x 64 000mm "CLASS 12" uPVC PIPE. (marked item 41)	No	1		
2.5.33		355mm uPVC, 900 UPVC ELBOW. (marked item 52)	No	5		
2.5.34		355mm x 50 000mm "CLASS 12" uPVC PIPE. (marked item 53)	No	1		
2.5.35		Construct new headwall including energy dissipators and scour protection for scour and overflow pipelines as per Drawings	Sum	1		
	SABS 1200 DK	Gabions and Pitching, Supply and fix gabion baskets for scour protection				
2.5.36	8.2.2	Supply and lay uPVC reno mattress to scour chamber as per Drawing No. 338	m <sup>2</sup>	32		
2.5.37		Supply and place 19mm concrete stone to form stone pitching from 300mm half round channels to botom of bank, as directed by engineer on site.	m <sup>3</sup>	10		
CARRIED FORWARD						



SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.5.38	8.2.2	BROUGHT FORWARD 2.0 x 4.0 x 0.3 thk. reno mattress laid on scour trench to support gabion baskets in accordance with drawing.	No.	4		
2.5.39	8.2.2	2.0 x 1.0 x 0.3 thk. reno mattress laid on scour trench to support gabions baskets in accordance with drawing.	No.	6		
2.5.40	8.2.2	1.0m wide x 1.0m long x 1.0m high gabion baskets laid on reno mattress all in accordance with drawing.	No.	20		
2.5.41	8.2.2	Supply and lay hand stone to reno mattress in accordance to manufacturers instructions.	m <sup>3</sup>	26		
2.5.42	8.2.2	Supply and lay hand stone to gabion baskets in accordance to manufacturers instructions	m <sup>3</sup>	20		
2.5.43	8.2.2	2.0 x 1.0 x 0.3 thk. reno mattress laid in scour and overflow chamber in accordance with drawing.	No.	1		
2.5.44		Precast Concrete Channels Supply, bed, lay and joint 300 mm diameter half round channels at downpipes from reservoir roof	m	50		
2.6	SABS 1200 HA	SUNDRY STEELWORK  Access Ladders				
	8.3.3	Stainless steel access ladder fabricated to details on Drawings and fixed to inner face of reservoir and floor with M16 stainless steel Hilti H.K.B Kwik-bolts 100 mm in length				
2.6.1		Overall length 6.0m long	No	1		
	PSG 8.16	MANHOLE COVERS AND FRAMES				
2.6.2		Manhole cover to 700 x 1000 mm opening all as detailed on Drawings with frame anchors cast into and frame bolted to concrete slab with galvanised bolts as specified.	No	1		
2.6.3		Manhole cover to 900 x 1200 mm opening all as detailed on Drawings with frame anchors cast into and frame bolted to concrete slab with galvanised bolts as specified.	No	5		
		STAINLESS STEEL VENTILATION PIPES Fabricate and install air ventilators to details on Drawings				
2.6.4		Fabricate and install air ventilators to details on Drawings	No	5		
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.6.5		BROUGHT FORWARD	No	5		
		Fabricate and install air ventilators as per Drawings that extended through roof of chamber with 100 mm dia. Class 6 uPVC pipe as detailed and fixed to sides of walls with stainless steel brackets and M10 Hilti s/s HSL heavy duty anchors 75 mm long for chambers with depths:				
2.6.6		2.1 m deep	No	3		
		Pipe Support Brackets				
2.6.7		Supply, fabricate and install pipe support brackets as per Drawing Nos. 336	No	7		
		ALUMINIUM SIGNBOARD AND NUMBER PLATES				
		Fabricate and install signboard and number plates and paint details to colours specified. As detailed on Drawings				
2.6.8		500 mm x 500 mm Signboard fixed to wall	No	10		
2.6.9		Number plates	No	14		
2.7		MISCELLANEOUS ITEMS				
		Subsoil Drainage				
		Supply, handle, lay and bed "110mm Diameter Slotted Agricultural" pipes in trench ( trench excavation measured elsewhere )				
2.7.1		110mm Diameter slotted Agricultural pipes below reservoir floor	m	200		
2.7.2		110mm Diameter slotted Agricultural pipes around reservoir wall base forming sidewall drain.	m	120		
2.7.3		Extra over "Slotted Agricultural" pipes for 100 mm x 45 degree bend	No	20		
2.7.4		Extra over "Slotted Agricultural" pipes for 100 mm x 90 degree bend	No	14		
2.7.5		In concrete encasement below reservoir wall base	m	18		
2.7.6		Supply and place 19mm concrete stone in drainage trench under reservoir floor	m <sup>3</sup>	85		
2.7.7		Supply and install A4 Bidum above drain	m <sup>2</sup>	100		
2.7.8		Supply and install 250 micron uPVC membrane below and to sides of drain	m <sup>2</sup>	245		
2.7.9		Supply and install A4 Bidum around sidewall drain	m <sup>2</sup>	315		
2.8		Roof Drainage Pipes and Scuppers				
2.8.1		Supply, deliver, hoist and place 25 mm washed stone on reservoir roof slab	m <sup>3</sup>	100		
CARRIED FORWARD						

SECTION 2: 5ML Dumasi Reservoir

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.8.2		BROUGHT FORWARD 450 mm long 75 mm diameter Class 4 uPVC pipe cast into concrete upstand beam with one end fitted with 3CR12 stainless steel bird mesh and tightly secured to the roof slab upstand beam	No	16		
2.8.3		75 mm dia. Class 4 vertical drain pipe fixed to horizontal pipe, including all necessary couplings fixed to walls of reservoir with holder bat brackets	m	72		
2.8.4		Extra over Class 4 uPVC pipes for : 75 mm x 90 degree bends	No	32		
2.8.5		7 mm x 45 degree bends	No	10		
2.8.6		75 mm "T" connection	No	10		
2.8.7		110 mm x 75 mm reducing square junctions	No	20		
2.8.8		900mm Galvanised handrail fabricated to details on Drawing and fixed to reservoir roof slab with M12 galvanised steel Hilti H.K.B Kwik-bolts 100 mm in length	No	1		
2.8.9		Drainage Pipe in Floor 300 mm diameter x 700 mm long uPVC drainage pipe cast vertically 100 mm deep into and including 15Mpa / 19 mm concrete base size 500 x 500 x 200 mm thick including necessary excavation, formwork and backfilling and other end cast through 300 mm thick concrete floor slab.	No	4		
2.9		Brickwork				
2.9.1		Construct 220mm thick brickwall inside reservoir including brickforce every fourth course. Rate to include all materials.	m <sup>2</sup>	15		
2.10	SABS 1200 H	FENCING				
2.10.1		Supply and install 2.1m HIGH x 3mm high density welded ripper razor meshed fence with 500mm dia. "flatwrap" fencing around the reservoir as illustrated on drawings. Rate to Include corner, straining and intermediate posts and all materials necessary(3 quotes from local contractors to be arranged)	m	180		
2.10.2		Supply and install 2.1m HIGH x 3mm high density welded ripper razor x 6m wide meshed driveway gate fence as illustrated on drawings. Rate to Include gate posts and all materials necessary. (3 quotes form local contractors to be arranged)	No	1		
TOTAL FOR SECTION 2 CARRIED FORWARD TO SUMMARY						

**SUMMARY OF BILL OF QUANTITIES**

		AMOUNT
SECTION 1	SABS 1200 A - GENERAL	
SECTION 2	5ML RESERVOIR	
SECTION 3	SUBCONTRACTOR'S SCOPE	

**NETT TOTAL OF TENDER** .....

ALLOWANCE FOR CONTINGENCIES (10% OF SUBTOTAL) .....  
 (to be spend as the Engineer may direct and to be deducted in whole  
 or in part it not required)

**TOTAL INCLUDING CONTINGENCIES** .....

ALLOWANCE FOR VAT 15% .....

**GROSS TOTAL CARRIED TO PART C1.1 FORM OF OFFER & ACCEPTANCE** .....

**TIME FOR COMPLETION OF CONTRACT (not to exceed 48 weeks)** ..... weeks

**SIGNED BY/ON BEHALF OF TENDERER**

**NAME**

**SIGNATURE**

**DATE**

**COMPANY STAMP**

## 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 316 080 B – DUMASI REGIONAL BULK WATER SCHEME PHASE 1: Dumasi 5MI Reservoir** has been based.

**SIGNED BY/ON BEHALF OF TENDERER**

**NAME**

**SIGNATURE**

**DATE**



**O.R. TAMBO  
DISTRICT MUNICIPALITY**

**VOLUME 1**

**CONTRACT**

**SCOPE OF WORKS**

### **C3.1**            **DESCRIPTION OF THE WORKS**

#### **C3.1.1**           **EMPLOYER'S OBJECTIVES**

The Employer's objectives are to deliver public infrastructure using labour-optimised methods where possible. The intention is to provide a 5ML potable water storage reinforced concrete reservoir to the Contract 2 section of the **DUMASI REGIONAL Water Scheme Phase 1**.

#### **C3.1.2**           **OVERVIEW OF THE WORKS**

The work to be carried out includes **Site Clearance Around Working Areas, Excavations for Reservoirs, Layer Works for The Reservoir, The Construction of A 5ML Reinforced Concrete Reservoir and The Construction of Valve 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.

#### **C3.1.4**           **LOCATION OF THE WORKS**

The project is located approximately 15km South East of Mthatha CBD and is situated in the Nyandeni Local Municipality within the jurisdiction of the O. R. Tambo District Municipality in the province of the Eastern Cape. Access to the community is off DR 08030 between Mthatha and Ngqeleni towns, which join the R61 between Mthatha and Libode towns.

The approximate central coordinates of the project area are as follows:

Latitude:            31° 35' 58" South  
Longitude:         28° 49' 03" East

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	Engineer
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.



CONTRACT 2 RESERVOIR

DRAWING No	DESCRIPTION	REV
PRJ 040-CT2-DRS 330	5ML DUMASI RESERVOIR PERIMETER FENCING LAYOUT & DETAILS	B
PRJ 040-CT2-DRS 331	5 ML DUMASI RESERVOIR FENCING SECTIONS & DETAILS	B
PRJ 040-CT2-DRS 332	5 ML DUMASI RESERVOIR FLOOR, UNDER FLOOR DRAINAGE, SECTIONS & DETAILS	B
PRJ 040-CT2-DRS 333	5 ML DUMASI RESERVOIR SECTIONS & DETAILS	B
PRJ 040-CT2-DRS 334	5 ML DUMASI RESERVOIR ROOF SLAB LAYOUT & SECTIONS	B
PRJ 040-CT2-DRS 335	5 MLDUMASI RESERVOIR MANHOLE DETAILS	B
PRJ 040-CT2-DRS 336	5 ML DUMASI RESERVOIR INTERNAL & EXTERNAL LADDER, SCOUR & OVER FLOW CHAMBER & AIR VENT DETAILS	B
PRJ 040-CT2-DRS 337	5 ML DUMASI RESERVOIR INLET, OUTLET, SCOUR & ETC...SECTIONS & DETAILS	B
PRJ 040-CT2-DRS 338	5 ML DUMASI RESERVOIR PIPE WORK, SCOUR CHAMBER AND HEADWALL DETAILS	B

**C3.2.5 DESIGN PROCEDURES**

Not applicable.

**C3.3            PROCUREMENT**

**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 12 no. privately owned properties. (approval obtained)

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 bench-marks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during

the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

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 the via the road to Ngqeleni, which branches off the R61 approximately 5 km east of Mthatha Town, toward Ngqeleni. 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**

<b>Personnel</b>	<b>NQF level</b>	<b>Unit standard titles</b>	<b>Skills programme description</b>
Team Leader / Supervisor	<b>2</b>	Apply Labour-Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, <b>and</b>  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	<b>4</b>	Implement Labour-Intensive Construction Systems and Techniques	This unit standard must be completed, <b>and</b>  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)	<b>5</b>	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 (i.e. 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 75.05 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.

### **1.2.1 Contract participation goals**

1.2.1.1 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.

1.2.1.2 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.

### **1.2.2 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.

### **1.2.3 Variations to SANS 1914-5**

1.2.3.1 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.

1.2.3.2 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.

- 1.3.3 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
- 1.3.4 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.
- 1.3.5 The contractors shall do nothing to dissuade targeted labour from participating in the above mentioned training programmes.
- 1.3.6 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 in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

#### (b) Fires

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

#### (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 Contractor 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 live stock.

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**

<b>Month</b>	<b>Expected number of working days lost due to normal rainfall</b>	<b>Month</b>	<b>Expected number of working days lost due to normal rainfall</b>
January	8	July	2
February	8	August	2
March	7	September	4
April	5	October	4
May	4	November	6
June	3	December	6

\*\*\*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**

**PA:**              **SITE SPECIFIC HEALTH AND SAFETY SPECIFICATION**

**SUPERVISION BY THE PRINCIPAL CONTRACTOR:**

**PRINCIPAL CONTRACTOR:**            **(full particulars of principle contractor / contractor)**

**Mr /Ms/Me**                                 **-            HEALTH & SAFETY OFFICER**  
   **(Add full details of this officer)**

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## 1. PREAMBLE

In terms of Construction Regulation 5(1) (b) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), O. R. Tambo District Municipality, as the Client and/or its Agent on its behalf, shall be responsible to prepare Health & Safety Specifications for any intended construction project and provide any Principal Contractor who is making a bid or appointed to perform construction work for the Client and/or its Agent on its behalf with the same.

The Client's further duties are as described in The Act and the Regulations made thereunder. The Principal Contractor shall be responsible for the Health & Safety Policy for the site in terms of Section 7 of the Act and in line with Construction Regulation 7(a) as well as the Health and Safety Plan for the project.

This 'Health and Safety Specifications' document is governed by the "Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), hereinafter referred to as 'The Act'. Notwithstanding this, cognisance should be taken of the fact that no single Act or its set of Regulations can be read in isolation. Furthermore, although the definition of Health and Safety Specifications stipulates 'a documented specification of all health and safety requirements pertaining to associated works on a construction site, so as to ensure the health and safety of persons', it is required that the entire scope of the Labour legislation, including the Basic Conditions of Employment Act be considered as part of the legal compliance system. With reference to this specification document this requirement is limited to all health, safety and environmental issues pertaining to the site of the project as referred to here-in. Despite the foregoing it is reiterated that environmental management shall receive due attention.

Due to the wide scope and definition of construction work, every construction activity and site will be different, and circumstances and conditions may change even on a daily basis. Therefore, due caution is to be taken by the Principal Contractor when drafting the Health and Safety Plan based on these Health and Safety Specifications. Prior to drafting the Health and Safety Plan, and in consideration of the information contained here-in, the contractor shall set up a Risk Assessment Program to identify and determine the scope and details of any risk associated with any hazard at the construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard. *This Risk Assessment and the steps identified will be the basis or point of departure for the Health and Safety Plan.* The Health and Safety Plan shall include documented 'Methods of Statement' (see definitions under Construction Regulations) detailing the key activities to be performed in order to reduce as far as practicable, the hazards identified in the Risk Assessment.

Ziinzame Consulting Engineers is tasked to implement a water project in the O. R. Tambo District. To implement the program, the appointed contractor will employ a number of service providers including sub-contractors and laborers on site. These people are directly involved in construction and maintenance of our projects.

In this a high premium is to be placed on the health and safety of the most valuable assets of the contractor. These are its personnel, the personnel of its Clients and the physical assets of which it is the custodian and may include the public as well. The responsibilities the contractor and relevant stakeholders have toward its employees and other people present in the facilities or on the sites are captured further in this specification document. These responsibilities stem from both moral, civil and a variety of legal obligations. The Principal Contractor is to take due cognisance of the above statement.

Every effort has been made to ensure that this specification document is accurate and adequate in all respects. Should it however, contain any errors or omissions they may not be considered as grounds for claims under the contract for additional reimbursement or extension of time, or relieve the Principal Contractor from his responsibilities and accountability in respect of the project to which this specification document pertains. Any such inaccuracies, inconsistencies and/or inadequacies must immediately be brought to the attention of the Agent and/or Client.

## **2. SCOPE OF HEALTH AND SAFETY SPECIFICATION DOCUMENT**

The Health and Safety Specifications pertaining to the project; **DUMASI BULK WATER SUPPLY: PHASE 1** – see paragraph 8 on page 14), cover the subjects contained in the index and is intended to outline the normal as well as any special requirements of Talitha Training and Development pertaining to the health and safety matters (including the environment) applicable to the project in question. These Specifications should be read in conjunction with the Act, the Construction Regulations and all other Regulations and Safety Standards which were or will be promulgated under the Act or incorporated into the Act and be in force or come into force during the effective duration of the project. The stipulations in this specification, as well as those contained in all other documentation pertaining to the project, including contract documentation and technical specifications shall not be interpreted, in any way whatsoever, to countermand or nullify any stipulation of the Act, Regulations and Safety Standards which are promulgated under, or incorporated into the Act.

### 3. PURPOSE

Talitha Training and Development is obligated to implement measures to ensure the health and safety of all people and properties affected under its custodianship or contractual commitments, and is further obligated to monitor that these measures are structured and applied according to the requirements of these Health and Safety Specifications. **(All references to the singular shall also be regarded as references to the plural)**

The purpose of this specification document is to provide the relevant Principal Contractor (and his /her contractor) with any information other than the standard conditions pertaining to construction sites which might affect the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; and to protect persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work during the carrying out of construction work for Talitha Training and Development. The Principal Contractor (and his /her contractor) is to be briefed on the significant health and safety aspects of the project and to be provided with information and requirements on inter alia:

- a) safety considerations affecting the site of the project and its environment;
- b) health and safety aspects of the associated structures and equipment;
- c) submissions on health and safety matters required from the Principal Contractor (and his /her contractor); and
- d) the Principal Contractor's (and his /her contractor) health & safety plan.

To serve to ensure that the Principal Contractor (and his /her contractor) is fully aware of what is expected from him/her with regard to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Regulations made there-under including the applicable safety standards, and in particular in terms of Section 8 of the Act.

To inform the Principal Contractor that the Occupational Health and Safety Act, 1993 (Act 85 of 1993) in its entirety shall apply to the contract to which this specification document applies. The Construction Regulations promulgated on 7 February 2014 and incorporated into the above Act by Government Notice R84, published in Government Gazette 37305 shall apply to any person involved in construction work pertaining to this project, as will the Act.

#### 4. DEFINITIONS -

**The most important definitions in the Act and Regulations pertaining to this specification document are hereby extracted.**

“Purpose of the Act” –

To provide for the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

“Agent” –

means a competent person who acts as a representative for a client;

“Client” –

means any person for whom construction work is performed;

“Construction Work” is defined as any work in connection with –

- (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- (b) the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

“Contractor” –

means an employer, as defined in Section 1 of the Act, who performs construction work and includes Principal Contractors;

“Health and Safety File” –

means a file, or other record, containing the information in writing required by the regulations;

“Health and Safety Plan” –

means a site, activity or project specific documented in accordance with the client’s health and safety specification which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

“Health and Safety Specification” –

means a site activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work so as to ensure the health and safety of persons;

“Method Statement” –

means a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

“Principal Contractor” –

means an employer, who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

“Risk Assessment” –

means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.

## 5. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

### 5.1 Structure and Organization of OH&S Responsibilities

#### 5.1.2 Overall Supervision and Responsibility for OH&S

- \* The Client and/or its Agent on its behalf to ensure that the Principal Contractor, appointed in terms of Construction Regulation 5(1)(k), implements and maintains the agreed and approved H&S Plan. Failure on the part of the Client or Agent to comply with this requirement will not relieve the Principal Contractor from any one or more of his/her duties under the Act and Regulations.
  
- \* The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that the Employer (as defined in the Act) complies with the Act. The pro forma Legal Compliance Audit may be used for this purpose by the Principal Contractor or his/her appointed contractor.
  
- \* All OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal Contractor to become part of site records (Health & Safety File).
  
- \* The Construction Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 8 to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal Contractor to become part of site records (Health & Safety File).
  
- .
  
- \* All Health and Safety Representatives (SHE-Reps) shall act and report as per Section 18 of the Act.



### 5.1.2. Further (Specific) Supervision Responsibilities for OH&S

Several appointments or designations of responsible and /or competent people in specific areas of construction work are required by the Act and Regulations. The following competent appointments, where applicable, in terms of the Construction Regulations are required to ensure compliance to the Act, Regulations and Safety Standards.

**Required appointments as per the Construction Regulations: -**

Item	Regulation	Appointment	Responsible Person
1.	5(1)(k)	Principal contractor for each phase or project	Client
2.	7(1)©	Contractor	Principal Contractor
3.	8 (1)	Construction Manager	Contractor
4.	8(2)	Assistance Construction Manager	Contractor
5.	8(5)	Health and Safety Officer	Contractor
6.	8(7)	Construction supervisor	Contractor
7.	9(1)	Person to carry out risk assessment	Contractor
8.	10(1)(a)	Fall protection planner	Contractor
9.	11(2)(a)	Structure Inspector	
10.	12(1)	Temporary Work Designer	Contractor
11.	13(1)	Excavation Supervisor	Contractor
12.	14(1)	Supervisor Demolition Work	Contractor
13.	16(1)	Scaffold Supervisor	Contractor
14.	17(1)	Suspended Platform Supervisor	Contractor
15.	18(1)(a)	Rope Access Supervisor	Contractor
16.	19(8)(a)	Material Hoist Inspector	Contractor
17.	20(1)	Batch Plant Supervisor	Contractor
18.	21(1)	Person to control and do the issuing and collection of cartridges and nails/studs	Contractor
19.	23(1)(k)	Construction Vehicle and mobile plants inspector	Contractor
32.	24 (c)	Temporary electrical installations controller	Contractor
33.	28 (a)	Stacking and storage supervisor	Contractor
34.	29 (h)	Fire equipment inspector	Contractor

This list may be used as a reference or tool to determine which components of the Act and Regulations would be applicable to a particular site, as was intended under paragraph 3 & 4 of the Chapter “Preamble” (page 4) above. This list must not be assumed to be exclusive or comprehensive.

## **5.2 Communication & Liaison**

- 5.2.1 OH&S Liaison between the Employer, the Principal Contractor, the other Contractors, the Designer and other concerned parties shall be through the H&S Committee as per the procedures determined by the H&S Committee.
- 5.2.2 In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.
- 5.2.3 Consultation with the workforce on OH&S matters will be through their Supervisors and H&S Representatives (‘SHE – Reps’)
- 5.2.4 The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and/or its Agent on its behalf and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

## **6. INTERPRETATION**

- (i) The Occupational Health and Safety Act and all its Regulations, with the exception of the Construction Regulations, distinguish between the roles, responsibilities and functions of employers and employees respectively. It views consultants and contractors as employees of the “owner” of a construction or operational project, the “owner” being regarded as the employer. Only if formally agreed to by way of the written agreement in this regard between the “owner(s)” and consultant and /or between the “owner(s)” and the contractor(s), will these assumptions be relinquished in favour of the position agreed upon between the relevant parties.
- (ii) The position taken by the Construction Regulations is that the “owner”, in terms of its instructions, operates (has to operate) in the role of client as per relevant definition. The contractors working for the “client” are seen to be in two categories, i.e. the Principal Contractor and Contractors. The Principal Contractor has to take full responsibility for the health and safety on the site of the relevant project / contract. This includes monitoring health and safety conditions and overseeing administrative measures required by the Construction Regulations from all contractors on the project site. (Ordinary / sub) Contractors are required to operate under the scrutiny and control (in terms of all health

and safety measures which are covered in the Construction Regulations) of the Principal Contractor. Where, for the work the Principal Contractor will have to execute himself, practical health and safety measures are applicable, he will also be subject to the relevant requirements with which (ordinary / sub) Contractors have to comply. The Principal Contractor will, however, not have to actually fulfill such requirements in respect of any of the work / functions of any (ordinary / sub) Contractors on the site for which he has been appointed as Principal Contractor. However, he has to monitor / oversee such processes, ensuring that the requirements are complied with and that the required appointments / evaluations / inspections / assessments and tests are done and that the records are duly generated and kept as prescribed in the Construction Regulations. This has to feature clearly in the Principal Contractor's Health and Safety Plan.

## **7. RESPONSIBILITIES**

### **7.1 Client**

7.1.1 The Client or his appointed Agent on his behalf will appoint each Principal Contractor for this project or phase/section of the project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations and determined by the Bills of Quantities.

7.1.2 The Client or his appointed Agent on his behalf shall discuss and negotiate with the Principal Contractor the contents of the health and safety plan of the both Principal Contractor and Contractor for approval.

7.1.3 The Client or his appointed Agent on his behalf, will take reasonable steps to ensure that the health and safety plan of both the Principal Contractor and Contractor is implemented and maintained. The steps taken will include periodic audits at intervals of at least once every month.

7.1.4 The Client or his appointed Agent on his behalf, will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:

- have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;
- have failed to implement or maintain their health and safety plan;

- have executed construction work which is not in accordance with their health and safety plan; or
- act in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.

## **7.2 Principal Contractor**

7.2.1 The Principal Contractor shall accept the appointment under the terms and Conditions of Contract. The Principal Contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 3 of the Construction Regulations. Annexure B of this Specification contains a “Notification of Construction Work” form. The Principal Contractor shall submit the notification in writing prior to commencement of work and inform the Client or his Agent accordingly.

7.2.2 The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations or any part of either. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with. The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.

7.2.3 The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.

7.2.4 The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement with the works.

7.2.5 The Potential Principal Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and Construction Regulations. (Note: This shall have to be contained in the conditions of tender upon which a tenderer's offer is based.)

7.2.6 The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.

7.2.7 The Principal Contractor shall ensure that a copy of his health and safety plan is available on site and is presented upon request to the Client, an Inspector, Employee or Sub-contractor.

7.2.8 The Principal Contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this Specification, the Act and the Construction Regulations, is opened and kept on site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.

7.2.9 The Principal Contractor shall, throughout execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the Construction Regulations are complied with as if they were the Principal Contractor.

7.2.10 The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.

### **7.3 Contractor**

Responsibilities of (**name of the contractor**) in terms of this contract and health and safety specification

As per 7.2 above, as and where applicable or as indicated in the letter of appointment.

## **8. SCOPE OF WORK**

*(also refer to paragraph 2 on page 5)*

These specifications are applicable to the specific scope of work pertaining to the **DUMASI BULK WATER SUPPLY: PHASE 1** (as detailed in the tender documents), this amongst all includes for example:

- Site establishment

- Access to the works area
- Excavations
- Fencing
- Pipe laying
- Slab casting
- Pipe laying

**N.B** Construction Regulation 7(1)(c)(i) determines that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process. The Principal Contractor shall on tendering make provision for the cost of health and safety measures in terms of his/her documented Health and Safety Plan and measures based on these Health and Safety Specifications during the period of the project. The cost shall be duly quantified and clearly identified for such identifiable purpose.

**THE HEALTH AND SAFETY PLAN IS THEREFORE TO BE INCLUDED WITH THE TENDER DOCUMENTS WHEN TENDERS ARE INVITED FOR THE PROJECT.**

## **9. HEALTH AND SAFETY FILE**

The Principal Contractor must, in terms of Construction Regulation 7(1)(b), keep a Health & Safety File on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done. A more detailed list of documents and other legal requirements that must be kept in the Health and Safety File is attached as an addendum to this document. These documents must be made available on request to an inspector, client, the client's agent or a contractor.

### **IMPORTANT:**

The Health and Safety File will remain the property of the Client and/or its Agent on its behalf throughout the period of the project and shall be consolidated and handed over to the Client and/or its Agent on its behalf at the time of completion of the project.

## **10. OHS GOALS AND OBJECTIVES AND ARRANGEMENTS FOR MONITORING AND REVIEWING OHS PERFORMANCE**

The Principal Contractor is required to maintain an acceptable disabling incident frequency rate (DIFR) and report on this to the Client and/or its Agent on its behalf on a monthly basis.

## **11. IDENTIFICATION OF HAZARDS AND DEVELOPMENT OF RISK ASSESSMENTS, STANDARD WORKING PROCEDURES (SWP) AND METHOD STATEMENTS**

The Principal Contractor is required to develop Risk Assessments, Safe Working Procedures (SWP) and Method Statements for each activity executed in the contract or project (see 4. below "Project/Site Specific Requirements") and maintain compliance by supervision – task observations.

The identification of hazards is over and above the hazards identification programme and those hazards identified during the drafting of the Health and Safety Plan.

## **12. ARRANGEMENTS FOR MONITORING AND REVIEW**

### 12.1 Monthly Audit by Client and/or its Agent on its behalf

The Client and/or its Agent on its behalf will be conducting Periodic Audits at times agreed with the Principal Contractor Audit to comply with Construction Regulation 5(1)(o) to ensure that the principal Contractor has implemented, is adhering to and is maintaining the agreed and approved OH&S Plan.

### 12.2 Other audits and inspections by client and/or its agent on its behalf.

The Client and/or its Agent on its behalf reserves the right to conduct any other ad hoc audits and inspections as it and/or its Agent on its behalf deem necessary.

A representative of the Principal Contractor and the relevant Health and Safety Representative(s) (SHE-Reps) must accompany the Client and/or its Agent on its behalf on all Audits and Inspections and may conduct their own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results. The Client and/or its Agent on its behalf may require to be handed a copy of the minutes of the previous Health and Safety Committee meeting reflecting possible recommendations made by that committee to the Employer for reference purposes.

### 12.3 Reports

12.3.1 The Principal Contractor shall report all incidents where an employee is injured on duty to the extent that he/she:

- \* dies
- \* becomes unconscious
- \* loses a limb or part of a limb
- \* is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

- \* a major incident occurred
- \* the health or safety of any person was endangered



- \* where a dangerous substance was spilled
- \* the uncontrolled release of any substance under pressure took place
- \* machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- \* machinery ran out of control,

to the Provincial Director of the Department of Labour within seven days and at the same time to the Client and/or its Agent on its behalf.

Refer in this regard to Section 24 of the Act & General Administrative Regulation 8.

**If the incident happened where employee is fatally injured, the work must be stopped, top Management of Talitha Training and Development, Provincial Director of DoL and SAPS must be informed immediately and their representative must be on site before any remedial or corrective action is taken on site. Never move items or disturb or interfere with the evidence of the occurrence on site.**

12.3.2 The Principal Contractor is required to provide the Client and/or its Agent on its behalf with copies of all statutory reports required in terms of the Act and the Regulations.

12.3.3 The Principal Contractor is required to provide the Client and/or its Agent on its behalf with a monthly "SHE Risk Management Report".

12.3.4 The Principal Contractor is required to provide a.s.a.p. the Client and/or its Agent on its behalf with copies of all internal and external accident/incident investigation reports including the reports contemplated in 12.7, 12.8.2, 15, 16, 17, 21 and 22 below. As soon as the occurrence of any accident/incident of whatever nature comes to the notice of the Principal Contractor, it shall be reported immediately to any of the following:

- \* Details to be advised

#### 12.4 Review

The Principal Contractor is to review the Hazard Identification, Risk Assessments and Safe Work Procedures at each Production Planning and Progress Report meeting as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client and/or its Agent on its behalf, other Contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated in the above paragraph.

## 12.5 Site Rules and other Restrictions

### 12.5.1 Site OHS Rules

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the Health and Safety Plan and associated aspects of the construction.

When required for a site by law, visitors and non-employees upon entering the site shall be issued with the proper Personal Protective Equipment (PPE) as and when necessary.

### 12.5.2 Security Arrangements

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees shall at all times be provided with fulltime supervision while on site.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period.

If not already tasked to the H&S Officer appointed in terms of Construction Regulation 8(5), the Principal Contractor must appoint a competent Emergency Controller who must develop contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a monthly practice/testing programme for the plans e.g. January: trench collapse, February: flooding etc. and practiced/tested with all persons on site at the time, participating.

## 12.6 Training

The contents and syllabi of all training required by the Act and Regulations including any other related or relevant training as required must be included in the Principal Contractor's Health and Safety Plan and Health and Safety File.

### 12.6.1 General Induction Training

All employees of the Principal and other Contractors must be in possession of proof of General Induction training

#### 12.6.2 Site Specific Induction Training

All employees of the Principal and other Contractors must be in possession of Site Specific Occupational Health and Safety Induction or other qualifying training.

#### 12.6.3 Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations must be in possession of valid proof of training as follows:

Occupational Health and Safety Training Requirements: (as required by the Construction Regulations and as indicated by the Health and Safety Specification Document & the Risk Assessment/s and recommendations by the Health and Safety Committee):

- \* General Induction (Section 8 of the Act)
- \* Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- \* Site/Project Manager
- \* Construction Supervisor
- \* OH&S Representatives (Section 18 (3) of the Act)
- \* Training of the Appointees indicated in 12.6.1 & 12.6.2 above
- \* Operation of Cranes (Driven Machinery Regulations 18 (11))
- \* Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 21)
- \* Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction Regulation 27)
- \* As a minimum basic First Aid to be upgraded when necessary (General Safety Regulations 3)
- \* Storekeeping Methods & Safe Stacking (Construction Regulation 26)
- \* Emergency, Security and Fire Coordinator

## **12.7 Accident and Incident Investigation**

The Principal Contractor is responsible to oversee the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to receive first aid or be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9)

The results of the investigation to be entered into the Accident/Incident Register listed above. (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar incidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents relating to the construction site and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

Notwithstanding the requirements of Section 24 of the Act, ALL incidents shall be investigated and reported on in writing, irrespective of whether such incident gave rise to injury or damage.

## **12.8 H&S Representatives (SHE-Reps – ‘safety, health & environment’) and H&S Committees**

### **12.8.1 Designation of H&S Representatives (‘SHE – Reps’)**

Where the Principal Contractor employs more than 20 persons (including the employees of other Contractors (sub-contractors) he has to appoint one H&S Representatives for every 50 employees or part thereof. (Section 17 of the Act and General Administrative Regulation 6. & 7.)

H&S Representatives have to be designated in writing and the designation shall be in accordance with the Collective Agreement as concluded between the parties as is required in terms of General Administration Regulation 6.

### **12.8.2 Duties and Functions of the H&S Representatives**

The Principal Contractor must ensure that the designated H&S Representatives conduct at least a weekly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor, after which these reports shall be consolidated for submission to the Health and Safety Committee.

H&S Representatives must be included in and be part of accident/incident investigations.

H&S Representatives shall be members of at least one H&S Committee and must attend all meetings of that H&S committee.

### **12.8.3 Establishment of H&S Committee(s)**

The Principal Contractor must establish H&S Committees consisting of designated H&S Representatives together with a number of Employers Representatives appointed as per Section 19(3) that are not allowed to exceed the number of H&S Representatives on the committee. The persons nominated by the employer on a H&S Committee must be designated in writing for such period as may be determined by him. The H&S Committee shall co-opt advisory (temporary) members and determine the procedures of the meetings including the chairmanship.

The H&S Committee must meet minimum monthly and consider, at least, the following Agenda for the first meeting. Thereafter the H&S Committee shall determine its own procedures as per the previous paragraph.

Agenda:

- 1) Opening and determining of chairmanship (only when necessary)
- 2) Minutes of Previous Minutes
- 3) Observations
- 4) Program and Safety considerations
- 5) Hygiene
- 6) Housekeeping improvement
- 7) Incidents & Accidents / Injuries
- 8) Registers:
  - a H&S Rep. Inspections
  - b. Matters of First Aid
  - c. Scaffolding
  - d. Ladders
  - e. Lifting Equipment

- f. Excavations
  - g. Portable Electric Equipment
  - h. Fire Equipment
  - i. Pneumatic or Hydraulic Power Tools
  - j. Power Hand tools
  - k. Incident! Report Investigation
  - l. Pressure Vessels
  - m. Personal Protective Equipment
- 9) Safety performance Evaluations
  - 10) Education & Safety promotion program
  - 11) First Aid Officials and training in First Aid
  - 12) Demarcation of work- /hazardous-/safe areas/walkways
  - 13) Posters and signage
  - 14) Environmental preservation and conservation
  - 15) Specific training programmes
  - 16) General
  - 17) Date of Next Meeting
  - 18) Closing

### **13. PROJECT/SITE SPECIFIC REQUIREMENTS**

The following is a list of specific activities and considerations that have been identified for the project and site and for which Risk Assessments, Safe Working Procedures (SWP), management and control measures (Task Observations) and Method Statements (where necessary) have to be developed by the Principal Contractor:

- \* Clearing & Grubbing of the Area/Site
- \* Site Establishment including:
  - o Office/s
  - o Secure/Safe Storage and storage areas for materials, plant & equipment
  - o Ablution facilities
  - o Sheltered dining area
  - o Vehicle access to the site
- \* Dealing with existing Structures.
- \* Location of existing Services
- \* Installation & Maintenance of Temporary Construction Electrical Supply, Lighting and Equipment

- \* Adjacent Land uses/Surrounding property exposures
- \* Boundary & Access control/Public Liability Exposures (Remember: the Employer is also responsible for the OH&S of non-employees affected by his/her work activities.)
- \* Health risks arising from neighboring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning, allergies etc.
- \* Exposure to Noise
- \* Exposure to Vibration
- \* Exposure to Odour and fumes
- \* Protection against dehydration and heat exhaustion
- \* Protection from wet & cold conditions
- \* Dealing with HIV/Aids and other diseases as per specific programme provided by the client and/or its Agent on its behalf
- \* Use of Portable Electrical Equipment including:
  - Angle grinder
  - Electrical Drilling machine
  - Skill saw
- \* Excavations including:
  - Ground/soil conditions
  - Trenching
  - Shoring
  - Drainage
  - Daily inspections
- \* Welding including:
  - Arc Welding
  - Gas welding
  - Flame Cutting
  - Use of LP Gas torches and appliances
- \* Loading & Offloading of Trucks
- \* Aggregate/Sand and other Materials Delivery
- \* Manual and Mechanical Handling
- \* Lifting and Lowering Operations
- \* Driving & Operation of Construction Vehicles and Mobile Plant including:
  - Trenching machine
  - Excavator
  - Bomag Roller
  - Plate Compactor
  - Front End Loader
  - Mobile Cranes and the ancillary lifting tackle

- Parking of Vehicles & Mobile Plant
- Towing of Vehicles & Mobile Plant
- \* Use and Storage of Flammable Liquids and other Hazardous Substances – the client and/or its Agent on its behalf to be informed of this prior to commencing of the project
- \* Layering and Bedding of trench floor
- \* Installation of Pipes in trenches
- \* Backfilling of Trenches
- \* Protection against Flooding
- \* Gabion work
- \* Use of Explosives - the client and/or its Agent on its behalf to be informed of this prior to commencing of the project
- \* Protection from Overhead Power Lines
- \* As discovered by the Principal Contractor's hazard identification exercise
- \* As discovered from any inspections and audits conducted by the Client and/or its Agent on its behalf or by the Principal Contractor or any other Contractor on site
- \* As discovered from any accident/incident investigation.

13.1 The following are in particular requirements depending on scope of works and will form a basis for compliance audits.

1. Administrative & Legal Requirements
2. Education, Training & Awareness / Promotion
3. Public Safety & Emergency Preparedness
4. Personal Protective Equipment
5. Housekeeping
6. Scaffolding, Formwork & Support work
7. Ladders
8. Electrical Safeguarding (Lockout System)
9. Mechanical Safeguarding (rotating part, heating part cover)
10. Emergency/Fire Prevention & Protection
11. Excavations & Demolition
12. Tools
13. Cranes



- 13. Personnel & Material Hoists
- 14. Transport & Materials Handling
- 15. Site Plant & Machinery
- 16. Plant & Storage Yards/Site Workshops Specifics
- 17. Health & Hygiene

**14. OUTLINED DATA, REFERENCES AND INFORMATION ON CERTAIN AND/OR SPECIFIC OBLIGATORY REQUIREMENTS TO ENSURE COMPLIANCE**

14.1 Administrative & Legal Requirements

<i>OHS Act Section/ Regulation</i>	Subject	Requirements
Construction. Regulation 4	<b>Notice of carrying out Construction work</b>	Department of Labour notified Copy of Notice available on Site
General Admin. Regulation 4	<b>*Copy of OH&amp;S Act (Act 85 of 1993)</b>	Updated copy of Act & Regulations on site. Readily available for perusal by employees.
COID Act Section 80	<b>*Registration with Compensation Insurer</b>	Written proof of registration/Letter of good standing available on Site
Construction. Regulation 5(b)(c)	<b>H&amp;S Specification &amp; Programme</b>	H&S Spec received from Client and/or its Agent on its behalf OH&S programme developed & Updated regularly
Section 8(2)(d) Construction. Regulation 7	<b>*Hazard Identification &amp; Risk Assessment</b>	Hazard Identification carried out/Recorded Risk Assessment and – Plan drawn up/Updated and make recommendations RA Plan available on Site Employees/Sub-Contractors informed/trained
Section 16(2)	<b>*Assigned duties (Managers)</b>	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.
Construction. Regulation 6(1)	<b>Designation of Person Responsible on Site</b>	Competent person appointed in writing as Construction Supervisor with job description
Construction. Regulation 8(7)	<b>Designation of Assistant for above</b>	Competent person appointed in writing as Assistant Construction Supervisor with job description
Section 17 & 18 General Administrative Regulations 6 & 7	<b>*Designation of Health &amp; Safety Representatives</b>	More than 20 employees - one H&S Representative, one additional H&S Rep. for each 50 employees or part thereof. Designation in writing, period and area of responsibility

		specified in terms of GAR 6 & 7 Meaningful H&S Rep. reports. Reports actioned by Management.
Section 19 & 20 General Administrative Regulations 5	<b>*Health &amp; Safety Committee/s</b>	H&S Committee/s established. All H&S Reps shall be members of H&S Committees Additional members are appointed in writing. Meetings held monthly, Minutes kept. Actioned by Management.
Section 37(1) & (2)	<b>*Agreement with Mandataries/ (Sub- )Contractors</b>	Written agreement with (Sub-)Contractors List of (Sub-) Contractors displayed. Proof of Registration with Compensation Insurer/Letter of Good Standing Construction Supervisor designated Written arrangements re. H&S Reps & H&S Committee Written arrangements re. First Aid
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	<b>*Reporting of Incidents (Dept. of Labour)</b>	Incident Reporting Procedure displayed. All incidents in terms of Sect. 24 reported to the Provincial Director, Department of Labour, within 3 days. (Annexure 1?)(WCL 1 or 2) and to the Client and/or its Agent on its behalf Cases of Occupational Disease Reported Copies of Reports available on Site Record of First Aid injuries kept
General Admin. Regulation 9	<b>*Investigation and Recording of Incidents</b>	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of Reports (Annexure 1) available on Site Tabled at H&S Committee meeting Action taken by Site Management.
Construction. Regulation 10	<b>Fall Prevention &amp; Protection</b>	Competent person appointed to draw up and supervise the Fall Protection Plan Proof of appointee's competence available on Site Risk Assessment carried out for work at heights Fall Protection Plan drawn up/updated Available on Site
Construction. Regulation 10(a)	Roof work	Competent person appointed to plan & supervise Roof work. Proof of appointee's competence available on Site Risk Assessment carried out Roof work Plan drawn up/updated Roof work inspect before each shift. Inspection register kept Employees medically examined for physical & psychological fitness. Written proof on site

Construction. Regulation 11	<b>Structures</b>	Information re. the structure being erected received from the Designer including: - geo-science technical report where relevant - the design loading of the structure - the methods & sequence of construction - anticipated dangers/hazards/special measures to construct safely Risk Assessment carried out Method statement drawn up All above available on Site Structures inspected before each shift. Inspections register kept
Construction. Regulation 12	<b>Temporary Works</b>	Competent person appointed in writing to supervise erection, maintenance, use and dismantling temporary works. Design drawings available on site Risk Assessment carried out Temporary works inspected: - before use/inspection - before pouring of concrete - daily whilst in place - before stripping/dismantling. - Inspection register kept
Construction. Regulation 16	<b>Scaffolding</b>	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s) - act as Scaffold Team Leaders - inspect Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees available on Site Copy of SABS 085 available on Site Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept
Construction. Regulation 17	<b>Suspended Platforms</b>	Competent persons appointed in writing to: - control the erection of Suspended platforms - act as Suspended platforms Team Leaders - inspect Suspended Scaffolding weekly and after inclement weather Risk Assessment conducted Certificate of Authorisation issued by a registered professional engineer available on Site/copy forwarded to the Department of Labour The following inspections of the whole installation carried out by a competent person

		<ul style="list-style-type: none"> <li>- after erection and before use</li> <li>- daily prior to use. Inspection register kept</li> </ul> <p>The following tests to be conducted by a competent person:</p> <ul style="list-style-type: none"> <li>- load test of whole installation and working parts every three months</li> <li>- hoisting ropes/hooks/load attaching devices quarterly.</li> </ul> <p>Tests log book kept</p> <p>Employees working on Suspended Platform medically examined for physical &amp; psychological fitness. Written proof available</p>
Construction. Regulation 13	Excavations	<p>Competent person/s appointed in writing to supervise and inspect excavation work</p> <p>Written Proof of Competence of above appointee/s available on Site</p> <p>Risk Assessment carried out</p> <p>Inspected:</p> <ul style="list-style-type: none"> <li>- before every shift</li> <li>- after any blasting</li> <li>- after an unexpected fall of ground</li> <li>- after any substantial damage to the shoring</li> <li>- after rain. Inspections register kept</li> </ul> <p>Method statement developed where explosives will be/ are used</p>
Construction. Regulation 14	Demolition Work	<p>Competent person/s appointed in writing to supervise and control Demolition work</p> <p>Written Proof of Competence of above appointee/s available on Site</p> <p>Risk Assessment carried out</p> <p>Engineering survey and Method Statement available on Site</p> <p>Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept</p>
Construction. Regulation 19	Materials Hoist	<p>Competent person appointed in writing to inspect the Material Hoist</p> <p>Written Proof of Competence of above appointee available on Site.</p> <p>Materials Hoist to be inspected weekly by a competent person. Inspections register kept.</p>
Construction. Regulation 21	Explosive Actuated Fastening Device	<p>Competent person appointed to control the issue of the Explosive Actuated Fastening Device &amp; cartridges and</p>

		the service, maintenance and cleaning. Register kept of above Empty cartridge cases/nails/fixing bolts returns recorded Cleaned daily after use <b>Work areas are demarcated!</b>
Construction. Regulation 20	Bulk Mixing Plant (batch plants)	Competent person appointed to control the operation of the Batch Plants and the service, maintenance and cleaning. Register kept of above Risk Assessment carried out Batch Plants to be inspected weekly by a competent person. Inspections register kept.
Construction. Regulation 22/ Driven Machinery Regulations 18 & 19	Cranes & Lifting Machines Equipment	Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment Written Proof of Competence of above appointee available on Site. Cranes & Lifting tackle identified/numbered Register kept for Lifting Tackle Log Book kept for each individual Crane Inspection: - All cranes - <b>daily by operator</b> - Tower Crane/s - <b>after erection/6monthly</b> - Other cranes - <b>annually by comp. person</b> - Lifting tackle(slings/ropes/chain slings etc.) - daily or before every new application
Construction. Regulation 24/Electrical Machinery Regulations 9 & 10/  Electrical Installation Regulations	<b>*Inspection &amp; Maintenance of Electrical Installation &amp; Equipment (including portable electrical tools)</b>	Competent person appointed in writing to inspect/test the installation and equipment. Written Proof of Competence of above appointee available on Site. Inspections: - Electrical Installation & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools, electric lights and extension leads must be uniquely identified/numbered. Daily visual inspection by user and Weekly visual inspection by Issuer/Storeman. Register kept.
Construction. Regulation 28/ General Safety Regulation 8(1)(a)	<b>*Designation of Stacking &amp; Storage Supervisor.</b>	Competent Person/s with specific knowledge and experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site
Construction. Regulation 29/ Environmental Regulation 9	<b>*Designation of a Person to Co-ordinate Emergency Planning And Fire Protection</b>	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: - Drilled/Practiced

		<p>- Plan &amp; Records of Drills/Practices available on Site</p> <p>Fire Risk Assessment carried out</p> <p>All Fire Extinguishing Equipment identified and on <b>register</b>.</p> <p>Inspected weekly. Inspection Register kept</p> <p>Serviced annually</p>
General Safety Regulation 3	<b>*First Aid</b>	<p>Every workplace provided with sufficient number of First Aid boxes. (Required where 5 persons or more are employed)</p> <p>First Aid freely available</p> <p>Equipment as per the list in the OH&amp;S Act.</p> <p>One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed)</p> <p>List of First Aid Officials and Certificates</p> <p>Name of person/s in charge of First Aid box/es displayed.</p> <p>Location of First Aid box/es clearly indicated.</p> <p>Signs instructing employees to report all Injuries/illness including first aid injuries</p>
General Safety Regulation 2	<b>Personal Safety Equipment (PSE)</b>	<p>PSE Risk Assessment carried out</p> <p>Items of PSE prescribed/use enforced</p> <p>Records of Issue kept</p> <p>Undertaking by Employee to use/wear PSE</p> <p>PSE remain property of Employer, not to be removed from premises GSR 2(4)</p>
General Safety Regulation 9	<b>*Inspection &amp; Use of Welding/Flame Cutting Equipment</b>	<p>Competent Person/s with specific knowledge and experience designated to Inspect Electric Arc, Gas Welding and Flame Cutting Equipment</p> <p>Written Proof of Competence of above appointee available on Site</p> <p>All new vessels checked for leaks, leaking vessels NOT taken into stock but returned to supplier immediately</p> <p>Equipment identified/numbered and entered into a register</p> <p>Equipment inspected weekly. Inspection Register kept</p> <p>Separate, purpose made storage available for full and empty vessels</p>
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 23	<b>*Control of Storage &amp; Usage of HCS and Flammables</b>	<p>Competent Person/s with specific knowledge and experience designated to Control the Storage &amp; Usage of <b>HCS</b> (including Flammables)</p> <p>Written Proof of Competence of above appointee available on Site</p> <p>Risk Assessment carried out</p> <p>Register of HCS kept/used on Site</p>

		Separate, purpose made storage available for full and empty containers
Pressure Equipment Regulations 11	<b>Vessels under Pressure (VUP)</b>	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections & testing of VUP's Written Proof of Competence of above appointee available on Site Risk Assessment carried out Certificates of Manufacture available on Site Register of VUP's on Site Inspections & Testing by Approved Inspection Authority (AIA): <ul style="list-style-type: none"> <li>- after installation/re-erection or repairs</li> <li>- every 36 months.</li> <li>- Register/Log kept of inspections, tests. Modifications &amp; repair</li> </ul>
Construction. Regulation 23	<b>Construction Vehicles &amp; Earth Moving Equipment</b>	Operators/Drivers appointed to: <ul style="list-style-type: none"> <li>- Carry out a daily inspection prior to use</li> <li>- Drive the vehicle/plant that he/she is competent to operate/drive</li> </ul> Written Proof of Competence of above appointee available on Site. Record of Daily inspections kept
General Safety Regulation 13A	<b>*Inspection of Ladders</b>	Competent person appointed in writing to inspect Ladders Ladders inspected at arrival on site and weekly there after. Inspections register kept Application of the types of ladders (wooden, aluminium etc.) regulated by training and inspections and noted in register
General Safety regulation 13B	Ramps	Competent person appointed in writing to Supervise the erection & inspection of Ramps. Inspection register kept. Daily inspected and noted in register

#### 14.2 Education & Training

Subject	Requirement
*Company OH&S Policy Section 7(1)	Policy signed by CEO and published/Circulated to Employees Policy displayed on Employee Notice Boards Management and employees committed.
*Company/Site OH&S Rules (Section 13(a))	Rules published Rules displayed on Employee Notice Boards Rules issued and employees effectively informed or trained: written proof Follow-up to ensure employees understand/adhere to the policy and rules.

*Induction & Task Safety Training (Section 13(a))	All new employees receive OH&S Induction Training. Training includes Task Safety Instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand/adhere to instructions
*General OH&S Training (Section 13(a))	All current employees receive specified OH&S training: written proof Operators of Plant & Equipment receive specified training Follow-up to ensure employees understand/adhere to instructions.
*Occupational Health & Safety Promotion	<u>Incident Experience Board indicating e.g.</u> * No. of hours worked without an Injury * No. of days worked without an Injury Mission, Vision and Goal Star Grading - Board kept up to date. Safety Posters displayed & changed regularly Employee Notice Board for OH&S Notices. Site OH&S Competition. Company OH&S Competition Participation in Regional OH&S Competition Suggestion scheme.

#### 14.3 Public Safety, Security Measures & Emergency Preparedness

Subject	Requirement
*Notices & Signs	Notices & Signs at entrances / along perimeters indicating <b>“No Unauthorised Entry”</b> . Notices & Signs at entrance instructing visitors and non - employees what to do, where to go and where to report on entering the site/yard with directional signs. e.g. <b>“Visitors to report to Office”</b> Notices & Signs posted to warn of overhead work and other hazardous activities. e.g. <b>General Warning Signs</b>
Site Safeguarding	Nets, Canopies, Platforms, Fans etc. to protect members of the public passing / entering the site.
*Security Measures	Access control measures/register in operation Security patrols after hours during weekends and holidays Sufficient lighting after dark Guard has access to telephone/ mobile/other means of emergency communication
*Emergency Preparedness	Emergency contact numbers displayed and made available to Security & Guard Emergency Evacuation instructions posted up on all notice boards (including employees' notice boards) Emergency contingency plan available on site/in yard Doors open outwards/unobstructed Emergency alarm audible all over (including in toilets)



*Emergency Drill & Evacuation	Adequate No. of employees trained to use Fire Fighting Equipment. Emergency Evacuation Plan available, displayed and practiced. <b>(See Section 1 for Designation &amp; Register)</b>
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## 14.4 Personal Protective Equipment

Subject	Requirement
*PPE needs analysis	Need for PPE identified and prescribed in writing. PPE remain property of Employer, not to be removed from premises GSR 2(4)
*Head Protection	All persons on site wearing Safety Helmets including Sub-contractors and Visitors (where prescribed)
*Foot Protection	All employees on site wearing Safety Footwear including Gumboots for concrete / wet work and non-slip shoes for roof work. Visitors to wear same upon request or where prescribed
*Eye and Face Protection	<u>Eye and Face (also Hand and Body) Protection</u> (Goggles, Face Shields, Welding Helmets etc.) used when operating the following: <ul style="list-style-type: none"> <li>* Jack/ Kango Hammers</li> <li>* Angle / Bench Grinders</li> <li>* Electric Drills (Overhead work into concrete / cement / bricks</li> <li>* Explosive Powered tools</li> <li>* Concrete Vibrators / Pokers</li> <li>* Hammers &amp; Chisels</li> <li>* Cutting / Welding Torches</li> <li>* Cutting Tools and Equipment</li> <li>* Guillotines and Benders</li> <li>* Shears</li> <li>* Sanders and Sanding Machines</li> <li>* CO2 and Arc Welding Equipment</li> <li>* Skill / Bench Saws</li> <li>* Spray Painting Equipment etc.</li> </ul>
*Hearing Protection	<u>Hearing Protectors</u> (Muffs, Plugs etc.) used when operating the following: <ul style="list-style-type: none"> <li>* Jack / Kango Hammers</li> <li>* Explosive Powered Tools</li> <li>* Wood/Aluminium Working Machines e.g. saws, planers, routers</li> </ul>
*Hand Protection	<u>Protective Gloves</u> worn by employees handling / using: <ul style="list-style-type: none"> <li>* Cement / Bricks / Steel / Chemicals</li> <li>* Welding Equipment</li> <li>* Hammers &amp; Chisels</li> <li>* Jack / Kango Hammers etc.</li> </ul>
*Respiratory Protection	Suitable/efficient prescribed <u>Respirators</u> worn correctly by employees handling / using: <ul style="list-style-type: none"> <li>* Dry cement</li> <li>* Dusty areas</li> <li>* Hazardous chemicals</li> </ul>

	<ul style="list-style-type: none"> <li>* Angle Grinders</li> <li>* Spray Painting etc.</li> </ul>
*Fall Prevention Equipment	<p>Suitable <u>Safety Belts</u> / Fall Arrest Equipment correctly used by persons working on / in unguarded, elevated positions e.g.:</p> <ul style="list-style-type: none"> <li>* Scaffolding</li> <li>* Riggers</li> <li>* Lift shafts</li> <li>* Edge work</li> <li>* Ring beam edges etc.</li> </ul> <p>Other methods of fall prevention applied e.g. catch nets</p>
*Protective Clothing	All jobs requiring protective clothing (Overalls, Rain Wear, Welding Aprons etc.) Identified and clothing worn.
*PPE Issue & Control	<p>Identified Equipment issued free of charge.</p> <p>All PPE maintained in good condition. (Regular checks).</p> <p>Workers instructed in the proper use &amp; maintenance of PPE.</p> <p>Commitment obtained from wearer accepting conditions and to wear the PPE.</p> <p>Record of PPE issued kept on H&amp;S File.</p> <p>PPE remain property of Employer, not to be removed from premises GSR 2(4)</p>

#### 14.5 Housekeeping

Subject	Requirement
*Scrap Removal System	<p>All items of Scrap/Unusable Off-cuts/Rubble and redundant material removed from working areas on a regular basis.</p> <p>(Daily)</p> <p>Scrap/Waste removal from heights by chute/hoist/crane.</p> <p>Nothing thrown/swept over sides.</p> <p>Scrap disposed of in designated containers/areas</p> <p>Removal from site/yard on a regular basis.</p>
Stacking & Storage  (See Section 1 for Designation & Register)	<p><u>Stacking:</u></p> <ul style="list-style-type: none"> <li>* Stable, on firm level surface/base.</li> <li>* Prevent leaning/collapsing</li> <li>* Irregular shapes bonded</li> <li>* Not exceeding 3x the base</li> <li>* Stacks accessible</li> <li>* Removal from top only.</li> </ul> <p><u>Storage:</u></p> <ul style="list-style-type: none"> <li>* Adequate storage areas provided.</li> <li>* Functional – e.g. demarcated storage areas/racks/bins etc.</li> <li>* Special areas identified and demarcated e.g. flammable gas, cement etc.</li> <li>* Neat, safe, stable and square.</li> <li>* Store/storage areas clear of superfluous material.</li> <li>* Storage behind sheds etc. neat/under control.</li> <li>* Storage areas free from weeds, litter etc.</li> </ul>

*Waste Control/Reclamation	Re-usable off-cuts and other re-usable material removed daily and kept to a minimum in the work areas. All re-usable materials neatly stacked/stored in designated areas. (Nails removed/bent over in re-usable timber). Issue of hardware/nails/screws/cartridges etc. controlled and return of unused items monitored.
Sub-contractors (Housekeeping)	Sub-contractors required to comply with Housekeeping requirements.

#### 14.6 Working at Heights (including roof work)

Subject	Requirement
Openings	Unprotected openings adequately guarded/fenced/barricaded/catch nets installed
	Roof work discontinued when bad/hazardous weather Fall protection measures (including warning notices) when working close to edges or on fragile roofing material Covers over openings in roof of robust construction/secured against displacement

#### 14.7 Scaffolding / Formwork / Support Work

Subject	Requirement
Access/System Scaffolding	Foundation firm / stable Sufficient bracing. Tied to Structure/prevented from side or cross movement Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs Complying with OH&S Act/SABS 085
Free Standing Scaffolding	Foundation firm / stable Sufficient bracing. Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs Height to base ratio correct Outriggers used /tied to structure where necessary Complying with OH&S Act/SABS 085
*Mobile Scaffolding	Foundation firm / stable Sufficient bracing. Platform boards in good condition/sufficient/secured. Handrails and toe boards provided.

	<p>Access ladders / stairs provided.  Area/s under scaffolding tidy.  Safe/unsafe for use signs</p>
*Mobile Scaffolding	<p>Wheels / swivels in good condition  Brakes working and applied.  Height to base ratio correct.  Outriggers used where necessary  Complying with OH&amp;S Act/SABS 085</p>
Suspended Scaffolding	<p>Outriggers securely supported and anchored.  Correct No. of steel wire ropes used.  Platform as close as possible to the structure.  Handrails on all sides  All winches / ropes / cables / brakes inspected regularly and replaced as prescribed  Scaffolding complies with OHS Act (Act 85/93)  Winch(es) maintained by competent person(s)</p>
Formwork / Support Work	<p>All components in good condition.  Foundation firm / stable.  Adequate bracing / stability ensured.  Good workmanship / uprights straight and plumb.  Good cantilever construction.  Safe access provided.  Areas under support work tidy.  Same standards as for system scaffolding.</p>
Special Scaffolding	<p>Special Scaffolding e.g. Cantilever, Jib and Truss-out scaffolds erected to an acceptable standard and inspected by specialists.</p>
Edges & Openings	<p>Edges barricaded to acceptable standards.  Manhole openings covered / barricaded.  Openings in floor / other openings covered, barricaded/fenced.  Stairs provided with handrails.  Lift shafts barricaded / fenced off.</p>

#### 14.8 Ladders

Subject	Requirement
*Physical Condition / Use & Storage	<p>Stepladders - hinges/stays/braces/stiles in order.  Extension ladders - ropes/rungs/stiles/safety latch/hook in order.  Extension / Straight ladders secured or tied at the bottom / top.  No joined ladders used  Wooden ladders are never painted except with varnish  Aluminium ladders NOT to be used with electrical work  All ladders stored on hooks / racks and not on ground.  Ladders protrude 900 mm above landings / platforms / roof.  Fixed ladders higher than 5 m have cages/Fall arrest system</p>

#### 14.9 Electricity

(as part of, or additional to the manual “Safety & Switching Procedures for Electrical Installations”- see attached document)

Subject	Requirement
*Electrical Distribution Boards & Earth Leakage	Colour coded / numbered / symbolic sign displayed. Area in front kept clear and unobstructed. Fitted with inside cover plate / openings blanked off / no exposed “live” conductors / terminals/Door kept close Switches / circuit breakers identified. Earth leakage protection unit fitted and operating. Tested with instrument: Test results within 15 – 30 milliamps Aperture/Opening/s provided for the plugging in and removal of extension leads without the need to open the door Apertures and openings used for extension leads to be protected against the elements and especially rain
*Electrical Installations & Wiring	Temporary wiring / extension leads in good condition / no bare or exposed wires. Earthing continuity / polarity correct: <b>Looking at the open connectors to connect the wiring, the word “Brown” has the letter ‘R’ in it, so the <u>b’R’own</u> wire connects to the ‘<u>R</u>ight hand connector. “Blue” has the letter ‘L’ in it, so the <u>b’L’ue</u> wire connects to the ‘<u>L</u>eft hand connector.</b> Cables protected from mechanical damage and moisture. Correct loading observed e.g. no heating appliance used from lighting circuit etc. Light fittings/lamps protected from mechanical damage/moisture. Cable arrestors in place and used inside plugs
*Physical condition of Electrical Appliances & Tools	<u>Electrical Equipment and Tools:</u> (includes all items plugging in to a 16 Amp supply socket) Insulation / casing in good condition. Earth wire connected/intact where not of double insulated design Double insulation mark indicates that no earth wire is to be connected. Cord in good condition/no bare wires/secured to machine & plug. Plug in good condition, connected correctly and correct polarity.

#### 14.10 Emergency and Fire Prevention and Protection

Subject	Requirement
*Fire Extinguishing Equipment	Fire Risks Identified and on record <u>The correct and adequate Fire Extinguishing Equipment available for:</u> * Offices * General Stores * Flammable Store

	<ul style="list-style-type: none"> <li>* Fuel Storage Tank/s and catchment well</li> <li>* Gas Welding / Cutting operations</li> <li>* Where flammable substances are being used / applied.</li> <li>* Equipment Easily Accessible</li> </ul>
*Maintenance	Fire equipment checked minimum monthly, serviced yearly
*Location & Signs	<u>Fire Extinguishing Equipment:</u> <ul style="list-style-type: none"> <li>* Clearly visible</li> <li>* Unobstructed</li> <li>* Signs posted including “No Smoking” / “No Naked Lights” where required. (Flammable store, Gas store, Fuel tanks etc.)</li> </ul>
* Storage Issue & Control of Flammables (incl. Gas cylinders)	<p>Storage Area provided for flammables with suitable doors, ventilation, bund etc. Flammable store neat / tidy and no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied</p> <p>Only sufficient quantities issued for one task or one day’s usage</p> <p>Separate, special gas cylinder store/storage area.</p> <p>Gas Cylinders stored / used / transported upright and secured in trolley/cradle/structure and ventilated.</p> <p>Types of Gas Cylinders clearly identified as well as the storage area and stored separately.</p> <p>Full cylinders stored separately from empty cylinders.</p> <p>All valves, gauges, connections, threads of all vessels to be checked regularly for leaks.</p> <p>Leaking acetylene vessels to be returned to the supplier <b>IMMEDIATELY.</b></p>
*Storage, Issue & Control of Hazardous Chemical Substances (HCS)	<p>HCS storage principles applied: products segregated</p> <p>Only approved, non-expired HCS to be used</p> <p>Only the prescribed PPE shall be used as the minimum protection</p> <p>Provision made for leakage/spillage containment and ventilation</p> <p>Emergency showers/eye wash facilities provided</p> <p>HCS under lock &amp; key controlled by designated person</p> <p>Decanted/issued in containers as prescribed with information/warning labels</p> <p>Disposal of unwanted HCS by accredited disposal agent</p> <p>No dumping or disposal of any HCS on or inside the storage area or anywhere else on the project site</p> <p>All vessels or containers to be regularly checked for leaks</p>

#### 14.11 Excavations

Subject	Requirement
Excavations deeper than 1.5 m.	<p>Shored / Braced to prevent caving / falling in.</p> <p>Provided with an access ladder.</p> <p>Excavations guarded/barricaded/lighted after dark in public areas</p> <p>Soil dumped at least 1 m away from edge of excavation</p> <p>On sloping ground soil dumped on lower side of excavation</p> <p>All excavations are subject to daily inspections</p>

#### 14.12 Tools

Subject	Requirement
*Hand Tools	<p><u>Shovels / Spades / Picks:</u></p> <ul style="list-style-type: none"> <li>* Handles free from cracks and splinters</li> <li>* Handles fit securely</li> <li>* Working end sharp and true</li> </ul> <p><u>Hammers:</u></p> <ul style="list-style-type: none"> <li>* Good quality handles, no pipe or reinforcing steel handles.</li> <li>* Handles free from cracks and splinters</li> </ul> <p>Handles fit securely</p> <p><u>Chisels:</u></p> <ul style="list-style-type: none"> <li>* No mushroomed heads / heads chamfered</li> <li>* Not hardened</li> <li>* Cutting edge sharp and square</li> </ul> <p><u>Saws:</u></p> <ul style="list-style-type: none"> <li>* Teeth sharp and set correctly</li> <li>* Correct saw used for the job</li> </ul>
*Explosive Powered Tools.	<p>Only used by trained / authorised personnel.</p> <p>Prescribed warning signs placed / displayed where tool is in use.</p> <p>Work area must be properly isolated/demarcated during use of tool.</p> <p>Inspected at least monthly by competent person and results recorded.</p> <p>Issue and return recorded including cartridges / nails and unused cartridges / nails / empty shells recorded.</p> <p>Cleaned daily after use.</p>

#### 14.13 Cranes

Subject	Requirement
Tower Crane	<p>Only operated by trained authorised operator with valid certificate of training</p> <p>Structure - no visible defects</p> <p>Electrical installation good/safe</p> <p>Crane hook: Throat pop marked/safety latch fitted/functional</p> <p>SWL/MML displayed</p> <p>Limit switches with backup switches fitted/operational</p> <p>Access Ladder fitted with backrests/Fall arrest system installed</p> <p>Lifting tackle in good condition/inspection colour coding</p> <p>Lifting tackle checked daily</p>
*Mobile Crane	<p>Only operated by trained authorised operator with valid certificate of training</p> <p>Rear view mirrors</p> <p>Windscreen visibility good</p> <p>Windscreen wipers operating effectively</p>

	<p>Indicators operational  Hooter working  Tyres safe/sufficient tread/pressure visibly sufficient  No missing Wheel nuts  Headlights, taillights operational  Reverse alarm working and audible and known by all employees</p>
*Mobile Crane continued	<p>Grease nipples and grease on all joints  No Oil leaks  Hydraulic pipes visibly sound/no leaks  No corrosion on Battery terminals  Boom visibly in good condition/no apparent damage  Cable/sheaves greased/no visible damage/split wires/corrosion and checked daily  Brakes working properly  Crane hook: Throat pop marked/safety latch fitted/functional  SWL/MML displayed  By-pass valves operational  Deflection chart displayed/visible to operator/driver  Outriggers functional used</p>
*Gantry Crane	<p>Only operated by trained authorised persons  Correct slinging techniques used  Recognised/displayed on chart signals used  Log book kept/up to date  Prescribed inspections conducted on crane &amp; lifting tackle and checked daily  "Crane overhead" signage, where applicable  Crane hook: Throat pop marked/safety latch fitted/functional  SWL/MML displayed/load limiting switches fitted/operational</p>

#### 14.14 Builder's Hoist

Subject	Requirement
Builder's Hoist	<p><b>"Hoist In Operation"</b> - sign displayed.  General construction strong and free from patent defects.  <u>Tower:</u> * Adequately secured / braced.  * At least 900 mm available for over travel.  * Barricaded at least 2 100 mm high at ground level and floors.  * Landing place provided with gate at least 1 800 high.  <u>Platform:</u> * No persons conveyed on platform  * Steel wire ropes with breaking strength of six times max. load.  * Signal systems used which may include two way radio connection.  * Goods prevented from moving / falling off.  * Effective brake capable of stopping and holding max. load.</p>

#### 14.15 Transport & Materials Handling Equipment



Subject	Requirement
*Site Vehicles	All Site Vehicles, Dumpers, Bobcats, Loaders etc; checked daily before use by driver / operator. Inventory of vehicles used/operated on site Inspection by means of a checklist / results recorded. No persons riding on equipment not designed or designated for passengers. Site speed limit posted, enforced and not exceeded. Drivers / Operators trained / licensed and carrying proof. No unauthorised persons allowed to drive / operate equipment.
Conveyors	Conveyor belt nip points and drive gear guarded. Emergency stop/lever/brake fitted, clearly marked & accessible and tested to be functional under full load.

#### 14.16 Site Plant and Machinery

Subject	Requirement
Brick Cutting Machine	Operator Trained. Only authorised persons use the machine. Emergency stop switch clearly marked and accessible. Area around the machine dry and slip/trip free/clear of off-cuts All moving drive parts guarded/electrical supply cable protected Operator using correct PPE - eye/face/hearing/foot/hands/body.
*Electric Arc Welder	Welder Trained. Only authorised / trained persons use welder. Earth cable adequately earthed to work. Electrode holder in good condition/safe Cables, clamps & lugs/connectors in good condition. Area in which welding machine is used is dry/protected from wet. Welder using correct PPE - eye/ face/foot/body/respirator. Correct transparent screens & warning signs placed
*Woodworking Machines	Operators Trained. Only authorised persons use machines. Provided with guards. Guards used. Operators using correct PPE - eye/face/feet/hearing Circular saws strictly operated according to prescribed methods and settings Only prescribed saw blades (cross-cut, ripping blade, smooth cut, aluminium) shall be used for various applications
*Compressors	Relief valves correctly set and locked / sealed. Maximum Safe Working Pressure (MSWP) indicated on face of pressure gauge: not on glass cover. All drives adequately guarded. Receiver/lines drained daily Hoses good condition/clamped, not wired

	Compressed air NEITHER used to dust off clothing/PPE/ and work areas NOR on bare skin
Concrete Mixer / Batch Plant	Top platform provided with guardrails. Dust abatement methods in use. Operators using correct PPE - eye / hands / respirators. All moving drive parts guarded. Emergency stops identified / indicated and accessible. Area kept clean/dry/and free from tripping and slipping hazards. Operators overseer identified and crane signals displayed and used.
*Gas Welding / Flame Cutting Equipment	Only authorised/trained persons use the equipment. Torches and gauges in good condition. Flashback arrestors fitted at cylinders and gauges. Hoses in good condition/correct type/all connections with clamps Cylinders stored, used and transported in upright position, secured in trolley / cradle / to structure. All cylinders regularly checked for leaks, leaking cylinders returned immediately Fire prevention/control methods applied/hot work permits

## 14.17 Plant &amp; Storage Yards/Site Workshops Specifics

Subject	Requirements
Section 8(2)(1) General Machinery Regulation 2(1): <b>Supervision of the Use &amp; Maintenance of Machinery</b>	Person/s with specific knowledge and experience designated in writing to Supervise the Use & Maintenance of Machinery Critical items of Machinery identified/numbered/placed on register/inventory Inspection/maintenance schedules for abovementioned Inspections/maintenance carried out to above schedules Results recorded
General Machinery Regulation 9(2): <b>Notices re. Operation of Machinery</b>	Schedule D Notice posted in Work areas
Pressure Equipment Regulation 13(1)(b): <b>Supervision of the Use &amp; Maintenance of Vessels under Pressure (VuP)</b>	Person/s with specific knowledge and experience designated in writing to Supervise the Use & Maintenance of VuP's VuP's identified/numbered/placed on register/Manufacturers plate intact Inspection/maintenance schedules for abovementioned Inspections/maintenance carried out to above schedules Results recorded/Test certificates available
Lock-out Procedure	Lock-out procedure in operation
Ergonomics	Ergonomics survey conducted – results on record Survey results applied
Demarcation & Colour Coding	Demarcation principles applied All services, pipes, electrical installation, stop-start controls, emergency controls etc. colour coded to own published or SABS standard

	Employees trained to identify colour coding
<b>Portable &amp; Bench Grinders</b>	Area around grinder clear/trip/slip free Bench grinders mounted securely/grinder generally in good condition/No excessive vibration On/Off switch/button clearly demarcated/accessible Adequate guards in place Tool rest – secure/square/max. 2 mm gap, perpendicular to drive shaft Stone/disk - correct type and size/mounted correctly/dressed Use of Eye protection enforced
<b>Battery Storage &amp; Charging</b>	Adequately ventilated, ignition free room/area/no smoking sign/s Batteries placed on rubber/wooden surface Emergency shower/eye wash provided No acid storage in area Prescribed methods in place and adhered to when charging batteries
<b>Ancillary Lifting Equipment</b>	Chain Blocks/Tirfors/jacks/mobile gantries etc. identified/ numbered on register Chains in good condition/links no excessive wear/checked daily Lifting hooks – throat pop marked/safety latch fitted SWL/MML marked/displayed
<b>Presses/Guillotines/Shears</b>	Only operated by trained/authorised persons Interlocks/lock-outs fitted/PPE worn or used at all times

#### 14.18 Workplace Environment, Health and Hygiene

<b>Subject</b>	<b>Requirement</b>
*Lighting	Adequate lighting in places where work is being executed e.g. stairwells and basements. Light fittings placed / installed causing no irritating/blinding glare. Stroboscopic effect eliminated (not only reduced) where moving objects or machinery is used
*Ventilation	Adequate ventilation / extraction / exhausting in hazardous areas e.g. chemicals / adhesives / welding / petrol or diesel/ motors running and in confined spaces / basements.
*Noise	Tasks identified where noise levels exceeds 85 dB at any one time. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dB.
*Heat Stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30. (See Environmental Regulation 4) Cold drinking water readily available at all times.
*Ablutions	Sufficient hygiene facilities provided - 1 toilet per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites) Toilet paper available.

	<p>Sufficient showers provided.  Facilities for washing hands provided  Soap/cleaning agent available for washing hands  Means of drying hands available  Lock-up changing facilities / area provided.  Ablution facilities kept hygienic and clean.</p>
*Eating / Cooking Facilities	<p>Adequate storage facilities provided.  Weather protected eating area provided, separate from changing area  Refuse bins with lids provided.  Facilities kept clean and hygienic.</p>
*Pollution of Environment	<p>Measures in place to minimize dust generation.  Accumulation or littering of empty cement pockets, plastic wrapping / bags, packing materials etc. prevented.  Spillage / discarding of oil, chemicals and diesel into storm water and other drains or into existing or newly dug holes/cavities on site expressly prohibited.</p>
*Hazardous Chemical Substances	<p>All substances identified and list available e.g. acids, flammables, poisons etc.  Material Safety Data Sheets (MSDS) indicating hazardous properties and emergency procedures in case of incident on file and readily available.  Substances stored safely.  Expiry dates meticulously checked where applicable</p>

## 15. THE PRINCIPAL CONTRACTOR'S GENERAL DUTIES

The Principal Contractor shall at all times ensure his status of an “employer” as referred to in the Act, and will abide by his/her responsibilities, duties and functions as per the requirements of the Act and Regulations with specific reference to Section 8 of the Act.

The Principal Contractor shall keep, and on demand make available, a copy of the Act on site at all times and in addition to that he/she will introduce and maintain a file titled “Health and Safety File”, or other record in permanent form, which shall contain all relevant aspects and information as contemplated in the Construction Regulations. He/she will make this file available to the client or his representative whenever necessary or on request to an interested party.

## 16. THE PRINCIPAL CONTRACTOR'S SPECIFIC DUTIES

The Principal Contractor's specific duties in terms of these specifications are detailed in the Construction Regulations as published under government notice No.R84 in GG 37305 of 7 February 2014.

The Principal Contractor is specifically referred to the following elements of the Construction Regulations:

- |                   |  |
|-------------------|--|
| Regulation No. 1  | - Definitions                              |
| Regulation No. 2  | - Scope of application                     |
| Regulation No. 4  | - Notification of construction work        |
| Regulation No. 7  | - Principal Contractor and Contractor      |
| Regulation No. 8  | - Supervision of construction work         |
| Regulation No. 9  | - Risk Assessment                          |
| Regulation No. 28 | - Stacking & Storage on construction sites |
| Regulation No. 30 | - Construction welfare facilities          |
| Regulation No. 32 | - Approved Inspection authorities          |
| Regulation No. 33 | - Offences and penalties                   |

This list must not be taken to be exclusive or exhaustive!

The Principal Contractor shall ensure compliance to the Act and its Regulations and specifically to the above regulations, and document each record in the Health and Safety File.

## **17. THE PRINCIPAL CONTRACTOR'S SPECIFIC RESPONSIBILITIES WITH REGARD TO HAZARDOUS ACTIVITIES**

The following activities are identifiable as hazardous in terms of the Construction Regulations.

The contractor shall execute the activities in accordance with the following Construction Regulations and other applicable regulations of the Act:

- |                   |                             |
|-------------------|-----------------------------|
| Regulation No. 10 | - Fall protection           |
| Regulation No. 11 | - Structures                |
| Regulation No. 12 | - Formwork and support work |
| Regulation No. 13 | - Excavation work           |
| Regulation No. 14 | - Demolition work           |
| Regulation No. 15 | - Tunneling                 |
| Regulation No. 16 | - Scaffolding               |
| Regulation No. 17 | - Suspended platforms       |

- |                            |  |
|----------------------------|--|
| Regulation No. 18          | - Rope Access Work   |
| Regulation No.19           | - Material hoists  |
| Regulation No. 20          | - Batch plants   |
| Regulation No. 21          | - Explosive powered tools  |
| Regulation No. 22          | - Cranes   |
| Regulation No. 23          | - Construction vehicles & mobile plant.                                |
| Regulation No. 24<br>sites | - Electrical installations and machinery on construction sites         |
| Regulation No. 25          | - Use and temporary storage of flammable liquids on construction sites |
| Regulation No. 26          | - Water environments   |
| Regulation No. 27          | - Housekeeping on construction sites                                   |
| Regulation No. 29          | - Fire precautions on construction sites.                              |

This list must not be taken to be exclusive or exhaustive!

All of the above requirements will be read in conjunction with the relevant regulations and health and safety standards as required by the Act. All documents and records required by the Construction Regulations will be kept in the Health and Safety File and will be made available at any time when required by the client or his representative, or on request to an interested party.

## **18. GENERAL NOTES TO THE PRINCIPAL CONTRACTOR**

### **Legal Framework**

Part of legal obligations

The more important Acts and relevant subordinate/secondary legislation as well as other (inter alia Local Government) legislation that also apply to the State as well as to State owned buildings and premises: -

- (i) The latest issue of SABS 0142: "Code of Practice for the Wiring of Premises"
- (ii) The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority
- (iii) The Fire Brigade Services Act 1987, Act 99 of 1987 as amended

- (iv) The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as amended and relevant proclaimed Regulations (SABS 0400)
- (v) The Post Office Act 1958 (Act 44 of 1958) as amended
- (vi) The Electricity Act 1984, Act 41 of 1984
- (vii) The Regulations of Local Gas Board(s), including Publications of the SABS Standards and Codes of Practice, with specific reference to GNR 17468 dated 4<sup>th</sup> October 1997
- (viii) Legislation pertaining to water usage and the environment
- (ix) Legislation governing the use of equipment, which may emit radiation (e.g. X-Rays etc.)
- (x) Common Law

## Legal Liabilities

Common Law and Legislation

Based on two main criteria –

- Would the reasonable person have foreseen the hazard?  
**That is a reasonable person in that specific position, taking experience, qualifications, authority, position in the organization etc. into consideration**
- Would the reasonable person have taken precautionary measures (action) to prevent or limit the hazard?

Negligence can be proven on failure on **any** or **both** of the above criteria  
(There may not necessarily be a relationship between criminal and civil liability!)

## 19. HOUSE KEEPING

Good housekeeping will be maintained at all times as per Construction Regulation No. 27. Poor housekeeping contributes to three major problems, namely, costly or increased accidents, fire or fire hazards and reduction in production. Good housekeeping will enhance production time.

Particular emphasis is to be placed on the following crucial elements of a construction site:

- Phase priorities and production/plant layout
- Enclosures
- Pits, openings and shoring
- Storage facilities

- Effective, sufficient and maintained lighting or illumination
- Principal sources of injuries e.g. stairways, runways, ramps, loose building material
- Oil, grease, water, waste, rubble, glass, storm water
- Colour coding
- Demarcations
- Pollution
- Waste disposal
- Ablution and hygiene facilities
- First aid

This list must not be taken to be exclusive or exhaustive!

In promotion of environmental control all waste, rubble, scrap etc, will be disposed of at a registered dump site and records will be maintained. Where it is found to be impractical to use a registered dump site or it is not available, the Principal Contractor will ensure that the matter is brought to record with the client or his representative, after which suitable, acceptable alternatives will be sought and applied.

Dross and refuse from metals, and waste matters or by-products whose nature is such that they are poisonous or capable of fermentation, putrefaction or constituting a nuisance shall be treated or disposed of by methods approved of by an inspector.

NOTE: No employer (Principal Contractor) shall require or permit any person to work at night or after hours unless there is adequate, suitable artificial lighting including support services in respect of Health and Safety.

## **20. LOCKOUT SYSTEMS - ELECTRICAL!**

A system of control shall be established in order that no unauthorized person can energize a circuit, open a valve, or activate a machine on which people are working or doing maintenance, even if equipment, plant or machinery is out of commission for any period, thus eliminating injuries and damage to people and equipment as far as is reasonably practicable.

Physical/mechanical lock-out systems shall be part of the safety system and included in training. Lockouts shall be tagged and the system tested before commencing with any work or repairs.

## **21. INCIDENT INVESTIGATION**



Inspection and reporting is the best way in which a responsible contractor can control his area of responsibility. All incidents therefore, irrespective of whether it gave rise to loss, injury, damage or not, shall be investigated and the results recorded in the Health and Safety File. (GAR 9)

## 22. GENERAL

The project under control of the Principal Contractor shall be subject to periodic health and safety audits that will be conducted by the client at intervals agreed upon between the Principal Contractor and the client, provided such intervals will not exceed periods of one month. The Principal Contractor is to ensure that he/she and all persons under his control on the construction site shall adhere to the above specifications, as non-conformance will lead to the client taking action as directed by Construction Regulation 5.1(q). The Principal Contractor should note that he/she shall be held liable for any anomalies including costs and resulting deficiencies due to delays caused by non-conformance and/or non-compliance to the above Health and Safety Specifications and the Health and Safety Plan based on these specifications.

## 23. IMPORTANT LISTS AND RECORDS TO BE KEPT

The following are lists of several records that are to be kept in terms of the Construction Regulations. The lists are:

- 1 List of appointments
- 2 List of record keeping responsibilities
- 3 Inspection checklist

These lists and documents are to be used as a point of reference to determine which components of the Act would be applicable to a particular site or task or project, as was intended under paragraph 1 (“Preamble”) above.

### LIST OF APPOINTMENTS

Item	Regulation	Appointment	Responsible Person
1.	5(1)(k)	Principal contractor for each phase or project	Client
2.	7(1)©	Contractor	Principal Contractor
3.	8 (1)	Construction Manager	Contractor
4.	8(2)	Assistance Construction Manager	Contractor
5.	8(5)	Health and Safety Officer	Contractor
6.	8(7)	Construction supervisor	Contractor

7.	9(1)	Person to carry out risk assessment	Contractor
8.	10(1)(a)	Fall protection planner	Contractor
9.	11(2)(a)	Structure Inspector	
10.	12(1)	Temporary Work Designer	Contractor
11.	13(1)	Excavation Supervisor	Contractor
12.	14(1)	Supervisor Demolition Work	Contractor
13.	16(1)	Scaffold Supervisor	Contractor
14.	17(1)	Suspended Platform Supervisor	Contractor
15.	18(1)(a)	Rope Access Supervisor	Contractor
16.	19(8)(a)	Material Hoist Inspector	Contractor
17.	20(1)	Batch Plant Supervisor	Contractor
18.	21(1)	Person to control and do the issuing and collection of cartridges and nails/studs	Contractor
19.	23(1)(k)	Construction Vehicle and mobile plants inspector	Contractor
32.	24 (c)	Temporary electrical installations controller	Contractor
33.	28 (a)	Stacking and storage supervisor	Contractor
34.	29 (h)	Fire equipment inspector	Contractor

### 23.2 LIST OF RECORD KEEPING RESPONSIBILITIES

<i>ITEM</i>	<i>CR</i>	<i>RECORD TO BE KEPT</i>	<b>RESPONSIBLE PERSON</b>
1.	4(1)	Notification to Provincial Director – Annexure A Available on site	Principal Contractor
2.	7(1)	Copy of Principal Contractor's Health & Safety Plan Available on request	Client
3.	7(1)	Copy of Principal Contractor's Health & Safety Plan As well as each Contractor's Health & Safety Plan Available on request	Principal Contractor
4.	7(1)(b)	Health and Safety File opened and kept on site (including all documentation required in the. OHS&A & Regulations Available on request	Every Contractor
5.	7(1)(b)	Consolidated Health and Safety File handed to Client on completion of Construction work. To include all documentation required i.t.o. OHS&A & Regulations and records of all drawings, designs,	Principal Contractor

		materials used and similar information on the structure	
6.	7(1)(i-g)	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done Included in Health and Safety file and available on request	Principal Contractor
7.	7(1)(b)	Keep record on the Health and Safety File of the input by Construction Safety Officer [CR 8 (5)(a)] at design stage or on the Health and Safety Plan	Contractor
8.	9(1)	Risk Assessment - Available on site for inspection	Contractor
9.	7 (7 )	Proof of Health and Safety Induction Training	Every Employee on site
10.	10(3)	Construction Supervisor [CR 8(7)] has latest updated version of Fall Protection Plan [CR 10(b)]	Contractor
11.	6(1)(d)	Inform client and contractor in writing of dangers and hazards relating to construction work	Designer of Structure
12.	11(1)©	All drawings pertaining to the design of structure On site available for inspection	Contractor
13.	11(2)(b)	Record of inspections of the structure [First 2 years – once every 6 months, thereafter yearly] - Available on request	Owner of Structure
14.	11(2)(d)	Maintenance records - safety of structure - Available on request	Owner of Structure
15.	12(d)	Drawings pertaining to the design of temporary work - Kept on site, available on request	Contractor
16.	13(2)(h)	Record of excavation inspection - On site available on request	Contractor
17.	17(11)	Suspended Platform inspection and performance test records Kept on site available, on request	Contractor
18.	19(8)(a)	Material Hoist daily inspection entered and signed in record book kept on the premises	Contractor
19.	19(8)(d)	Maintenance records for Material Hoist - Available on site	Contractor
20.	21(8)	Records of Bulk Mixing Plant maintenance and repairs On site available for inspection	Contractor
21.	21(2)(g)(ii)	Issuing and collection of cartridges and nails or studs (Explosive Powered Tools) recorded in register – recipient signed for receipt as well as return	Contractor
22.	23(1)(k)	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Contractor

23.	24(e)	Record of temporary electrical installation inspections [once a week] and electrical machinery [daily before use] in a register and kept on site	Contractor
24.	29(l)	Fire Evacuation Plan	Contractor

### 23.3 INSPECTION CHECKLIST

<b>Employer Particulars</b>	
Employer:	
Registered Name of Enterprise:	
Trade Name of Enterprise:	
Company Registration No.:	
SARS Registration No.:	
UIF Registration No.:	
COIDA Registration No.:	
Relevant SETA for EEA purposes:	
Industry Sector:	
Bargaining Council:	
Contact Person:	
Address of Premises:	
Postal Address:	
Telephone Number:	
Fax Number:	
E-mail Address:	
Chief Executive Officer:	
Chief Executive Officer Address:	
Competent Person:	
Maximum power demand: in KW	
Health and Safety Representatives:	
Activities, products manufactured and/ services rendered:	
Raw materials, materials and chemical/ biological substances:	
Total Number of Employees:	Male: Female:

<b>Contractor Particulars</b>	
Contractors:	

Site Address:	
Contracts Manager:	
Managing Director:	
Competent Persons:	
CR16(1): SCAFFOLDING:	
CR17(1): SUSPENDED SCAFFOLDING:	
CR19(8)(a): MATERIAL HOIST (S):	
CR20(1): BATCH PLANT:	
CR10(1)(a): FALL PROTECTION:	
CR13(1)(a): EXCAVATION WORK:	
CR14(1): DEMOLITION WORK:	
CR21(1)(g)(i): EXPLOSIVE ACTUATED FASTENING DEVICE	
CR28(a): STACKING	

INSPECTION		N/A	YES	NO
SECTION/REGS	ITEM CHECKED			
	<b>APPOINTMENTS</b>			
CR8(1)	Supervisor:			
CR8(2)	Assistant Supervisor:			
S17(1)	Health & Safety Representative: (ratio)			
S19(1)	Health & Safety Committees			
CR 14(1)	Demolition Director			
	<b>DOCUMENTS</b>			
GAR 9(1)	Records of Incidents			
GAR 4	Copy of the Act			
GAR 7	Safety Reps Report			
GAR 8	Safety Committee Minutes			
DMR 18(7)	Lifting Machinery Log (Crane)			
CR 4(3)	Notification of Construction Work			
CR 7(2)	Risk Assessment			
CR 7(7)	Proof of the Health & Safety Induction Training			
CR 13(h)	Inspection of Excavation (Records)			
CR 22(f)	Crane Operator Medical Certificate			
CR 23(1)(d)(ii)	Mobile Plant Operator Medical Certificate			
CR 20(8)	Batch Plant Repairs & Maintenance Records			
CR24(c)	Temporary Electrical Installation Record			
CR 7(2)(b)	Health & Safety File			

CR 17(11)	Suspended Platforms' Performance Records			
CR 19 (c )	Material Hoists Record Book			
IMPROV NOTICE	Scaffolding Log Book			
CR 23(1)(d)(ii)	Medical Certificate of Fitness			
CR 23(1)(k)	Construction Vehicle & Mobile Plant Register			
CR 24(e)	Electrical Installation & Machinery Register			
	<b>INCIDENTS</b>			
GAR 8(1) S24	Reported			
GAR 9(1)	Recorded Investigated Action Taken			
	<b>PUBLIC SITE</b>			
FR 2(1)	Sanitary Facilities			
CR 30(1) (c)	Changing Facilities for each sex			
CR 27(f)	Perimeter fence & no admittance			
CR 27(d)	Overhead protection netting/falling objects			
NB Notice	Pedestrian warning			
	<b>PERSONAL SAFETY EQUIPMENT</b>			
	Items Issued:			
GSR 2(3)	Items Required:			
S23	(What is the payment on each item?)			
	<b>SAFETY PLANS</b>			
	FIRST AID			
GSR 3(6)	Name(s) of First Aider(s):			
CR 5(1)(b)	Client's Health & Safety Specification			
CR7(1)	Principal's contractor H&S Plan			
	<b>FIRE HAZARD &amp; PRECAUTIONS</b>			
GSR 4	Flammables used, waste, hot work, diesel, fuel, gas			
ER 9(1)	Portable Extinguishers			
	<b>ELECTRICAL INSTALLATIONS &amp; MACHINERY</b>			
CR22	Guarding & PPE to Electrical Installations			
	<b>ILLUMINATION</b>			
ER 3(6)	Dangerous Places and signage as well			
	Housekeeping			
ER6(2)(b),(c),(d)	Clear space storage			
ER6(3)	Disposal of waste			
	<b>EXCAVATIONS</b>			
CR 13(2)(i)	Barricades (plus illumination!)			

CR 13(2)(d)	Safe Depth Shoring/Bracing			
CR 13(2)(h)	Monitored			
CR 13(2)(h)	Excavation Inspection Record			
	<b>GUARDING</b>			
ER 6(2)(f)	Floor Openings (plus illumination!)			
	Floor slab sides, Shafts (plus illumination!)			
	<b>SITE EQUIPMENT</b>			
GSR 13A(a)	Ladders condition, secured			
IMPROV	Scaffold condition, secured			
	Platforms no. of boards condition Support 1.25. Toe Boards			
IMPROV	Hand Rails			
	<b>SITE MACHINES</b>			
DMR 3(2)(3)	Circulars, guards, riving knives			
DMR 2(a)	Mixers guarded			
	<b>ELECTRIC POWER</b>			
EMR 6(1)	Supply Board, condition E.L Relay Test			
GMR 3(1)	Condition of Tools, Leads, Plugs, etc			
	<b>LIFTING MACHINE/TACKLE</b>			
DMR 18(8)	Lifting of persons			
DMR 18(8)	Condition, Securing of Load			
	<b>EXPLOSIVE POWERED TOOLS</b>			
CR 19(1)	Safe Use and Storage			
IMPROV	Warning Notice			
	<b>ROOF WORK</b>			
CR 10(5)(f)	Safety equipment & precautions			
CR 10(2)	Fall protection plan			
CR 10(3)	Updated fall protection plan			
	<b>ASBESTOS CEMENT</b>			
AR 10(a)	Suitable Tools			

**WARNING: Under no circumstances shall any work of any nature whatsoever on any ASBESTOS material be undertaken unless the work is entrusted and mandated to a “REGISTERED ASBESTOS CONTRACTOR” in terms of the Asbestos Regulations. [CR 12(9)] (Contact the Regional Manager’s Office)**

**NOTE:**

The guidelines and conditions provided in this attached document form an integral constituent of the Health and Safety Specifications. It is therefore a condition of acceptance that no Health and Safety Plan shall be complete unless all relevant elements of this document applicable to the above project have been included in the Health and Safety Plan.

*I hereby certify that I fully understand the contents of this Health and Safety Specification and the consequences of no-compliance.*

Signed at .....on the.....Day of .....20.....

Name .....Signature.....

**PB:            ENVIRONMENTAL MANAGEMENT PROGRAMME**

Refer to Annexure D (to be emailed on Request).



**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**

“Dayworks 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 m<sup>2</sup> 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: m<sup>2</sup>

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: m<sup>3</sup>

“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: m<sup>2</sup>

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: m<sup>3</sup>

“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 Water stops**

Water stops 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 water stops 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, water stops 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 <sup>3</sup> 110	DIN 53420
Compression Stress at compression strains of	kPa	DIN 53577
10%	175	DIN 53577
25%	210	DIN 53577
50%	340	DIN 53577
Compression set after 24 hours recovery	% 14	
Tensile Strength	kPa 680	DIN 53571
Elongation at Break	% 49	DIN 53571
Max. water absorption after 24 hours by volume	% 0,1	ASTM C-177

Fillers shall be pre-cut to suit the application with a tear-out strip for forming the specified recess for the sealant. If so required the filler shall be glued into position with approved epoxy glue.

**PSG 3.11.4 Bond breakers, primers and sealants**

The bond breaker (if specified) shall be self-adhesive PVC tape (or equal, approved material) with a width the same as the joint recess into which it is to be applied.

The primer, if required for the sealant, shall be fully compatible with the sealing compound that is to be used.

The elastomeric sealant shall be either a two-component polysulphide liquid polymer base complying with the requirements of SANS 110 or a polyethylene based polyurethane "pouring grade" for horizontal or near horizontal joints or "gun grade" for vertical/overhead joints and joints steeper than 1 in 10 to the horizontal. All elastomeric sealants shall comply with BS 4254 Type A1 and shall have a movement tolerance of 25%.

**PSG 3.12 Precast paving slabs**

The paving slabs shall comply with the requirements of SANS 541, shall be as scheduled and with patterned surface, or equal approved. Samples of the types which the Contractor proposes to use shall be submitted for approval prior to construction.

**PSG 4: PLANT**

**PSG 4.3 Mixing plant**

**PSG 4.3.1 General Requirement for Mixing Plant**

Add the following to this Sub-clause:

Stand-by mixers of adequate capacity and with an independent power unit shall be maintained on site for immediate use in the event of breakdown of the regular mixers failure of the power supply.



**PSG 4.4          Vibrators**

Add the following to this Sub-clause:

Stand-by vibrators of adequate capacity and with an independent power unit shall be maintained on site for immediate use in the event of breakdown of the regular vibrator failure of the power supply.

Vibrators for in-situ concrete shall be of the internal or immersion type.

**PSG 4.5          Formwork**

**PSG 4.5.3        Ties**

Add the following to this Sub-clause:

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

For Watertight concrete structures the shutters shall be fastened using an approved imbedded fastening system. Open ferrules will not be permitted.

Add the following Clause:

**PSG 4.6          Water-bath**

A temperature-controlled water-bath with a capacity to cure two hundred cubes shall be provided on site. The water-bath shall be located under cover.

**PSG 5            CONSTRUCTION**

**PSG 5.1          Reinforcing**

**PSG 5.1.2        Fixing**

Add the following to this Sub-clause:

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

blocks for the attachment of fixtures may be embedded in concrete provided that the strength or any other desirable feature (such as appearance of the member) is not, in the opinion of the Engineer, impaired thereby.

Supports shall be of approved precast concrete blocks properly shaped to maintain position or proprietary supports of an approved type. Concrete blocks shall be adequately cured as specified. Wooden supports shall not be used nor shall bars be placed in succeeding layers of fresh concrete nor shall bars be adjusted during the placing of concrete. Tie-wire shall point away from the nearest formwork face.

Where clips, stools and other supports are not shown on the drawings and are structurally not required, the Contractor shall provide those supports he deems necessary to ensure the correct positioning of the reinforcement, to the satisfaction of the Engineer. The cost of such steel, labour, and other fixing materials shall be

inclusive in the rate for the scheduled reinforcement and no additional payment shall be made.

**PSG 5.2 Formwork**

**PSG 5.2.1 Classification of finishes**

Add the following to this Sub-clause:

Rough formwork Degree of Accuracy III may be used on the outside faces where the concrete is more than 500 mm below the final ground level.

Smooth formwork Degree of Accuracy II will be used elsewhere.

Where specified special finishes shall be to Degree of Accuracy I

**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/m<sup>3</sup> and 450 kg/m<sup>3</sup> respectively shall be used. For concrete containing extenders the maximum cement content shall be 450 kg/m<sup>3</sup>. 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  $75 \pm 25$ 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 pre-stressed reservoir. These joints shall only be permitted radially on each side of stressing buttresses. No vertical joints shall be permitted in the reinforced concrete reservoir.

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/m<sup>2</sup> 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.

**PSG 5.5.14 Defects**

Add the following to this Sub-clause:

All defects shall be repaired as soon as possible after the formwork has been removed and the Engineer has inspected the concrete. A statement of the method to be used for each repair shall be submitted to the Engineer for his approval before any work is carried out. The Engineer may prohibit the further placing of concrete in the particular area concerned until he is satisfied that the repair has been satisfactorily executed.

Add the following sub-clauses:

**PSG 5.5.16 Casting pipes and specials in concrete**

Where the pipe or special is supplied by others the Contractor may elect to provide a box-out in the wall and cast the unit in at a later stage. When constructing such box-outs reinforcement shall not be cut but shall run through the opening. Reinforcement shall be cut and/or bent out at a later stage to suit the item being cast in. After installation of the item the remaining reinforcement shall be bent back in position.

Where entry holes for pipes/specials have been provided in the walls, the Contractor shall be responsible for the concreting in of such pipes/specials regardless of whether or not these have been supplied by himself.

Before commencing the positioning in holes of any pipes/specials the Contractor shall:

remove all formwork and boxing remaining in the holes;

make any alternations required to the position and shape of the holes and cut reinforcement to suit the item, as directed by the Engineer; and

thoroughly scabble the sides of the holes so as to obtain a satisfactory bond surface for the new concrete and treat the surface as specified in Sub-clause 5.5.7.3, as amended.

Immediately prior to the placing of mortar and concrete around the pipes, the surface of the existing concrete shall be saturated with water. All surplus water shall be removed and the surface covered with a layer, approximately 12 mm thick, of mortar made of the same mix as the concrete in which the pipes/specials are to be placed.

The concrete ingredients shall be mixed and placed as dry as possible to obtain a dense, waterproof concrete. The concrete shall be carefully worked around the

puddle flange, if any, and the pipe barrel or body of the special, and shall be vibrated in layers so as to obviate a falling away from pipe/special surfaces of the concrete already placed. The whole shall, when set, form a dense, homogeneous, and waterproof mass.

**PSG 5.5.17 Precast paving slabs**

The area to be paved shall be compacted to a minimum of 93% Mod AASSHTO density (100% for sand), trimmed and then treated with an approved 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 m<sup>3</sup> 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 m<sup>2</sup> for every 10 m<sup>2</sup> exposed. The average cover of the 1 m<sup>2</sup> 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 m<sup>3</sup> 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 m<sup>3</sup> (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 m<sup>2</sup> 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

Table PSG 7.3.6.2 Chloride Conductivity (severe to very severe conditions)								
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

Table 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 50m<sup>3</sup> 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	$\geq 10$ (log scale)
Chloride conductivity index	$\leq 0.6$ m.sec/cm
Water Sorptivity	$\leq 8$ 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 ( $\leq 5$ 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%
	$\geq 15$	0%	$\geq 15$	0%

**Table PSG 7.3.10.2 Oxygen Permeability**

TEST	Coastal ( $\leq 5$ 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%
	$\leq 8.75$	0%	$\leq 9.0$	0%

**Table PSG 7.3.10.3 Concrete Cover**

TEST	Coastal ( $\leq 5$ 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 %
	$< 25$ or $> 40$	0 %	$< 20$ or $> 40$	0 %
40 mm specified	$\geq 40 \leq 50$	100 %	$\geq 40 \leq 50$	100 %
	$\geq 35 < 40$	40 %	$\geq 30 < 40$	40 %
	$< 35$ or $> 50$	0 %	$< 30$ or $> 50$	0 %
50 mm specified	$\geq 50 \leq 60$	100 %	$\geq 50 \leq 60$	100 %
	$\geq 45 < 50$	40 %	$\geq 40 < 50$	40 %
	$< 45$ or $> 60$	0 %	$< 40$ or $> 60$	0 %
60 mm specified	$\geq 60 \leq 70$	100 %	$\geq 60 \leq 70$	100 %
	$\geq 55 < 60$	40 %	$\geq 50 < 60$	40 %
	$< 55$ or $> 70$	0 %	$< 50$ 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 or > 75	0 %	< 55 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 or > 85	0 %	<65 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 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 m<sup>2</sup> 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: m<sup>2</sup>**

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: m<sup>2</sup>**

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: m<sup>2</sup>**

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: m<sup>2</sup>**

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: m<sup>2</sup>**

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: m<sup>3</sup>**

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 are effectively and rigidly held in position during casting including the certification and all as detailed on the drawings. Repairs for leaking cast in items will not be paid for.

**PSG 8.12      Granolithic screeds      Unit: m<sup>2</sup>**

Special floor finish will be measured by area. The rate shall cover the cost of the supply and application of the specified material, complete as specified by the manufacturer and to the approval of the Engineer. Repairs to unsatisfactory work will not be paid for.

Measurement of granolithic screeds will be by the surface area covered.

The unit rate or lump sum shall cover the cost of all materials, labour and equipment required to provide the screed as specified in Sub-clause PSG 5.5.10.4, as amended, Granolithic screeds. The rate shall include the steel float finish.

**PSG 8.13      Precast paving slabs      Unit: m<sup>2</sup>**

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: m<sup>3</sup>**

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: m<sup>2</sup>**

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.

No 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 EXISTING 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 cone 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 utilised for haulage

**C3.8.10 Spreading**

All material shall be spread by hand.

**C3.8.11 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.

## ENVIRONMENTAL SPECIFICATION



**O.R. TAMBO  
DISTRICT MUNICIPALITY**

**VOLUME 1**

**CONTRACT**

**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.

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SI.2

*Contractor*

*Witness 1*

*Witness 2*

*Employer*

*Witness 1*

*Witness 2*