

# HARRY GWALA DISTRICT MUNICIPALITY



## KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, WATER TREATMENT PACKAGE  
PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

**CONTRACT NO: HGDM 774/HGDM/2021**

### TENDER DOCUMENT

**CIDB CONTRACTOR GRADING  
7CE OR HIGHER**

**COMPILED BY:**

BM JV Rudkor Consulting  
No. 48 Flamingo Drive  
Southernwood, Mthatha  
5099  
Telephone: 047 531 0424  
Fax: 047 531 0409  
Email: [info@bmengineers.co.za](mailto:info@bmengineers.co.za)

**ON BEHALF OF:**

Harry Gwala District Municipality  
Private Bag X 501  
IXOPO  
3276  
Tel N°: +27 39 834 8700  
Fax N°: +27 39 834 2259

**JULY 2022**

NAME OF TENDERER	
ADDRESS OF TENDERER	
TELEPHONE	
FAX	
TENDER SUM	

**TENDER CLOSING DATE: 17 August 2022, 12h00**



**EXPANDED PUBLIC WORKS PROGRAMME**  
Creating opportunities towards human fulfillment

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
HGDM 774/HGDM/2021**

**TENDER DOCUMENT CHECKLIST**

Tenderers must complete this document checklist to ensure that all information is completed in the Tender Document.

ITEMS		CHECKED Tenderer
1)	Correct Tender Offer Amount carried forward to Cover Page and Form of Offer on Section C.1.....	<input type="checkbox"/>
2)	All pages requiring signatures signed by the Tenderer .....	<input type="checkbox"/>
3)	Bill of Quantities	
	i) Completed in <b>BLACK INK</b> only .....	<input type="checkbox"/>
	ii) Corrections crossed out and initialled.....	<input type="checkbox"/>
4)	Submission of All Returnable Documents and Schedules	
	A Authority for Signatory.....	<input type="checkbox"/>
	B CIDB Registration Certificate.....	<input type="checkbox"/>
	C Schedule of work carried out by Tenderer.....	<input type="checkbox"/>
	D Amendments, Qualifications and Alternatives.....	<input type="checkbox"/>
	E Tax Clearance Certificate.....	<input type="checkbox"/>
	F Compulsory Enterprise Questionnaire.....	<input type="checkbox"/>
	G Goal Declaration.....	<input type="checkbox"/>
	H Key Personnel .....	<input type="checkbox"/>
	I Contractor's Health and Safety Declaration.....	<input type="checkbox"/>
5)	J Data to be provided by Tenderer.....	<input type="checkbox"/>

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T1.2	Tender Data	Pink	TD 4
T2.1	Returnable Documents and Schedules	Yellow	RD 1
T2.2	List of Returnable Documents and Schedules	Yellow	RD 2-RD56
<b>PART C1: AGREEMENTS AND CONTRACT DATA</b>			<b>CD1</b>
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**PART T1: TENDERING PROCEDURES**

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## T1.1: TENDERING NOTICE AND INVITATION TO TENDER



### KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)

CONTRACT NO: HGDM 774/HGDM/2021

### CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

#### BID NOTICE

#### BID INVITATION

Bids are hereby invited, from qualified and experienced Bidders, for the construction of the following Infrastructure projects within the Harry Gwala District municipality

PROJECT NAME	CIDB GRADING	COMPULSORY BRIEFING DATE	TENDER NUMBER	CLOSING DATE
<b>KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE.</b> CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, WATER TREATMENT PACKAGE PLANT AND RETICULATION AT MPUMULWANE.	7CE OR HIGHER	28 July 2022 at 10:30am Bidders are to meet in Dr Nkosazana Dlamini – Zuma Local Municipality offices in Creighton then proceed to site.	Contract No. HGDM 774/HGDM/2021	17 August 2022 @ 12h00

Only Bidders that have the required CIDB Grading listed on the table above per project. Joint Ventures are also eligible to submit Bids provided that every member of the Joint Venture is registered with CIDB and a combined grade of Joint Venture calculated in accordance with the CIDB regulations is equal to or higher than the specified Contractor grading

#### **Invalid or non-submission of the following documents will lead to the disqualification**

- Central Supplier Database registration;
- JV Agreement (if applicable)
- A signed MBD4 form must be submitted with all bids (attached in the document).

#### **The following will apply in all the above bids:**

- SARS pin
- Price(s) quoted must be firm and must be inclusive of VAT;
- A firm delivery period must be indicated;
- All tenders must be valid for 90 days after the tender closing date
- A certified and valid B-BBEE status level verification certificate or an original sworn affidavit for claiming preference points.
- 80/20 Preference point system will be used in Evaluation. Functionality will be calculated first.

**HARRY GWALA DISTRICT MUNICIPALITY**

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MPUMULWANE VILLAGE  
CONTRACT No.: HGDM 774/HGDM/2021**

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**COLLECTION OF BID DOCUMENTS**

Bid documents may be collected from the **20 July 2022** between **09h00 to 16h00** at Harry Gwala District Municipality Offices, Finance Services Department, situated at Ixopo 40 Main Street, Ixopo 3276. Tender documents will be issued upon payment of a non-refundable cash fee of **R 500 .00 each**.

**NB: No documents will be sold after briefing meetings.**

**CLOSING DATE**

The closing date for the bids is as per the table above. Bids must be enclosed in **SEALED ENVELOPES** and clearly labelled with the contract number and project name on the outside of the envelopes addressed to **The Municipal Manager**.

Bids must be deposited in the Bid Box at the reception area of Harry Gwala District Municipal, 40 Main Street, IXOPO before the closing date and time. Telegraphic, telexed or faxed bids will not be considered and late bids will not be accepted.

Harry Gwala District Municipality does not bind itself to accept the lowest or any Bid and reserves the right to accept the whole or any part of the bid.

**BID ENQUIRIES**

All bid enquiries and other matters shall be directed to: Executive Director: Water Services: Mr D S Gqiba during working hours on Tel.:039-834 2485

Mrs T.T Thiyane-Magaqa  
Acting Municipal Manager

HARRY GWALA DISTRICT MUNICIPALITY

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**T1.1: TENDERING NOTICE AND INVITATION TO TENDER**



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Mrs T.T Thiyane-Magaqa  
Acting Municipal Manager

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## T1.2 Tender Data

### Conditions of Tender

This Tender Data was adopted from the CIDB Standard Condition and the Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the CIDB Standard Conditions of Tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

The Conditions of Tender are the Standard Conditions of Tender as contained in Annexure F of the September the legislated Standard Conditions of Tender as published in Board Notice 62 of 2004 in Government Gazette 2647 of 9 June 2004 and amended by:

1. Board Notice 67 of 2005 in Government Gazette No 27831 of 22 July 2005;
2. Board Notice 99 of 2005 in Government Gazette No 28127 of 14 October 2005;
3. Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006;
4. Board Notice 8 of 2008 in Government Gazette No 30692 of 1 February 2008; and
5. Board Notice 12 of 2009 in Government Gazette No. 31823 of 30 January 2009.

Are for ease of reference included herein in their entirety. In case of any discrepancies, the gazetted version takes precedence.

The standard conditions of tender are included separately after the Tender Data

Each item of data given below is cross-referenced to the Clause in the Standard Conditions of Tender to which it mainly applies.

Clause No.	Description
F.1.1	<p><b>The Employer is:</b></p> <p>HARRY GWALA DISTRICT MUNICIPALITY                      40 MAIN STREET                      IXOPO                      3276</p>
F.1.2	<p><b><u>Tender Documents contents is as follows:</u></b></p> <p><b>PART T1: TENDERING PROCEDURES</b></p> <p>T1.1 Tender Notice and Invitation to Tender                      T1.2 Tender Data</p> <p><b>PART T2: RETURNABLE DOCUMENTS</b></p> <p>T2.1 Returnable Schedules required for Tender Evaluation Purposes                      T2.2 Returnable Schedules to be incorporated in the Contract</p> <p><b><u>THE CONTRACT</u></b></p> <p><b>PART C1: AGREEMENT AND CONTRACT DATA</b></p> <p>C1.1 Form of Offer and Acceptance                      C1.2 Contract Data                      C1.3 Form of Guarantee                      C1.4 Disclosure Statement                      C1.5 Agreement in terms of the Occupational Health and Safety Act No.85 of 1993</p>

	<p>C1.6 Adjudicator's Agreement</p> <p><b>PARTC2: PRICING DATA</b> C2.1 Pricing Instructions C2.2 Bill of Quantities</p> <p><b>PARTC3: SCOPE OF WORKS</b> C3: Scope of Work</p> <p><b>PART C4: SITE INFORMATION</b> C4.1 Site Information</p> <p><b>PART C5: DRAWINGS</b> C5.1 Drawings</p>
<p><b>F1.3</b></p>	<p><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.</p>
<p><b>F.1.4</b></p>	<p><b>The Employer's Representative is:</b></p> <p><b>Mr. DS Gqiba</b></p> <p>Executive Director: Water Services Department Harry Gwala District Municipality Tel: +27 39 834 2485 Fax: +27 39 834 2462 Email: gqibad@harrygwaladm.gov.za</p> <p><b><u>The Employers Agent (also referred to as the Engineer)</u></b> BM JV Rudkor Consulting No. 48 Flamingo Drive Southernwood, Mthatha 5099 Contact Person: Andile Tulelo</p> <p>Telephone: 047 531 0424 Fax: 047 531 0409 Email: <a href="mailto:info@bmengineers.co.za">info@bmengineers.co.za</a></p> <p>Attention is drawn to the fact that verbal communication given by the Employer's representative and / or agent prior to the close of Request for Proposals (Tender) will not be regarded as binding on the Employer. Only information issued formally by the Employer in writing to the bidders, under the signature of the Accounting Officer or his nominee will be regarded as amending the Tender documents. Tender offer communicated on paper shall be submitted as an original.</p> <p>In the event that no correspondence or communication is received from HGDM within ninety (90) days after the stipulated closing date and time of the Tender, the Tender proposal will be deemed to be unsuccessful.</p>
<p><b>F1.5.1</b></p>	<p><b>Reject or Accept</b></p> <p>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 bidder for such a cancellation and rejection, but will give written reasons for such action upon written request to do so.</p>

<p><b>F1.5.2</b></p>	<p>Replace the existing Clause with the following:</p> <p>The Employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers, save for all tenders being non-responsive, re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.</p>						
<p><b>F.2.1</b></p>	<p><b>CIDB REQUIREMENTS</b></p> <p>The tenderers who are registered with the CIDB are eligible to submit their tenders, provided that they meet the following criteria:</p> <p>(a) contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Regulations, for a <b>7CE or higher</b> Class of construction work;</p> <p>(b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above (i.e. <b>7CE</b>) and who satisfy the following criteria:</p> <ul style="list-style-type: none"> <li>• They can demonstrate they have the financial resources to undertake the work being tendered for</li> <li>• They have priced documents fairly and can demonstrate the basis of pricing of items where in the Engineer's opinion the pricing is unbalanced</li> <li>• They can demonstrate that they have experienced personnel to manage the work being tendered for.</li> </ul> <p>(c) Joint ventures are eligible to submit tenders provided that:</p> <ul style="list-style-type: none"> <li>• every member of the joint venture is registered with the CIDB;</li> <li>• the lead partner has a contractor grading designation in the CE class of construction work; and</li> <li>• the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 5CE class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations.</li> </ul>						
<p><b>F2.7</b></p>	<p>The arrangements and venue for the compulsory clarification meeting are:</p> <table border="1"> <tr> <td colspan="2"> <p><b>The arrangements for a compulsory briefing/clarification meeting are:</b></p> </td> </tr> <tr> <td> <p><b>Date:</b> 28 July 2022 <b>Time:</b> 10h30am</p> </td> <td> <p><b>Location:</b> Dr Nkosazana Dlamini – Zuma Local Municipality offices in Creighton</p> </td> </tr> <tr> <td colspan="2"> <p>No individual should represent more than one bidder at the compulsory briefing session. Non-completion in full of the fields required on the attendance register may lead to automatic disqualification.                      At least one member of the JV be represented at the compulsory clarification meeting.</p> </td> </tr> </table> <p>Tenderers must sign the Attendance Register in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the</p>	<p><b>The arrangements for a compulsory briefing/clarification meeting are:</b></p>		<p><b>Date:</b> 28 July 2022 <b>Time:</b> 10h30am</p>	<p><b>Location:</b> Dr Nkosazana Dlamini – Zuma Local Municipality offices in Creighton</p>	<p>No individual should represent more than one bidder at the compulsory briefing session. Non-completion in full of the fields required on the attendance register may lead to automatic disqualification.                      At least one member of the JV be represented at the compulsory clarification meeting.</p>	
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	Attendance Register.
<b>F2.8</b>	<p><b>Seek Clarification</b></p> <p>Questions or queries must be submitted to the Employer at least five (5) working days before the stipulated closing date and time of the Tender. However, HGDM shall not be liable nor assume liability for failure of the bidder to receive response to any questions and / or queries raised by the bidder by the closing time.</p>
<b>F2.12</b>	<p><b>Alternative tender offers</b></p> <p>If a tenderer wishes to submit an alternative offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent.</p> <p>Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions in the development of the pricing proposal.</p> <p>Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept the full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements</p> <p>The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.</p>
<b>F2.13.2</b>	<p><b>Submitting a tender offer</b></p> <p>Tenderers to note that the returnable documents are listed in Part T.2: Returnable Documents</p>
<b>F2.13.3</b>	<p>The returnable part of the tender offer communicated on paper shall be submitted as an original.</p>
<b>F2.13.5</b>	<p>The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:</p> <p><b>Location of Tender Box: Foyer of the offices of the HARRY GWALA DISTRICT MUNICIPALITY</b> <b>Physical address: 40 MAIN STREET, IXOPO, 3276</b> <b>Tender Documents Endorsed.: HGDM 774/HGDM/2021</b></p>
<b>F2.13.6</b>	<p>A two-envelope system will not be followed.</p>
<b>F2.15</b>	<p>The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.</p>

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 CONTRACT No.: HGDM 774/HGDM/2021

F2.16	<p><b>Tender offer validity</b>                  The tender offer validity period is <b>twelve (12)</b> weeks (90 days) from the tender closing date</p>														
F2.23	<p><b>Certificates</b>                  All certificates as listed under Part T2: Returnable Documents</p>														
F3.2	<p><b>Issue Addenda</b>                  Change "seven days" to "seven working days".</p>														
F3.4	<p><b>Opening of tender submission</b>                  Tender Offers will be opened in public. Not more than two representatives of the tendering entity will be allowed to attend the tender opening session.</p> <p>The time and location for opening of the tender offers are:</p> <p>Time: 12H00                  Date: 17 August 2022</p> <p>Location: <b>Tender Box, Foyer of Harry Gwala District Municipality Offices, 40 Main Street, IXOPO, 3276</b></p>														
F3.5	<p><b>Two-envelope system</b>                  A two-envelope system will <b>not</b> be followed.</p>														
F3.11	<p><b>Evaluation of tender offers</b>                  The procedure for the evaluation of responsive tenders is <b>Method 2 with the 80/20 Preference Point System</b>. Tenderers will be scored for quality first and only those tenders that meet the specified minimum total score for quality will be considered further. These tenders will then be evaluated on the basis of the 80/20 Preference Points System.</p> <p>Method 2: Financial Offer, Quality and Preferences</p> <p>(a) Quality                  The score for quality is to be calculated using the following formula:</p> $Wq=W2 \times So / Ms$ <p>where:                  W2 = is the percentage score given to quality and equals 100                  So = is the score for quality allocated to the submission under consideration                  Ms = is the maximum possible score for quality in respect to the submission</p> <p>The quality will comprise scores for the following based on criteria indicated in the respective tender returnable and summarised as follows:</p> <p><b>FUNCTIONALITY</b></p> <p>The score for quality can be further broken down per individual criteria as follows:</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Maximum Allocated Points</th> </tr> </thead> <tbody> <tr> <td>Experience of Key Personnel (Contracts Manager)</td> <td>15</td> </tr> <tr> <td>Experience of Key Personnel (Site Agent)</td> <td>10</td> </tr> <tr> <td>Experience of Key Personnel (Foreman)</td> <td>5</td> </tr> <tr> <td>Experience of Bidder with respect to similar projects</td> <td>50</td> </tr> <tr> <td>Financial Capacity</td> <td>20</td> </tr> <tr> <td><b>TOTAL MAXIMUM POINTS</b></td> <td><b>100</b></td> </tr> </tbody> </table>	Description	Maximum Allocated Points	Experience of Key Personnel (Contracts Manager)	15	Experience of Key Personnel (Site Agent)	10	Experience of Key Personnel (Foreman)	5	Experience of Bidder with respect to similar projects	50	Financial Capacity	20	<b>TOTAL MAXIMUM POINTS</b>	<b>100</b>
Description	Maximum Allocated Points														
Experience of Key Personnel (Contracts Manager)	15														
Experience of Key Personnel (Site Agent)	10														
Experience of Key Personnel (Foreman)	5														
Experience of Bidder with respect to similar projects	50														
Financial Capacity	20														
<b>TOTAL MAXIMUM POINTS</b>	<b>100</b>														



HARRY GWALA DISTRICT MUNICIPALITY

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Key Criteria Aspect	Basis for Points Allocation	Score	Max Score	Verification Method
Experience of Key Personnel (Contracts Manager)	Approved Degree/Diploma in built environment qualification and		15	Certified Qualification certificates and Curriculum Vitae to be attached with traceable references. Experience must be on water projects
	Less than 4 years' experience	8		
	Between 4 - 7 years relevant experience in the position.	12		
	8 and above years' relevant experience in the position	15		
	No qualification with minimum of 5 years' experience in the position	5		
	No qualification with 6 -10 years' experience in the position.	8		
Experience of Key Personnel (Site Agent)	Approved Degree/Diploma in built environment qualification and		10	Certified Qualification certificates and Curriculum Vitae to be attached with traceable references. Experience must be on water projects
	Less than 4 years' experience	5		
	Between 4 - 9 years relevant experience in the position.	7		
	10 and above years' relevant experience in the position	10		
	No qualification with minimum of 5 years' experience in the position	5		
	Between 4 - 9 years relevant experience in the position.	7		
Experience of Key Personnel (Foreman)	1 - 3 years' experience in the position	2	5	Curriculum Vitae to be attached with traceable references. Experience must be only on civil engineering projects specifically water.
	4 - 6 years' experience in the position	3		
	7 - 9 years' experience in the position	4		
	10 and above years' experience in the position	5		
Experience of Tenderer in completed similar projects	0 - 1 Project	10	50	Appointment letters and Completion Certificates (for subcontracting attach also appointment letter of main contractor).
	2 - 3 projects	15		
	4 - 5 projects	20		
	6 - 7 projects	35		
	More than 8 projects	50		
Financial Capacity	Undoubted for the amount of your enquiry	A = 20	20	Rating by bank where account is held
	Good for tender amount quoted	B = 15		
	Average to good for the amount of tender enquiry, if strictly in the way of business	C = 10		
	Rating below good (D )	E-F = 8		
<p>Please note that the minimum required score for functionality is 60%. <b>Tenderers achieving less than 60% for functionality shall not proceed to the next stage of the evaluation.</b> The functionality criteria maximum points in respect of each criteria shall be as follows:</p>				

**(b) Financial Offer**

The financial offer will be scored using the following formula

$$Nf = W1 \times [1 - (P - Pm) / Pm]$$

where:

W1 = **80** for financial values up to R50 000 000 (inclusive of VAT) of all responsive tenders received, and **90** for financial values over R50 000 000;

Pm = the value of the comparative offer of the most favorable tender;

P = the value of the comparative offer under consideration

**(c) Preferences**

Up to **20** points (for financial values up to R50 000 000) or **10** points (for financial values over R50 000 000) will be awarded to tenderers who are found to be eligible for the preference claimed.

Points will be awarded to Tenderers for attaining the BBBEE status level of contribution as per the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017 as detailed below.

BBBEE Status Level Contributor	Number of Points (80/20 Principle)	Number of Points (90/10 Principle)
1	20	10
2	18	9
3	14	8
4	12	6
5	8	4
6	6	3
7	4	2
8	2	1
Non-Compliant Contributor	0	0

**Evaluation Criteria**

HGDM will establish a Bid Evaluation Committee (BEC) whose responsibility it is to make recommendations to the Bid Adjudication Committee (BAC). The Bid Evaluation Committee will short list and evaluate the bid document in accordance with the criteria below and make recommendations to the BAC.

- 1) Pre-compliance evaluation to be performed and pre-compliant Tenderers will advance to the functionality evaluation stage. Where pre-compliance information has not been provided, HGDM Supply Chain will attempt to contact the Tenderer to submit the omitted information within 5 working days. Failure to provide the required information within this timeframe will result in disqualification.
- 2) Score bid evaluation points for functionality and exclude all Tenders that do not achieve 65% for quality. Confirm that Bidders progressing to second stage are eligible for the preferences claimed, and if so, score Bid evaluation points for preference.
- 3) Score Bid evaluation points for price and preference points.

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	<p>4) Calculate total Bid evaluation points, to two decimal places.</p> <p>5) Rank Bid offers from the highest number of Bid evaluation points to the lowest.</p> <p>6) Recommend Bidders with the highest number of Bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.</p>
<p><b>F3.13.1</b></p>	<p><b>Acceptance of tender offer</b></p> <p><b>Tender offers will only be accepted if:</b></p> <ul style="list-style-type: none"><li>a) the tenderer has in his or her possession an original valid Tax Clearance Certificate or SARS Pin issued by the South African Revenue Services, or has made arrangements to meet outstanding tax obligations</li><li>b) the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation, by tender closing date;</li><li>c) the tenderer is not in arrears for more than 3 months with the municipal rates and taxes and municipal services charges;</li><li>d) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;</li><li>e) the tender has not</li></ul>

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	<p>i) abused the Employer's Supply Chain Management System; or</p> <p>ii) failed to perform on any previous contract and has been given a written notice to this effect; and</p> <p>f) has completed the Compulsory Enterprise Questionnaires and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interest of the employer or potentially compromise the tender process.</p> <p>g) the Tenderer or a competent authorized representative of the Contractor who submitted the tender has attended the compulsory clarification meeting and/or site inspection, as specified;</p> <p>h) the tender offer is signed by a person authorized to sign on behalf of the Tenderer;</p> <p>i) a Tenderer who submitted a tender as a Joint Venture has included an acceptable Joint Venture Agreement with his tender.</p>
<b>F3.17</b>	<p><b>Provide copies of the contracts</b></p> <p>The number of paper copies of the signed contract to be provided by the Employer is: <b>one (1)</b>.</p>
<b>F3.18</b>	<p>The number of paper copies of the signed contract to be provided by the Employer is one original plus one original duplicate.</p> <p>The additional conditions of tender are as follows:</p> <p>1.The BBBEE Certificate from an accredited organisation will be used to award preference points.</p>

## Appendix: Standard Conditions of Tender

*(These Standard Conditions of Tender have been reproduced, without any changes, from Appendix A of the CIDB Standardized Construction Procurement Documentation for Engineering Construction Works dated 5 August 2005)*

### F.1 General

#### F.1.1 Actions

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

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

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

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

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

#### F.1.2 Tender Documents

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

#### F.1.3 Interpretation

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

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

**F.1.3.3** For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

(a) **conflict of interest** means any situation in which

- i) someone in a position of trust has competing professional or personal interest which make it difficult to fulfil his or her duties impartially;
- ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or

- iii) Incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
- (b) **comparative offer** means the tenderer's financial offer after the factors of non-firm prices, all unconditional discounts and any other tendered parameters that will affect the value of the financial offer have been taken into consideration
- (c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and
- (d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- (e) **Organisation** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body
- (f) **Quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

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

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

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

**F.1.5.1** The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection, but will give reasons for such action upon written request to do so.

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

#### F.1.6 Procurement Procedures

##### F.1.6.1 General

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

##### F.1.6.2 Competitive Negotiation Procedure

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

- F.1.6.2.2** All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the data, shall be invited in each round to enter the competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the Employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning and additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.
- F.1.6.2.3** At the conclusion of each round of negotiations, tenderers shall be invited by the Employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.
- F.1.6.2.4** The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13 after tenderers have been requested to submit their best and final offer.

### **F.1.6.3 Proposal Procedure using two stage system**

#### **F.1.6.3.1 Option 1**

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

#### **F.1.6.3.2 Option 2**

- F.1.6.3.2.1** Tenderers shall submit in the first stage only technical proposals. The Employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.
- F.1.6.3.2.2.** The Employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

## **F.2 Tenderer's obligations**

### **F.2.1 Eligibility**

- F.2.1.1** Submit a tender offer only if the tenderer complies with the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.
- F.2.1.2** Notify the Employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the Employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the Employer's written approval prior to do so prior to the closing time of tenders.

**F.2.2 Cost of tendering**

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

**F.2.3 Check documents**

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

**F.2.4 Confidentiality and copyright of documents**

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

**F.2.5 Reference documents**

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

**F.2.6 Acknowledge addenda**

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

**F.2.7 Site visit and clarification meeting**

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

**F.2.8 Seek clarification**

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

**F.2.9 Insurance**

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

**F.2.10 Pricing the tender offer**

**F.2.10.1** Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT)), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.

**F.2.10.2** Show VAT payable by the employer separately as an addition to the tendered total of the prices.



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

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

**F.2.11 Alterations to documents**

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

**F.2.12 Alternative tender offers**

**F.2.12.1** Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. The alternative tender offer is to be submitted with the main tender offer together with a schedule that compares the requirements of the tender documents with the alternative requirements the tenderer proposes.

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

**F.2.13 Submitting a tender offer**

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

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

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

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

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

**F.2.13.6** Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

**F.2.13.7** Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

- F.2.13.8** Accept that the employer shall not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
- F.2.13.9** Accept that tender offers submitted by facsimile or email will be rejected by the Employer, unless stated otherwise in the tender data.
- F.2.14** **Information and data to be completed in all respects**  
Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.
- F.2.15** **Closing time**
- F.2.15.1** Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept tender offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the tender data.
- F.2.15.2** Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.
- F.2.16** **Tender offer validity**
- F.2.16.1** Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.
- F.2.16.2** If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period.
- F.2.16.3** Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.
- F.2.16.4** Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".
- F.2.17** **Clarification of tender offer after submission**  
Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered or permitted.
- F.2.18** **Provide other material**
- F.2.18.1** Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.
- F.2.18.2** Dispose of samples of materials provided for evaluation by the employer, where required.

**F.2.19 Inspections, tests and analysis**

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

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

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

**F.2.21 Check final draft**

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

**F.2.22 Return of other tender documents**

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

**F.2.23 Certificates**

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

**F.3 The employer's undertakings**

**F.3.1 Respond to requests from the tenderer**

**F.3.1.1** Respond to a request for clarification received up to five working days prior to the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

**F.3.1.2** Consider any request to make material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

- a) An individual firm, or joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements.
- b) The new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- c) In the opinion of the Employer, acceptance of the material change would compromise the prequalification process.

**F.3.2 Issue Addenda**

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date of the Tender Notice 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, will then notify it to all tenderers who drew documents.

**F.3.3 Return late tender offers**

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

**F.3.4 Opening of tender submissions**

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

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

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

**F.3.5 Two-envelope system**

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

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

**F.3.6 Non-disclosure**

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

**F.3.7 Grounds for rejection and disqualification**

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

**F.3.8 Test for responsiveness**

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

- (a) meets the requirements of these Conditions of Tender,
- (b) has been properly and fully completed and signed, and
- (c) is responsive to the other requirements of the tender documents.

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

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

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

### F.3.9 Arithmetical errors

**F.3.9.1** Check responsive tender offers for arithmetical errors between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and 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 tenders in accordance with F.3.11 for:

- a) The gross misplacement of the decimal point in the unit rate,
- b) Omissions made in completing the pricing schedule or bills of quantities or
- c) Arithmetic errors in
  - Line item totals resulting from the product of unit rate and a quantity in bills of quantities or schedule of prices; or
  - The summation of the prices.

**F.3.9.2** Notify the tenderers 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.3.9.3** 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 as quoted shall govern, and the unit rate will 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 a bill of quantities applies) to achieve the tendered total of the prices.

Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of his arithmetical errors in the manner described above.

### F.3.10 Clarification of a tender offer

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

### F.3.11 Evaluation of tender offers

#### F.3.11.1 General

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

#### F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

- a) Rank tender offers from the most favourable to the least favourable comparative offer.
- b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.

- c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

### **F.3.11.3 Methods 2: Financial offer and preference**

In the case of a financial offer and preferences:

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

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

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

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

### **F.3.11.4 Method 3: Financial offer and quality**

In the case of a financial offer and quality:

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

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

where:  $N_{FO}$  is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;  
 $N_Q$  is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

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

### **F.3.11.5 Method 4: Financial offer, quality and preferences**

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

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

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

where: N<sub>FO</sub> is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;  
N<sub>P</sub> is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.  
N<sub>Q</sub> is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

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

#### F.3.11.6 Decimal Places

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

#### F.3.11.7 Scoring Financial Offers

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

$$N_{FO} = W_t \times A$$

where:

N<sub>FO</sub> = the number of tender evaluation points awarded for the financial offer.

W<sub>t</sub> = the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.

A = a number calculated using either formulas 1 or 2 below as stated in the Tender Data.

Formula	Basis for comparison	Option 1	Option 2
1	Highest price or discount	$(1 + \frac{(P - P_m)}{P_m})$	$P/P_m$
2	Lowest price or percentage commission/fee	$(1 - \frac{(P - P_m)}{P_m})$	$P_m/P$

where:

P<sub>m</sub> = the comparative offer of the most favourable tender offer.

P = the comparative offer of tender offer under consideration.

#### F.3.11.8 Scoring Preferences

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

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

**F.3.11.9 Scoring quality (functionality)**

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

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

$$No = W_2 \times S_o / M_s$$

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

**F.3.12 Insurance provided by the employer**

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

**F.3.13 Acceptance of tender offer**

**F.3.13.1** Accept tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer:

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

**F.3.13.2** Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful tenderer as described in the form of offer and acceptance.

**F.3.14 Notice to unsuccessful tenderers**

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

**F.3.15. Prepare contract documents**



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

- (a) addenda issued during the tender period,
- (b) inclusion of some of the returnable documents,
- (c) other revisions agreed between the employer and the successful tenderer, and
- (d) the schedule of deviations attached to the form of offer and acceptance, if any.

**F.3.16 Issue final contract**

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

**F.3.17 Complete adjudicator's contract**

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

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

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

**F.3.19 Provide written reasons for actions taken**

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

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
CONTRACT No.: HGDM 774/HGDM/2021**

**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)  
CONTRACT No: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND  
RETICULATION AT MPUMULWANE VILLAGE**

**PART T2: RETURNABLE DOCUMENTS AND SCHEDULES**

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CONTRACT No.: HGDM 774/HGDM/2021**

**PART T2.1: LIST OF RETURNABLE DOCUMENTS AND SCHEDULES**

**1. List of Returnable Documents and Schedules Required for Tender Evaluation Purposes**

- Certificate of Tenderers' Attendance at the Clarification Meeting
- Authority for Signatory
- Schedule of Work Carried out by the Tenderer
- Certificate of Registration with CIDB
- Preliminary Programme
- Amendments, Qualifications and Alternatives
- SARS Pin
- BBBEE Certificate
- Tenderer's Financial Standing
- Form of Intent to Provide a Performance Guarantee
- Compulsory Enterprise Questionnaire
- UIF Registration Certificate
- Proof of Purchase of Tender Documents
- MBD4 Form
- Joint Venture Disclosure Form
- Company Registration Certificate
- Identity Documents
- VAT Registration Certificate
- Project Specific Health and Safety Plan
- Certificate of Municipal Services

**2. Other Returnable Schedules and Documents that will be incorporated into the Contract**

- Schedule of Construction Plant & Equipment
- Schedule of Proposed Sub-Contractors
- Record of Addenda to Tender Documents
- Rates for Special Materials
- Contractor's Health and Safety Declaration
- Form of Offer and Acceptance (Part C1)
- Contract Data (Part C1)
- Form of Guarantee (Part C1)
- Adjudicator's Agreement (Part C1)
- Agreement in Terms of the OHSA No 85 of 1993 (Part C1)
- Bill of Quantities (Part C2)
- Scope of Work (Part C3)
- Site information (Part C4)
- Drawings (Part C5)

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
CONTRACT No.: HGDM 774/HGDM/2021**

**FORM A: Certificate of Attendance at Clarification Meeting**

**CONTRACT No: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND  
RETICULATION AT MPUMULWANE VILLAGE**

(Please print)

It is hereby CERTIFIED that I, ..... (name)

in my capacity as.....and a duly authorized

representative of..... (the TENDERER)

of (address).....

in the company of.....(the ENGINEER)

attended the official Site Inspection on .....(date)

for and on behalf of the above named Tenderer.

I hereby further DECLARE that I am satisfied with the description of the Works and the explanations given by the above named Engineer.

SIGNATURE .....  
(On behalf of TENDERER)

DATE .....

**AS WITNESS:-**  
(On behalf of ENGINEER)

NAME .....

SIGNATURE .....

DATE .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
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**FORM B: Authority for 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.: HGDM 774/HGDM 2021** and any contract resulting from it on behalf of the  
company.

**As witnesses:**

1. .... Chairman: .....
2. .... Date: .....

Signature of Authorised Person: .....

**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.: HGDM 774/HGDM 2021** 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.*

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 774/HGDM/2021**

Signature of Authorised Person: .....

**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.: HGDM 774/HGDM/2021** and any contract resulting from it on our behalf.

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

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

Signature of Authorised Person: .....

**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: .....

Signature of Authorised Person: .....

**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.: HGDM 774/HGDM/2021** and any contract resulting from it on our behalf.

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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CONTRACT No.: HGDM 774/HGDM/2021**

<b>Name</b>	<b>Address</b>	<b>Signature</b>	<b>Date</b>

*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.*

Signature of Authorised Person: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
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**FORM C: Certificate of Registration with CIDB**

The Tenderer is to attach a copy (ies) of Tenderer's Registration with CIDB or alternatively furnish the CIDB registration number and details in the table below. This information will be verified with the CIDB through the CIDB website. It is the Tenderer's responsibility to ensure that their details are displayed on the website. If a joint venture is tendering, details of all the JV members are to be furnished.

<b>Name of Tenderer/Contractor</b>	<b>CIDB Registration Number</b>	<b>Category and Class of Registration e.g. 1CE</b>

My/Our failure to submit the certificate(s) or furnish the required details with my/our tender document will lead to the conclusion that I/we are not registered with CIDB and therefore are not eligible to tender.

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

DATE: .....



**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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**FORM D: Schedule of Work Carried out by the Tenderer**

The Tenderer shall list below the last ten civil engineering contracts of a similar nature awarded to him. This information is material to the award of the Contract.

<b>EMPLOYER</b> (Name, Tel No and Fax No)	<b>CONSULTING ENGINEER</b> (Name, Tel No and Fax No)	<b>NATURE OF WORK</b>	<b>VALUE OF WORK</b>	<b>YEAR OF COMPLETION</b>

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

DATE: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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**FORM E: Preliminary Programme**

The Tenderer shall detail below or attach a preliminary programme reflecting the proposed sequence and tempo of execution 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 his Tender.

**PROGRAMME**

ACTIVITY	WEEKS												

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

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

DATE: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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CONTRACT No.: HGDM 774/HGDM/2021**

**FORM F: Amendments, Qualifications and Alternatives**

(This is not an invitation for amendments, deviations or alternatives but should the Tenderer desire to make any departures from the provisions of this contract he shall set out his proposals clearly hereunder. The Employer will not consider any amendment, alternative offers or discounts unless forms (a), (b) and (c) have been completed to the satisfaction of the Employer).

I / We herewith propose the amendments, alternatives and discounts as set out in the tables below:

**(a) AMENDMENTS**

<b>PAGE, CLAUSE OR ITEM NO</b>	<b>PROPOSED AMENDMENT</b>

Notes:

- (1) Proposals for amendments to the General and Special Conditions of Contract are not acceptable, and will be ignored;
- (2) The Tenderer must give full details of all the financial implications of the amendments and qualifications in a covering letter attached to his tender.

**(b) ALTERNATIVES**

<b>PROPOSED ALTERNATIVE</b>	<b>DESCRIPTION OF ALTERNATIVE</b>

**HARRY GWALA DISTRICT MUNICIPALITY**

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**Notes**

- (1) Individual alternative items that do not justify an alternative tender, and an alternative offer for time for completion should be listed here.
- (2) In the case of a major alternative to any part of the work, a separate Bill of Quantities, programme, etc, and a detailed statement setting out the salient features of the proposed alternatives must accompany the tender.
- (3) Alternative tenders involving technical modifications to the design of the works and methods of construction shall be treated separately from the main tender offer.]

**(c) DISCOUNTS**

ITEM ON WHICH DISCOUNT IS OFFERED	DESCRIPTION OF DISCOUNT OFFERED

**Note**

The Tenderer must give full details of the discounts offered in a covering letter attached to his tender, failing which, the offer for a discount may have to be disregarded.]

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

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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**CONTRACT No.: HGDM 774/HGDM/2021**

**FORM G: SARS Pin Certificate**

The Tenderer is to attach his valid SARS Pin on this page. In the case of a Joint Venture, original copies of SARS Pin for all members of the Joint Venture must be attach.

**Tenderers must note that failure to comply with this requirement will render their tender invalid.**

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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**FORM H: Tenderer's Financial Standing**

**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE**

**HGDM 774/HGDM/2021**

The Employer may make inquiries to obtain a bank rating from the Tenderer's bank.

To this 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.

However, should the tenderer be unable to provide a bank rating with his tender, he shall be state the reasons thereof and in addition provide the following details of his banker and bank account details that he intends to use for the contract:

Name of Account Holder: .....

Name of Bank: ..... Branch: .....

Account Number: ..... Account Type: .....

Telephone Number: ..... Fax N<sup>o</sup>: .....

Name of Contact Person (*at bank*): .....

Failure to provide either the required bank details or 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.

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

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

DATE: .....

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CERTIFIED BANK RATING**

***Tenderers to attach a Certified Bank Rating to this page. Failure to comply may lead to awarding of zero points for quality on this criteria.***

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**FORM I: Form of Intent to Provide a Performance Guarantee**

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

Tenderers are to refer to Form C1.3: Form of Guarantee



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**FORM J: Compulsory Enterprise Questionnaire**

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

**Section 1: Name of enterprise:** .....

**Section 2: VAT registration number, if any:** .....

**Section 3: CIDB registration number, if any:** .....

**Section 4: Particulars of sole proprietors and partners in partnerships**

Name*	Identity number*	Personal income tax number*

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

**Section 5: Particulars of companies and close corporations**

Company registration number .....

Close corporation number .....

Tax reference number .....

**Section 6: Record of service of the state**

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

- |  |   |
|--|---|
| <input type="checkbox"/> a member of any municipal council                                     | <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| <input type="checkbox"/> a member of 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                   |   |

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**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, 1999 (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) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;

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iii)	confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
iv)	confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;
iv)	confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct;

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Name \_\_\_\_\_ Position \_\_\_\_\_  
Name of Enterprise \_\_\_\_\_

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**FORM K: Proforma Client Reference of Projects**

The Tenderer must request previous Client/Referee to be complete this form for two projects for their respective pipeline reticulation projects (as claimed in the Tenderers Experience Schedule). The completed and signed forms to be submitted with the Tender.

**PROFORMA REPORT ON THE TENDERER'S COMPETENCE AND PERFORMANCE ON PIPELINE  
RETICULATION PROJECT FOR TENDER EVALUATION PURPOSES**

The following form will be requested to be completed by the Tenderers previous Clients.

**Project Details:**

Description of work: .....

Employer: .....

Value of work: .....

Contract Duration and Commencement Date: .....

Diameter of pipelines: .....

Length of pipelines: .....

	<b>Qualitative Statements as assessed by Referees</b>	<b>Points</b>	<b>Score</b>
1	"Contractor's Management was adequate for the contract"		
2	"Contractor provided suitably qualified Site personnel"	Unacceptable	0
3	"Contractor's provided adequate resources for the contract"	Poor	1
		Below Average	2
4	"Contractor's communication and compliance to instructions was good"	Average	3
		Above Average	4
5	"Quality of work produced was to drawings and specification"	Good	5
6	"Contract was completed on time"		
	<b>Total Points Obtained</b>		

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Any other remarks considered necessary to assist in evaluation of the Service Provider?

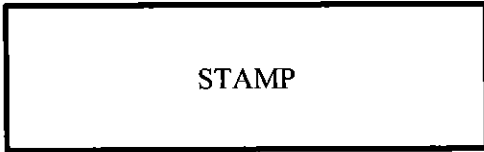
.....  
.....

Client's/ contact person & Capacity: .....

Telephone: .....

Client Signature: .....

Date: .....



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**FORM L: Proof of Purchase of Tender Documents**

The Tenderer shall insert here proof of purchase of the tender documents in the form of an official receipt or other acceptable form of proof

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### FORM M: Preferential Procurement

Harry Gwala District Municipality has adopted the Preference Point System as stipulated in the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000) and as set out in the 2017 regulations.

#### M.1. PRINCIPLES APPLIED BY THE MUNICIPALITY

- 1.1 The Harry Gwala District Municipality has a responsibility to ensure that resources are managed in the most efficient and effective manner possible. This aim forms part of a national objective to manage the use of the resources of the nation in a thrifty, careful and economic manner and in such a way as to maximise sustained economic growth. The Municipality also has a responsibility to ensure that its activities further other overall national objectives of equity and redress, and to balance the furthering of these objectives in a manner that is fair and transparent. The Municipality is committed, therefore, to a process of cost effective, competitive procurement for goods and services that incorporates a targeted preferential methodology aimed at furthering the growth and development of persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability.
- 1.2 No contract for the supply of any goods to or for any work, undertaking or service for or on behalf of the Harry Gwala District Municipality involving an estimated expenditure in excess of an amount prescribed in the Municipality's Preferential Procurement/Supply Chain Management Policy shall be entered into by the Municipality, unless public tenders have been called for in the manner prescribed.
- 1.3 Furthermore, the Harry Gwala District Municipality shall, in accordance with the framework prescribed by national legislation, give preference in awarding contracts to persons or categories of persons historically disadvantaged by unfair discrimination on the basis of race, gender or disability, and shall make the granting of such preferences public in the manner determined in the policy.

#### M.2 The 80/20 Preference Point System

The procedure for the evaluation of responsive tenders is **Method 2** with the 80/20 Preference Point System. Tenderers will be scored for quality first and only those tenders that meet the specified minimum total score for quality will be considered further. These tenders will then be evaluated on the basis of the 80/20 Preference Points System.

##### Method 2: Financial Offer, Quality and Preferences

###### (a) Quality

The score for quality is to be calculated using the following formula:

$$W_q = W_2 \times S_o / M_s$$

where:

$W_2$  = is the percentage score given to quality and equals **100**

$S_o$  = is the score for quality allocated to the submission under consideration

$M_s$  = is the maximum possible score for quality in respect to the submission

The quality will comprise scores for the following based on criteria indicated in the respective tender returnables:

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Description	Maximum Allocated Points
Experience of Key Personnel (Contracts Manager)	15
Experience of Key Personnel (Site Agent)	10
Experience of Key Personnel (Foreman)	10
Experience of Bidder with respect to similar projects	25
Financial Capacity	10
Previous Performance	30
<b>TOTAL MAXIMUM POINTS</b>	<b>100</b>

The score for quality can be further broken down per individual criteria as follows:

Key Criteria Aspect	Basis for Points Allocation	Score	Max Score	Verification Method
Experience of Key Personnel (Contracts Manager)	Approved Degree/Diploma in built environment qualification and		15	Certified Qualification certificates and Curriculum Vitae to be attached with traceable references. Experience must be on water projects
	Less than 4 years' experience	8		
	Between 4 - 7 years relevant experience in the position.	12		
	8 and above years' relevant experience in the position	15		
	No qualification with minimum of 5 years' experience in the position	5		
	No qualification with 6 -10 years' experience in the position.	8		
	No qualification with 10 and above years' experience in the position	15		
Experience of Key Personnel (Site Agent)	Approved Degree/Diploma in built environment qualification and		10	Certified Qualification certificates and Curriculum Vitae to be attached with traceable references. Experience must be on water projects
	Less than 4 years' experience	5		
	Between 4 - 9 years relevant experience in the position.	7		
	10 and above years' relevant experience in the position	10		
	No qualification with minimum of 5 years' experience in the position	5		
	Between 4 - 9 years relevant experience in the position.	7		
	10 and above years' relevant experience in the position	10		
Experience of Key Personnel (Foreman)	1 - 3 years' experience in the position	2	5	Curriculum Vitae to be attached with traceable references. Experience must be only on civil engineering projects specifically water.
	4 - 6 years' experience in the position	3		
	7 - 9 years' experience in the position	4		
	10 and above years' experience in the position	5		



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Experience of Tenderer in completed similar projects	0 - 1 Project	10	50	Appointment letters and Completion Certificates (for subcontracting attach also appointment letter of main contractor).
	2 - 3 projects	15		
	4 - 5 projects	20		
	6 - 7 projects	35		
	More than 8 projects	50		
Financial Capacity	Undoubted for the amount of your enquiry	A = 20	20	Rating by bank where account is held
	Good for tender amount quoted	B = 15		
	Average to good for the amount of tender enquiry, if strictly in the way of business	C = 10		
	Rating below good (D )	E-F = 8		

**Tenderers that score less than 60% of the total score allowed for quality will *not* be considered further.**

**(b) Financial Offer**

The financial offer will be scored using the following formula

**Price Points: 80 Points Maximum**

The following formula will be used to calculate the pints for price in respect of tenders with a Rand value up to R50 000,000:-

$$Ps = 80 \left\{ 1 - \frac{(Pt - Pmin)}{Pmin} \right\}$$

Where:-

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

**(c) Preferences**

Up to **20** points (for financial values up to R50 000 000) or **10** points (for financial values over R50 000 000) will be awarded to tenderers who are found to be eligible for the preference claimed.

Points will be awarded to Tenderers for attaining the BBBEE status level of contribution as per the Preferential Procurement Policy Framework Act, 2000; Preferential Procurement Regulations, 2011 as detailed below.

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<b>BBBEE Contributor</b>	<b>Status Level</b>	<b>Number of Points (90/10 Principle)</b>	<b>Number of Points (80/20 Principle)</b>
1		10	20
2		9	18
3		8	14
4		6	12
5		4	8
6		3	6
7		2	4
8		1	2
Non-Compliant Contributor		0	0

**M.3 Bidder Submission Requirements**

All bidders must provide the following information and certificates with their bids and may not consider any quotation or bid submitted by a service provider who fails to submit the following information:

- All potential or actual conflicts of interests
- The name of the entity or person
- Whether the owner is or has been in the service of the state in the previous 12 months
- If the provider is not a natural person, whether any of its directors, managers, principle shareholders or stakeholders is in the service of the state or has been in the previous 12 months
- Whether a spouse, child or parent of the provider or of a director, manager shareholder or stakeholder is in the service of the state or has been in the previous 12 months
- Tax reference numbers, including Tax, PAYE, UIF and SDL and VAT, if applicable
- Identification or company registration numbers
- A valid Tax clearance certificates issued by SARS
- BBEEE Certificate for tendering entity. For joint ventures, the BBEEE certificates for the individual JV members should be submitted.
- Registration with relevant bodies or controlling authorities if such registrations are mandatory
- Employment Equity Registration Numbers from the Department of Labour, if applicable
- Proof of registration and a letter of good standing from the Compensation Commissioner in compliance with COIDA Act.
- Proof that municipal rates, taxes and service charges accounts are in order

**M.4 Adjudication Criteria**

Adjudications will be conducted in accordance with the prescribed formulae as indicated in the Preferential Procurement Policy Framework Act and the Broad-Based Black Economic Empowerment Act and scorecards. Adjudication criteria will be clearly stated in the bid documents.

The award must be made to the bidder scoring the highest number of points unless objective criteria indicate that the award should be made to another bidder. The reasons for deviating from the prescribed norms and standards must be documented by the bid adjudication committee and reported immediately to the Accounting Officer. The Accounting Officer may at any stage, refer any recommendations made by either the bid evaluation or bid adjudication committees back to those committees for reconsideration.

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**M.5 Rejection / Disqualification Criteria**

The Municipality may disqualify any offer or bid submitted for the following reasons:

- (i) The bidder failed to comply with all submission requirements as stated in the tender document.
- (ii) The entity or one of its directors is listed on National Treasury's data base as a person prohibited from doing business with the public sector
- (iii) There are levies for water & sanitation service charges from any Municipality by the entity or any of its directors that are in arrears for longer than 3 months unless credit arrangements have been made in terms of council policies.
- (iv) The entity has failed to perform satisfactorily on previous contracts with any Municipality or other organ of state, after that entity was given written notice that performance was unsatisfactory
- (v) Any of the directors committed a corrupt or fraudulent act in competing for a particular contract or in the execution of a contract
- (vi) An Official or other role player committed any corrupt or fraudulent act during the bidding process or the execution of a contract that benefited that person
- (vii) The entity or any of its directors abused the supply chain management system or committed any improper conduct in relation to such system
- (viii) Any director has been convicted for fraud or corruption during the past 5 years
- (ix) Has wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the last 5 years
- (x) Misrepresentation of facts or information in the tender document submitted.
- (xi) Submission of two tender documents (from the same company) unless the other tender document is an alternative offer.
- (xii) Any persons whose tax matters have not been declared as being in order by the South African Revenue Services for awards in excess of R15, 000 Inc VAT.

**M.6 Payments**

Payments for Small and Micro projects shall be made within 30 days after submission of an acceptable invoice which has been approved by the Municipality's Representative or as specified in the Municipality's Special Conditions of Contract.

**M.7 Assignment**

The Service Provider may not cede or assign this contract or any moneys due or that may become due to it, without the prior written consent of the Municipality.

**M.8 Joint Ventures**

The Municipality will only accept Joint Venture agreements that are formed as a new legal entity and where an acceptable and legal agreement is submitted to the municipality. Any payments due to the Joint Venture will be made to the JV bank account.

**M.9 Penalties (Construction Contracts and where Necessary)**

Penalties on late completion of work shall be as specified in the Contract Data.

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**NATIONAL TREASURY  
NO. R. 32**

**JANUARY 2017**

**PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000:  
PREFERENTIAL PROCUREMENT REGULATIONS, 2017**

The Minister of Finance has, in terms of section 5 of the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000), made the regulations set out in the Schedule.

**SCHEDULE  
Preferential Procurement Regulations, 2017**

**Contents**

1. Definitions
2. Application
3. Identification of preference point system, designated sector, pre-qualification criteria, objective criteria and subcontracting
4. Prequalification criteria for preferential procurement
5. Tenders to be evaluated on functionality
6. 80/20 preference point system for acquisition of goods or services for Rand value equal to or above R30 000 and up to R50 million
7. 90/10 preference point system for acquisition of goods or services with Rand value above R50 million
8. Local production and content
9. Subcontracting as condition of tender
10. Criteria for breaking deadlock in scoring
11. Award of contracts to tenderers not scoring highest points
12. Subcontracting after award of tender
13. Cancellation of tender
14. Remedies
15. Circulars and guidelines
16. Repeal of Regulations and saving
17. Short title and commencement

**DEFINITIONS**

In these Regulations, unless the context indicates otherwise, any word or expression to which a meaning has been assigned in the Act must bear the meaning so assigned-

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

**"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;

**"black designated groups"** has the meaning assigned to it in the codes of good practice issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

**"black people"** has the meaning assigned to it in section 1 of the Broad-Based Black Economic Empowerment Act;

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

**"co-operative"** means a co-operative registered in terms of section 7 of the Cooperatives Act, 2005 (Act No. 14 of 2005);

**"designated group"** means-

- (a) black designated groups;
- (b) black people;
- (c) women;
- (d) people with disabilities; or
- (e) small enterprises, as defined in section 1 of the National Small Enterprise Act, 1996 (Act No. 102 of 1996);

**"designated sector"** means a sector, sub-sector or industry or product designated in terms of regulation 8(1)(a);

**"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;

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

**"military veteran"** has the meaning assigned to it in section 1 of the Military Veterans Act, 2011 (Act No. 18 of 2011);

**"National Treasury"** has the meaning assigned to it in section 1 of the Public Finance Management Act, 1999 (Act No. 1 of 1999);

**"people with disabilities"** has the meaning assigned to it in section 1 of the Employment Equity Act, 1998 (Act No. 55 of 1998);

**"price"** includes all applicable taxes less all unconditional discounts;

**"proof of B-BBEE status level of contributor"** means-

- (a) the B-BBEE status level certificate issued by an authorised body or person;
- (b) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
- (c) any other requirement prescribed in terms of the Broad-Based Black Economic Empowerment Act;

**"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;

**"Rand value"** means the total estimated value of a contract in Rand, calculated at the time of the tender invitation;

**"rural area"** means-

- (a) a sparsely populated area in which people farm or depend on natural resources, including villages and small towns that are dispersed through the area; or
- (b) an area including a large settlement which depends on migratory labour and remittances and government social grants for survival, and may have a traditional land tenure system;

**"stipulated minimum threshold"** means the minimum threshold stipulated in terms of regulation 8(1)(b);

**"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000);

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### CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE CONTRACT No.: HGDM 774/HGDM/2021

**“township”** means an urban living area that any time from the late 19th century until 27 April 1994, was reserved for black people, including areas developed for historically disadvantaged individuals post 27 April 1994;

**“treasury”** has the meaning assigned to it in section 1 of the Public Finance Management Act, 1999 (Act No. 1 of 1999); and

**“youth”** has the meaning assigned to it in section 1 of the National Youth Development Agency Act, 2008 (Act No. 54 of 2008).

#### **Application**

2. These Regulations apply to organs of state as envisaged in the definition of organ of state in section 1 of the Act.1

#### **Identification of preference point system, designated sector, pre-qualification criteria, objective criteria and subcontracting**

3. An organ of state must-

(a) determine and stipulate in the tender documents-

(i) the preference point system applicable to the tender as envisaged in regulation 6 or 7; or

(ii) if it is unclear which preference point system will be applicable, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system;

(b) determine whether pre-qualification criteria are applicable to the tender as envisaged in regulation 4;

(c) determine whether the goods or services for which a tender is to be invited, are in a designated sector for local production and content as envisaged in regulation 8;

(d) determine whether compulsory subcontracting is applicable to the tender as envisaged in regulation 9; and

(e) determine whether objective criteria are applicable to the tender as envisaged in regulation 11.

#### **Pre-qualification criteria for preferential procurement**

4.(1) If an organ of state decides to apply pre-qualifying criteria to advance certain designated groups, that organ of state must advertise the tender with a specific tendering condition that only one or more of the following tenderers may respond-

(a) a tenderer having a stipulated minimum B-BBEE status level of contributor;

(b) an EME or QSE;

(c) a tenderer subcontracting a minimum of 30% to-

(i) an EME or QSE which is at least 51% owned by black people;

(ii) an EME or QSE which is at least 51% owned by black people who are youth;

(iii) an EME or QSE which is at least 51% owned by black people who are women;

(iv) an EME or QSE which is at least 51% owned by black people with disabilities;

(v) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;

(vi) a cooperative which is at least 51% owned by black people;

(vii) an EME or QSE which is at least 51% owned by black people who are military veterans;

(viii) an EME or QSE.

(2) A tender that fails to meet any pre-qualifying criteria stipulated in the tender documents is an unacceptable tender.

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**Tenders to be evaluated on functionality**

- 5.(1) An organ of state must state in the tender documents if the tender will be evaluated on functionality.  
(2) The evaluation criteria for measuring functionality must be objective.  
(3) The tender documents must specify-
- (a) the evaluation criteria for measuring functionality;
  - (b) the points for each criteria and, if any, each sub-criterion; and
  - (c) the minimum qualifying score for functionality

<sup>1</sup>The definition of "organ of state" in section 1 of the Act in paragraph (a) to (e) includes-

- a national or provincial department as defined in the Public Finance Management Act, 1999;
- a municipality as contemplated in the Constitution;
- a constitutional institution as defined in the Public Finance Management Act;
- Parliament;
- a provincial legislature.

Paragraph (f) of the definition of organ of state in section 1 of the Act includes any other institution or category of institutions included in the definition of "organ of state" in section 239 of the Constitution and recognised by the Minister by notice in the *Government Gazette* as an institution or category of institutions to which the Act applies. Government Notice R. 501 of 8 June 2011 recognises, with effect from 7 December 2011, all public entities listed in Schedules 2 and 3 to the Public Finance Management Act, 1999, as institutions to which the Act applies. Note should be taken of notices issued from time to time in terms of paragraph (f) of this definition. The application of these Regulations is also subject to applicable exemptions approved in terms of section 3 of the Act.

- (4) The minimum qualifying score for functionality for a tender to be considered further-
- (a) must be determined separately for each tender; and
  - (b) may not be so-
    - (i) low that it may jeopardise the quality of the required goods or services; or
    - (ii) high that it is unreasonably restrictive.
- (5) Points scored for functionality must be rounded off to the nearest two decimal places.  
(6) A tender that fails to obtain the minimum qualifying score for functionality as indicated in the tender documents is not an acceptable tender.  
(7) Each tender that obtained the minimum qualifying score for functionality must be evaluated further in terms of price and the preference point system and any objective criteria envisaged in regulation 11.

**80/20 preference point system for acquisition of goods or services for Rand value equal to or above R30 000 and up to R50 million**

6.(1) The following formula must be used to calculate the points out of 80 for price in respect of a tender with a Rand value equal to or above R30 000 and up to a Rand value of R50 million, inclusive of all applicable taxes:

$$Ps = 80 \left\{ 1 - \frac{(Pt - Pmin)}{Pmin} \right\}$$

Where:-

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

(2) The following table must be used to calculate the score out of 20 for BBBEE:

BBBEE Status Level Contributor	Number of Points
1	20
2	18
3	14
4	12

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5	8
6	6
7	4
8	2
Non-Compliant Contributor	0

- (3) A tenderer must submit proof of its B-BBEE status level of contributor.
- (4) A tenderer failing to submit proof of B-BBEE status level of contributor or is a non-compliant contributor to B-BBEE may not be disqualified, but-
- (a) may only score points out of 80 for price; and
  - (b) scores 0 points out of 20 for B-BBEE.
- (5) A tenderer may not be awarded points for B-BBEE status level of contributor if the tender documents indicate that the tenderer intends subcontracting more than 25% of the value of the contract to any other person not qualifying for at least the points that the tenderer qualifies for, unless the intended subcontractor is an EME that has the capability to execute the subcontract.
- (6) The points scored by a tenderer for B-BBEE in terms of subregulation (2) must be added to the points scored for price under subregulation (1).
- (7) The points scored must be rounded off to the nearest two decimal places.
- (8) Subject to subregulation (9) and regulation 11, the contract must be awarded to the tenderer scoring the highest points.
- (9) (a) If the price offered by a tenderer scoring the highest points is not market-related, the organ of state may not award the contract to that tenderer.
- (b) The organs of state may-
- (i) negotiate a market-related price with the tenderer scoring the highest points or cancel the tender;
  - (ii) if the tenderer does not agree to a market-related price, negotiate a market-related price with the tenderer scoring the second highest points or cancel the tender;
  - (iii) if the tenderer scoring the second highest points does not agree to a market-related price, negotiate a market-related price with the tenderer scoring the third highest points or cancel the tender.
- (c) If a market-related price is not agreed as envisaged in paragraph (b)(iii), the organ of state must cancel the tender.

**90/10 preference point system for acquisition of goods or services with Rand value above R50 million**

7.(1) The following formula must be used to calculate the points out of 90 for price in respect of a tender with a Rand value above R50 million, inclusive of all applicable taxes:

Where

Ps = Points scored for price of tender under consideration;

Pt = Price of tender under consideration; and

Pmin = Price of lowest acceptable tender.

(2) The following table must be used to calculate the points out of 10 for BBBEE:

BBBEE Status Level Contributor	Number of Points
1	10
2	9
3	6
4	5
5	4
6	3
7	2
8	1



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Non-Compliant Contributor	0
---------------------------	---

- (3) A tenderer must submit proof of its B-BBEE status level of contributor.
- (4) A tenderer failing to submit proof of B-BBEE status level of contribution or is a non-compliant contributor to B-BBEE may not be disqualified, but-
- (a) may only score points out of 90 for price; and
  - (b) scores 0 points out of 10 for B-BBEE.
- (5) A tenderer may not be awarded points for B-BBEE status level of contributor if the tender documents indicate that the tenderer intends subcontracting more than 25% of the value of the contract to any other person not qualifying for at least the points that the tenderer qualifies for, unless the intended subcontractor is an EME that has the capability to execute the subcontract.
- (6) The points scored by a tenderer for B-BBEE contribution in terms of subregulation (2) must be added to the points scored for price under subregulation (1).
- (7) The points scored must be rounded off to the nearest two decimal places.
- (8) Subject to subregulation (9) and regulation 11, the contract must be awarded to the tenderer scoring the highest points.
- (9) (a) If the price offered by a tenderer scoring the highest points is not market related, the organ of state may not award the contract to that tenderer.
- (b) The organs of state may-
- (i) negotiate a market-related price with the tenderer scoring the highest points or cancel the tender;
  - (ii) if the tenderer does not agree to a market-related price, negotiate a market-related price with the tenderer scoring the second highest points or cancel the tender;
  - (iii) if the tenderer scoring the second highest points does not agree to a market-related price, negotiate a market-related price with the tenderer scoring the third highest points or cancel the tender.
- (c) If a market-related price is not agreed as envisaged in paragraph (b)(iii), the organ of state must cancel the tender.

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**Local production and content**

- 8.(1) The Department of Trade and Industry may, in consultation with the National Treasury-
- (a) designate a sector, sub-sector or industry or product in accordance with national development and industrial policies for local production and content, where only locally produced services or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content, taking into account economic and other relevant factors; and
  - (b) stipulate a minimum threshold for local production and content.
- (2) An organ of state must, in the case of a designated sector, advertise the invitation to tender with a specific condition that only locally produced goods or locally manufactured goods, meeting the stipulated minimum threshold for local production and content, will be considered.
- (3) The National Treasury must inform organs of state of any designation made in terms of regulation 8(1) through a circular.
- (4) (a) If there is no designated sector, an organ of state may include, as a specific condition of the tender, that only locally produced services or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.  
(b) The threshold referred to in paragraph (a) must be in accordance with the standards determined by the Department of Trade and Industry in consultation with the National Treasury.
- (5) A tender that fails to meet the minimum stipulated threshold for local production and content is an unacceptable tender.

**Subcontracting as condition of tender**

- 9.(1) If feasible to subcontract for a contract, an organ of state must apply subcontracting to advance designated groups.
- (2) If an organ of state applies subcontracting as contemplated in sub regulation (1), the organ of state must advertise the tender with a specific tendering condition that the successful tenderer must subcontract a minimum of threshold of the value of the contract as follows:
- Subcontracting to start from R5 million to be 5%
  - Appoint 2 sub-contractors between R10 million to R20 million at R1.5 million each
  - Appoint 3 sub-contractors for R30 million at R3 million each
  - Sub-contractors to be mentored and capacitated by main contractor

The subcontractors are to be from the following designated groups: an EME or OSE;

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- (b) an EME or QSE which is at least 51% owned by black people;
  - (c) an EME or QSE which is at least 51% owned by black people who are youth ;
  - (d) an EME or QSE which is at least 51% owned by black people who are women;
  - (e) an EME or QSE which is at least 51% owned by black people with disabilities ;
  - (f) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
  - (g) a cooperative which is at least 51% owned by black people;
  - (h) an EME or QSE which is at least 51% owned by black people who are military veterans; or
  - (i) more than one of the categories referred to in paragraphs (a) to (h).
- (3) The organ of state must make available the list of all suppliers registered on a database approved by the National Treasury to provide the required goods or services in respect of the applicable designated groups mentioned in subregulation (2) from which the tenderer must select a supplier.

**Criteria for breaking deadlock in scoring**

- 10.(1) If two or more tenderers score an equal total number of points, the contract must be awarded to the tenderer that scored the highest points for B-BBEE.

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- (2) If functionality is part of the evaluation process and two or more tenderers score equal total points and equal preference points for B-BBEE, the contract must be awarded to the tenderer that scored the highest points for functionality.
- (3) If two or more tenderers score equal total points in all respects, the award must be decided by the drawing of lots.

#### **Award of contracts to tenderers not scoring highest points**

- 11.(1) A contract may be awarded to a tenderer that did not score the highest points only in accordance with section 2(1)(f) of the Act.
- (2) If an organ of state intends to apply objective criteria in terms of section 2(1)(f) of the Act, the organ of state must stipulate the objective criteria in the tender documents.

#### **Subcontracting after award of tender**

- 12.(1) A person awarded a contract may only enter into a subcontracting arrangement with the approval of the organ of state.
- (2) A person awarded a contract in relation to a designated sector, may not subcontract 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.
- (3) A person awarded a contract may not subcontract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level of contributor than the person concerned, unless the contract is subcontracted to an EME that has the capability and ability to execute the subcontract.

#### **Cancellation of tender**

13. (1) An organ of state may, before the award of a tender, cancel a tender invitation if-
  - (a) due to changed circumstances, there is no longer a need for the goods or services specified in the invitation;
  - (b) funds are no longer available to cover the total envisaged expenditure;
  - (c) no acceptable tender is received; or
  - (d) there is a material irregularity in the tender process.
- (2) The decision to cancel a tender invitation in terms of sub regulation (1) must be published in the same manner in which the original tender invitation was advertised.
- (3) An organ of state may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

#### **Remedies**

- 14.(1) Upon detecting that a tenderer submitted false information regarding its BBBEE status level of contributor, local production and content, or any other matter required in terms of these Regulations which will affect or has affected the evaluation of a tender, or where a tenderer has failed to declare any subcontracting arrangements, the organ of state must-
  - (a) inform the tenderer accordingly;
  - (b) give the tenderer an opportunity to make representations within 14 days as to why-
    - (i) the tender submitted should not be disqualified or, if the tender has already been awarded to the tenderer, the contract should not be terminated in whole or in part;
    - (ii) if the successful tenderer subcontracted a portion of the tender to another person without disclosing it, the tenderer should not be penalised up to 10 percent of the value of the contract; and
    - (iii) the tenderer should not be restricted by the National Treasury from conducting any business for a period not exceeding 10 years with any organ of state; and
  - (c) if it concludes, after considering the representations referred to in sub regulation (1)(b), that-

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- (i) such false information was submitted by the tenderer-
    - (aa) disqualify the tenderer or terminate the contract in whole or in part; and
    - (bb) if applicable, claim damages from the tenderer; or
  - (ii) the successful tenderer subcontracted a portion of the tender to another person without disclosing, penalise the tenderer up to 10 percent of the value of the contract.
- (2) (a) An organ of state must-
- (i) inform the National Treasury, in writing, of any actions taken in terms of sub regulation (1);
  - (ii) provide written submissions as to whether the tenderer should be restricted from conducting business with any organ of state; and
  - (iii) submit written representations from the tenderer as to why that tenderer should not be restricted from conducting business with any organ of state.
- (b) The National Treasury may request an organ of state to submit further information pertaining to sub-regulation (1) within a specified period.
- (3) The National Treasury must-
- (a) after considering the representations of the tenderer and any other relevant information, decide whether to restrict the tenderer from doing business with any organ of state for a period not exceeding 10 years; and
  - (b) maintain and publish on its official website a list of restricted suppliers.

#### Circulars and guidelines

15. The National Treasury may issue-

- (a) a circular to inform organs of state of any matter pertaining to these Regulations; or
- (b) a guideline to assist organs of state with the implementation of any provision of these Regulations.

#### Repeal of Regulations and saving

16.(1) Subject to this regulation, the Preferential Procurement Regulations, 2011, published in Government Notice No R. 502 of 8 June 2011 (herein called "the 2011 Regulations), are hereby repealed with effect from the date referred to in regulation 17.

(2) Any sector designated, and minimum threshold determined for local production and content for purposes of regulation 9 of the 2011 Regulations and in force immediately before the repeal of the 2011 Regulations, are regarded as having been done under regulation 8(1) of these Regulations.

(3) Any tender advertised before the date referred to in regulation 17 must be dealt with in terms of the 2011 Regulations.

#### Short title and commencement

17. These Regulations are called the Preferential Procurement Regulations, 2017 and take effect on 1 April 2017.

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**FORM N: MBD4 Form**

**MBD 4**

**DECLARATION OF INTEREST**

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

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

3.2 Identity Number: .....

3.3 Position occupied in the Company (director, trustee, hareholder<sup>2</sup>):.....

3.4 Company Registration Number: .....

3.5 Tax Reference Number:.....

3.6 VAT Registration Number: .....

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

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

3.8.1 If yes, furnish particulars. ....

<sup>1</sup>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

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(Act No.1 of 1999);

- (e) a member of the accounting authority of any national or provincial public entity; or
- (f) an employee of Parliament or a provincial legislature.

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

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

3.9.1 If yes, furnish particulars.....

.....

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

3.10.1 If yes, furnish particulars.

.....

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

3.11.1 If yes, furnish particulars

.....

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

3.12.1 If yes, furnish particulars.

.....

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

3.13.1 If yes, furnish particulars.

.....

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

**YES / NO**

3.14.1 If yes, furnish particulars:

.....  
.....

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

Full Name	Identity Number	State Employee Number

.....  
**Signature**

.....  
**Date**

.....  
**Capacity**

.....  
**Name of Bidder**

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**FORM O: BBEE Certificate, Company Registration Documents and Other  
Documents**

Tenderers are to attach certified copies of the following documentation to this page:

- BBEE Certificate
- Company Registration Documents
- Identity Documents of Company Shareholders/members.

**Tenderers are to note that failure to submit the above documentation may result in the non-award of other preference points during tender evaluation**



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**FORM P: Joint Venture Disclosure Form**

**EMPLOYER** : Harry Gwala District Municipality  
**CONTRACT DESCRIPTION** : CONSTRUCTION OF 500KL STEEL TANK RESERVOIR,  
TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
**CONTRACT NUMBER** : HGDM 774/HGDM/2021  
**PROJECT REFERENCE** :  
**NUMBER** :

- Note:
- 1) This form needs not be completed for Joint Ventures which have targeted enterprise partners.
  - 2) All the information requested must be filled in the spaces provided. If additional space is required, additional sheets may be attached.
  - 3) A copy of the joint venture agreement must be attached to this form. In order to demonstrate the targeted enterprise partner's share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details relating to:
    - i) The contributions of capital and equipment
    - ii) Work items to be performed by the targeted enterprise partner's own forces.
    - iii) Work items to be performed under the supervision of the targeted enterprise partner.
    - iv) The commitment of management, supervisory and operative personnel employed by the targeted enterprise partner to be dedicated to the performance of the Contract.
  - 4) Copies of all written agreements between partners concerning the contract must be attached to this form including those which relate to ownership options and to restrictions/limits regarding ownership and control.
  - 5) Targeted enterprise partners must each complete an Enterprise Declaration Affidavits.

**JOINT VENTURE PARTICULARS**

Name : \_\_\_\_\_  
Postal address : \_\_\_\_\_  
Physical address : \_\_\_\_\_  
Telephone : \_\_\_\_\_ Fax \_\_\_\_\_

**IDENTITY OF EACH NON-TARGETED ENTERPRISE PARTNERS**

Name : \_\_\_\_\_  
Postal address : \_\_\_\_\_  
Physical address : \_\_\_\_\_  
Telephone : \_\_\_\_\_ Fax \_\_\_\_\_  
Contact Person : \_\_\_\_\_

(Continue as required for further non-targeted enterprise partners)

Name : \_\_\_\_\_  
Postal address : \_\_\_\_\_

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Physical address : \_\_\_\_\_  
 Telephone : \_\_\_\_\_ Fax \_\_\_\_\_  
 Contact Person : \_\_\_\_\_

**IDENTITY OF EACH TARGETED ENTERPRISE PARTNER**

Name : \_\_\_\_\_  
 Postal address : \_\_\_\_\_  
 Physical address : \_\_\_\_\_  
 Telephone : \_\_\_\_\_ Fax \_\_\_\_\_  
 Contact Person : \_\_\_\_\_

Name : \_\_\_\_\_  
 Postal address : \_\_\_\_\_  
 Physical address : \_\_\_\_\_  
 Telephone : \_\_\_\_\_ Fax \_\_\_\_\_  
 Contact Person : \_\_\_\_\_

Name : \_\_\_\_\_  
 Postal address : \_\_\_\_\_  
 Physical address : \_\_\_\_\_  
 Telephone : \_\_\_\_\_ Fax \_\_\_\_\_  
 Contact Person : \_\_\_\_\_

**DESCRIPTION OF THE ROLE OF THE TARGETED PARTNERS IN THE JOINT VENTURE**


**OWNERSHIP OF THE JOINT VENTURE**

a) Percentage Ownership in respect of	:	Targeted Enterprises	_____ %	Targeted Enterprises	_____ %
b) Profit and Loss Sharing	:	Targeted Enterprises	_____ %	Targeted Enterprises	_____ %
c) Initial Capital Contribution	:	Targeted Enterprises	_____ R	Targeted Enterprises	_____ R
d) Ongoing Capital Contribution	:	Targeted Enterprises	_____ R	Targeted Enterprises	_____ R
e) Major Plant and Equipment Contribution	:	Targeted Enterprises	_____	Targeted Enterprises	_____

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**RECENT CONTRACTS EXECUTED BY PARTNERS IN THEIR OWN RIGHT OR AS PARTNERS IN OTHER JOINT VENTURES**

**Targeted Enterprise Partners**

- 1. : \_\_\_\_\_
- 2. : \_\_\_\_\_
- 3. : \_\_\_\_\_
- 4. : \_\_\_\_\_
- 5. : \_\_\_\_\_

**Non-Targeted Enterprise Partners**

- 1. : \_\_\_\_\_
- 2. : \_\_\_\_\_
- 3. : \_\_\_\_\_
- 4. : \_\_\_\_\_
- 5. : \_\_\_\_\_

**CONTROL AND PARTICIPATION IN THE JOINT VENTURE**

(Identify by name and firm those individuals who are, or will be, responsible for, and have authority to engage in the relevant management functions and policy and decision making, indicating any limitations in their authority e.g. co-signature requirements and Rand limits).

Function	Targeted Enterprise Partner		Non-Targeted Enterprise	
	Enterprise	Name of Person	Enterprise	Name of Person
Cheque Signing				
Authority to enter into contracts on behalf of the Joint Venture				
Signing, co-signing and/or collateralizing of loans				
Acquisition of lines of credit				
Acquisition of performance bonds				
Negotiating and signing labour agreements				

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**CONTRACT No.: HGDM 774/HGDM/2021**

**MANAGEMENT OF CONTRACT PERFORMANCE**

(Fill in the name and firm of the responsible person).

Function	Targeted Enterprise Partner		Non-Targeted Enterprise	
	Enterprise	Name of Person	Enterprise	Name of Person
Supervision of field operations				
Major purchasing				
Estimating				
Technical management				

**MANAGEMENT AND CONTROL OF JOINT VENTURE**

- a) Managing Partner : \_\_\_\_\_
- b) What authority does each partner have to commit or obligate the other to financial institutions, insurance companies, suppliers, subcontractors and /or other parties participating in the execution of the contemplated works?

Partner	Targeted Enterprise Status		Authority Status	
	YES	NO	YES	NO

**PERSONNEL**

- a. State the approximate number of operative personnel (by trade/ function/ discipline) needed to perform the Joint Venture work under the contract.

TRADE/FUNCTION/	Total Qty Required	Qty supplied by Targeted Enterprise	Qty supplied by non-Targeted Enterprise

- b) Name of individual who will be responsible for hiring Joint Venture employees : \_\_\_\_\_
- c) Name of individual who will be responsible for preparation of Joint Venture payrolls : \_\_\_\_\_

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CONTROL AND STRUCTURE OF THE JOINT VENTURE**

Briefly describe the manner in which the Joint Venture is structured and controlled.


The undersigned warrants that he/she is duly authorized to sign this Joint Venture Disclosure Form and affirms that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operations of the Joint Venture and the intended participation of each partner in the undertaking.

The undersigned further covenants and agrees to provide the Employer with complete and accurate information regarding actual Joint Venture work and the payment therefore, and any proposed changes in any provisions of the Joint Venture agreement, and to permit the audit and examination of the books, records and files of the Joint Venture, or those of each partner relevant to the Joint Venture, by duly authorized representatives of the Employer.

Signature : \_\_\_\_\_  
Name : \_\_\_\_\_  
Duly authorised to sign on behalf of : \_\_\_\_\_  
Address : \_\_\_\_\_  
Telephone : \_\_\_\_\_  
Fax : \_\_\_\_\_  
Date : \_\_\_\_\_

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
CONTRACT No.: HGDM 774/HGDM/2021**

**FORM Q: Schedule of Construction Plant & Equipment**

The following are lists of major Construction Plant and Equipment that I / We presently own or Lease and will have available for this contract if my / our tender is accepted.

- (a) **Details of major equipment that is owned by me / us and immediately available for this contract.**

<b>DESCRIPTION (type, size, capacity etc)</b>	<b>QUANTITY</b>	<b>YEAR OF MANUFACTURE</b>

**Attach additional pages if more space is required**

- (b) **Details of major Plant & Equipment that will be hired, or acquired for this contract if my / our tender is accepted**

<b>DESCRIPTION (type, size, capacity etc)</b>	<b>QUANTITY</b>	<b>HOW ACQUIRED</b>	
		<b>HIRE/ BUY</b>	<b>SOURCE</b>

**Attach additional pages if more space is required**

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

DATE: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

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CONTRACT No.: HGDM 774/HGDM/2021**

**FORM R: Schedule of Proposed Sub-Contractors**

I/We hereby notify you that it is my/our intention to employ the following Sub-Contractors for work in this contract.

NAMES AND ADDRESSES OF PROPOSED SUBCONTRACTORS	NATURE AND EXTENT OF WORK TO BE SUBCONTRACTED	PREVIOUS EXPERIENCE WITH SUBCONTRACTOR OR RECENT WORK EXECUTED BY THE SUB-CONTRACTOR

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

**DATE:** .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
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**FORM S: Record of Addenda to Tender Documents**

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

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

Attach additional pages if more space is required.

Signed: ..... Date: .....

Name: ..... Position: .....

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



**HARRY GWALA DISTRICT MUNICIPALITY**

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**CONTRACT No.: HGDM 774/HGDM/2021**

**FORM T: Key Personnel**

Tenderers shall provide details of the Site Agent(s) and General Foreman's experience in work of a similar nature to that for which their tender is submitted.

Failure to complete this schedule may result in the tender not being considered.

**(a) Contracts Manager**

<b>CONTRACTS MANAGER</b>	<b>NAME:.....</b>			
<b>CONTRACT &amp; CLIENT</b>	<b>NATURE OF WORK</b>	<b>POSITION HELD</b>	<b>VALUE OF WORK</b>	<b>YEAR COMPLETED</b>

**(b) Site Agent**

<b>SITE AGENT</b>	<b>NAME:.....</b>			
<b>CONTRACT &amp; CLIENT</b>	<b>NATURE OF WORK</b>	<b>POSITION HELD</b>	<b>VALUE OF WORK</b>	<b>YEAR COMPLETED</b>

**(c) Foreman**

<b>GENERAL FOREMAN</b>	<b>NAME:.....</b>			
<b>CONTRACT &amp; CLIENT</b>	<b>NATURE OF WORK</b>	<b>POSITION HELD</b>	<b>VALUE OF WORK</b>	<b>YEAR COMPLETED</b>

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 600KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE  
CONTRACT No.: HGDM 774/HGDM/2021**

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

DATE: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 774/HGDM/2021**

**Tenderers to attach CV of the following proposed site staff:**

- 1. Contracts Manger**
- 2. Site Agent**
- 3. Foreman**

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 774/HGDM/2021**

**FORM U: Rates for Special Materials**

Each material dealt with as a special material in terms of Clause 4 of the Contract Price Adjustment Schedule of the Conditions of Contract is stated in the list below. The rates and prices for the special materials shall be furnished by the Tenderer, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies.

SPECIAL MATERIAL	UNIT*	Rate or Price for the Base Month

Indicate whether the material will be delivered in bulk or in containers.

**Notes to Tenderer:**

**When called upon to do so, the tenderer shall substantiate the above rates or prices with acceptable documentary evidence.**

Signed: ..... Date: .....

Name: ..... Position: .....

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

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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CONTRACT No.: HGDM 774/HGDM/2021**

**FORM V: Contractor's Health and Safety Declaration**

In terms of Clause 4(4) of the OHS Act 1993 Construction Regulations 2003 (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 2003.

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 2003.
2. I hereby declare that my company / enterprise 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 undertake, if my tender is accepted, to provide a sufficiently documented Health and Safety Plan in accordance with Regulation 5(1) of the Construction Regulations, approved by the Employer or his representative, before I will be allowed to commence with construction work under the contract. I hereby agree that my company/enterprise will not have a claim for compensation for delay or extension of time because of my failure to obtain the necessary approval for the said safety plan.
4. I confirm that copies of my company's approved Health and Safety Plan, the Employer's Safety Specifications as well as the OHS Act 1993 Construction Regulations 2003 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.
5. 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 2003, including the cost for specific items that may be scheduled in the bill of quantities.
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 for failure on my part to comply with the provisions of the Act and the Regulations as set out in Regulation 30 of 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 Act 1993 Construction Regulations 2003, and accept that my tender will be prejudiced and may be rejected at the discretion of the Employer.
8. I am aware of the fact that, should I be awarded the contract, I must submit the notification required in terms of Regulation 3 of the OHS Act 1993 Construction Regulations 2003 (*example attached hereafter*) before I will be allowed to proceed with any work under the contract.

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

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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PRO FORMA NOTIFICATION FORM IN TERMS OF THE OCCUPATIONAL HEALTH AND  
SAFETY ACT 1993 , CONSTRUCTION REGULATIONS 2003

*[In terms of Regulation 3 of the Construction Regulations 2003, the successful Tenderer must complete and forward this form prior to commencement of work to the office of the Department of Labour.]*

1. (a) Name and postal address of Contractor: .....
- (b) Name of Contractor's contact person: .....
- Telephone number: .....
2. Contractor's compensation registration number: .....
3. (a) Name and postal address of client: .....
- (b) Name of client's contact person or agent: .....
- Telephone number .....
4. (a) Name and postal address of designer(s) for the project: .....
- (b) Name of designer's contact person: .....
- Telephone number .....
5. Name of Contractor's construction supervisor on site appointed in terms of Regulation 6(1): .....
- Telephone number: .....
6. Name/s of Contractor's sub-ordinate supervisors on site appointed in terms of regulation 6(2).  
.....
7. Exact physical address of the construction site or site office: .....
- .....
8. Nature of the construction work: .....
- .....
9. Expected commencement date: .....
10. Expected completion date: .....
11. Estimated maximum number of persons on the construction site: .....
12. Planned number of subcontractors on the construction site accountable to Contractor: .....
13. Name(s) of subcontractors already chosen: .....
- .....
- .....

SIGNED BY:  
CONTRACTOR: ..... DATE: .....

CLIENT: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

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**FORM W: UIF Registration Certificate**

***Tenderers to attach copy of UIF Registration Certificate***

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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**FORM X: Certificate of Municipal Services**

Information required in terms of the Harry Gwala District Municipality's Supply Chain Management Policy.  
Latest municipal services account statement must be attached.

<b>Tender Number:</b> HGDM 774/HGDM/2021
<b>Name of the Tenderer:</b> _____

**FURTHER DETAILS OF THE BIDDER/S: Proprietor / Director(s) / Partners, etc:**

Physical Business address of the Bidder	Municipal Account Number(s)

If there is not enough space for all the names, please attach the additional details to the Tender document.

Name of Director / Member / Partner	Identity Number	Physical residential address of Director / Member / Partner	Municipal Account number(s)

I, \_\_\_\_\_, the undersigned,  
*(full name in block letters)*

certify that the information furnished on this declaration form is correct and that I/we have no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days.

\_\_\_\_\_  
Signature

THUS DONE AND SIGNED for and on behalf of the Bidder / Contractor

at \_\_\_\_\_ on the \_\_\_\_\_ day of \_\_\_\_\_ 2020



**HARRY GWALA DISTRICT MUNICIPALITY**

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**Please note:**

**Even if the requested information is not applicable to the Bidder, the table above should be endorsed NOT APPLICABLE and THIS DECLARATION MUST STILL BE SIGNED.**

**MUNICIPAL SERVICES STATEMENT**

***Tenderers are to attach the latest statement (not more than 3 months old) from the municipality where the Tenderer receives municipal services***

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**HGDM 774/HGDM/2021**

**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE  
(MIG)**

**CONTRACT NO: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND  
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**PART C1: AGREEMENTS AND CONTRACT DATA**

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**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

HGDM 774/HGDM/2021

**PART C1: AGREEMENTS AND CONTRACT DATA**

**C1.1 Form of Offer and Acceptance**

**A: Offer**

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a Contract for the procurement of: **Contract No.: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

The Tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this apart 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 PRICE INCLUSIVE OF VALUE ADDED TAX (VAT) IS**

.....  
..... Rand (in words);  
R..... (In figures),

This offer may be accepted by the employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

**Signature:** .....

**Name: (in capitals)** .....

**Capacity:** .....

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

**Address:** .....  
.....  
.....

**Tel:** ..... **Fax:** .....

**Witness:**

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

**Date:** .....

**CIDB Registration NO:** .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

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**B: Acceptance**

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

The terms of the contract, are contained in

Part C1 Agreements and contract data, (which includes this agreement)

Part C2 Pricing data

Part C3 Scope of work

Part C4 Site information

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

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

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to 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 working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

**Signature:** .....

**Name: (in capitals)** .....

**Capacity:** .....

**Name of Employer (organisation):** .....

**Address:** .....

.....

.....

**Witness:**

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

**Date:** .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

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**C: Schedule of Deviations**

**Notes:**

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

**Subject** \_\_\_\_\_  
**Details** \_\_\_\_\_  
\_\_\_\_\_

**Subject** \_\_\_\_\_  
**Details** \_\_\_\_\_  
\_\_\_\_\_

**Subject** \_\_\_\_\_  
**Details** \_\_\_\_\_  
\_\_\_\_\_

**Subject** \_\_\_\_\_  
**Details** \_\_\_\_\_  
\_\_\_\_\_

**Subject** \_\_\_\_\_  
**Details** \_\_\_\_\_  
\_\_\_\_\_

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

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

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**FOR THE TENDERER:**

**Signature:** .....

**Name:** .....

**Capacity:** .....

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

.....

**Witness:**

**Signature:** .....

**Name:** .....

**Date:** .....

**FOR THE EMPLOYER**

**Signature:** .....

**Name:** .....

**Capacity:** .....

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

.....

**Witness:**

**Signature:** .....

**Name:** .....

**Date:** .....

**HARRY GWALA DISTRICT MUNICIPALITY**

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**D: Confirmation of Receipt**

---

The Tenderer, (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, 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

**HARRY GWALA DISTRICT MUNICIPALITY**

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**PART C1.2 CONTRACT DATA**

**C1.2.1 General Conditions of Contract**

The General Conditions of Contract for Construction Works, Third Edition (2015) published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685 is applicable to this contract.

Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (Tel 011- 805 5947, Fax: 011 – 805 5971).

The Contract Data referred to in the General Conditions of Contract follow, with the Data to be completed Employer furnished. The Tenderer is to provide his details in the spaces provided



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CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

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**C1.2.2 Contract Data Provided by Employer**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

	<b>GCC 2015 Clause</b>	
Name of Employer	1.1.14	Name of Employer: Harry Gwala District Municipality
Address of Employer	1.2.2	The Address of the Employer is: 40 Main Street, IXOPO, 3276 P O Box X501, IXOPO, 3276 Email address: Tel: +27 39 834 8700 Fax: +27 39 834 1714
Name of Engineer	1.1.15	BM JV Rudkor Consulting
Name of Employers Agent	1.1.1.16	BM JV Rudkor Consulting represented by Andile Tulelo
Address of the Employers Agent	1.2.1.2	BM JV Rudkor Consulting No. 48 Flamingo Drive Southernwood, Mthatha 5099 Telephone: 047 531 0424 Fax: 047 531 0409 Email: <a href="mailto:info@bmengineers.co.za">info@bmengineers.co.za</a>
Pricing Strategy	1.1.1.26	Re-measurement Contract
Subcontracting	4.4	Add the following new Clause: <b>The contractor will be required to subcontract up to a maximum of 30% of the work to local subcontractors. The work to be subcontracted will be agreed with the Employer.</b>
Documentation Required Before Commencement of Construction Works	5.3.1	Health and Safety File (Refer to Clause 4.3) Initial Programme (Refer to Clause 5.6) Security (Refer to Clause 6.2) Insurances (Refer to Clause 8.6)
Time to Submit the Documentation Before Commencement with the Works	5.3.2	14 days after commencement date

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

HGDM 774/HGDM/2021

	GCC 2015 Clause	
Special Nonworking days	5.8.1	<p>1. Public Holidays</p> <p>2. The year-end break commencing on the first day working day after 15 December and ending on the first Tuesday after 5 January of the next year.</p> <p>3. Sundays</p>
Penalty for Failing to Complete the Works	5.13.1	For each and every order issued, the contractor must produce a detailed programme. Should the Contractor fail to complete the works within the specified period in the programme, an amount of <b>R13 777.75</b> per calendar day shall be levied. Such monies shall be deducted from any monies due to the Contractor or which shall become due to the Contractor. The Harry Gwala District Municipality reserves the right to withdraw all sites awarded to him and issue these sites to another Contractor.
The Latent Defect Period	5.16.3	12 months
Contract Price Adjustment Schedule	6.8.2	<p>x = 0,15 a = 0,20 b = 0,20 c = 0,50 d = 0,10</p> <p>'L' shall be the "Weighted Average" index , P0141, Table A</p> <p>'F' shall be the "Fuel (Diesel)" index given in P0142.1 Table 12 for KwaZulu Natal</p>
Area for Producer Price Index		Pietermaritzburg and Kokstad
Base Month		Month before closing date of Tenders
The Percentage Advance on Materials not yet Built into the Permanent Works	6.10.1.5	80% (subject to provision of Indemnity for Materials on Site)
Limit of Retention Money	6.10.3	<p>The amount to be retained by the Employer will be a sum equal to ten percent (10%) of the value of the works, 5% held for defects liability period</p> <p>The defects liability period for the project is twelve (12) months, in line with the maintenance period per project or order given to the contractor from time to time under this contract. It is recorded that if the Contractor fails to make good defects as may be certified by the Engineer, all retention monies as at the date of that default certificate shall be forfeited by the Contractor to the Employer without prejudice to the Employer's rights in terms of the Contract.</p>

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

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	<b>GCC 2015 Clause</b>	
Liability of Guarantee	7	<p>The Contractor shall submit within seven (7) days from date of receipt of the Provisional Letter of Acceptance, to the Head: Supply Chain Management, the following Insurances and Surety:</p> <ul style="list-style-type: none"> <li>• Third Party Insurance to the value of R1 000 000.00 (for any single claim) for any damages to private property/persons arising out of this contract. The policy must be in force for the full duration of the contract period. For any single claim.</li> <li>• Works Insurance to an amount of the total tender amount.</li> </ul> <p>Further to the above, the Contractor shall indemnify the Council and its employees and agents against all losses and claims for injuries or damages to any person or property whatsoever which may arise out of the execution of this contract.</p> <p>When the Head: Supply Chain Management is, in her absolute discretion satisfied with the above arrangements, a Final Letter of Acceptance will be forwarded to the Contractor, confirming that the tender and the letter constitute a binding agreement between the Contractor and the Harry Gwala District Municipality.</p>
Amount to cover professional fees for repairing damage and loss	8.6.1.1.3	14% of Required
Limit of Indemnity for Liability Insurance	8.6.1.3	Third Party Insurance to the value of R1 000 000.00 (for any single claim) for any damages to private property/persons arising out of this contract. The policy must be in force for the full duration of the contract period. For any single claim.
Dispute Resolution	10.5.1	Standing Adjudication Board
Number of Adjudication Board Members to be Appointed	10.5.3	One
Dispute Determination	10.7.1	Dispute Determination shall be by Arbitration

SIGNATURE OF TENDERER: .....

DATE: .....

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**C1.2.3 Data Provided by Contractor**

	<b>GCC 2015 Clause</b>	
Name of Contractor*	1.1.1.9	.....
Address of Contractor*	1.2.1.2	..... ..... .....
Tel:		.....
Fax:		.....
Email:		.....
Time of Completion:*	1.1.1.14	..... <b>Weeks</b>
Security to be Provided by Contractor	6.2.1	Refer to Table Below

Type of Security	Contractor's Choice (Indicate "YES" or "NO")	
<i>Is Value Added Tax included in the Contract Sum and value of Works for calculating percentages?</i>		
Cash deposit of .....% of the Contract Sum		
Performance Guarantee of .....% of the Contract Sum		
Retention of .....% of the value of Works		
Cash Deposit of .....% of the Contract Sum plus Retention of .....% of the value of Works		
Performance Guarantee of .....% of the Contract Sum plus Retention of .....% of the value of Works		
Price variation of special materials*	6.8.3	.....

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Type of Special Material	Unit	Rate or Price*
Rate or price for base month of*	6.8.2	.....

***Tenderers are to note that failure to provide a time for completion of the contract will invalidate the tender offer.***

***\* To be completed by Tenderer***

Signature: .....

Name of Signatory: .....

Date: .....

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**C1.3: FORM OF GUARANTEE**

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

**GUARANTOR DETAILS AND DEFINITIONS**

"Guarantor" means: .....

Physical Address: .....

"Employer" means: .....

"Contractor" means: .....

"Engineer" means: .....

"Works" means: .....

"Site" means: .....

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

"Contract Sum" means: The accepted amount inclusive of tax of R .....  
Amount in words: .....

.....

"Expiry Date" means: .....

**CONTRACT DETAILS**

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

**PERFORMANCE GUARANTEE**

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and / or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
3. The Guarantor hereby acknowledges that :
  - 3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create suretyship;
  - 3.2 its obligation under this Performance Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

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- 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
- 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
- 4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
  - 5.1 the contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
  - 5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
  - 5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/ or the provisional/ final sequestration and / or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
8. Payment by Guarantor in terms of 4 or shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
9. Payment of the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
10. The employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from his Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

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11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as liquid document for the purposes of obtaining a court order.
14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1994, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at .....

Date .....

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

Capacity .....

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

Capacity .....

Witness signatory (1) .....

Witness signatory (2) .....



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**C1.4: DISCLOSURE STATEMENT**

(Date).....

Contract: (Name).....

Contractor: (Name).....

Employer: (Name).....

Engineer: (Name).....

Dear Sirs,

I am willing and available to serve as (ad-hoc/standing) Adjudication Board Member in the above mentioned Contract.

In accordance with the General Conditions of Contract for Construction Works Adjudication Board Rules relating to disclosure statements by selected or nominated persons to the adjudication, I hereby state that:

1. I shall act with complete impartiality and know of nothing at this time, which could affect my impartiality.
2. I had no previous involvement with this project.
3. I do not have any financial interest in this project.
4. I am not currently employed by the Contractor, Employer or Engineer.
5. I do not have any financial connections with the Contractor, Employer or Engineer.
6. I do not have or not have had a personal relationship with any authoritative member of the Contractor, Employer or the Engineer which could affect my impartiality.
7. I undertake to immediately disclose to the parties any changes in the above position which could affect my impartiality or be perceived to affect the same.

*Should there be any deviation from the foregoing statements, details shall be given hereunder.*

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

I further declare that I am experienced in the work which is carried out under the Contract and in interpreting contract documentation.

Name in full: .....

Signature: .....

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

THIS AGREEMENT is made between **HARRY GWALA DISTRICT MUNICIPALITY** (hereinafter called the

EMPLOYER) of the one part, herein represented by: .....

in his capacity as: .....

AND: .....

(hereinafter called the CONTRACTOR) of the other part, herein represented by .....

in his capacity as: .....

duly authorized to sign on behalf of the Contractor.

**WHEREAS** the CONTRACTOR is the Mandatory of the EMPLOYER in consequence of an agreement between the CONTRACTOR and the EMPLOYER in respect of

CONTRACT No: ..... (CONTRACT TITLE)

.....  
for the construction, completion and maintenance of the works;

AND WHEREAS the EMPLOYER and the CONTRACTOR have agreed to enter into an agreement in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act No 85 of 1993, as amended by OHS Act Amendment Act No 181/1993 (hereinafter referred to as the ACT);

**NOW THEREFORE** the parties agree as follows:

1. The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.
2. The CONTRACTOR undertakes to fully comply with all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations: Provided that should the EMPLOYER have prescribed certain arrangements and procedures that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.
3. The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures, if any, imposed by the ACT and Regulations, and the CONTRACTOR expressly absolves the EMPLOYER and the Employer's CONSULTING ENGINEERS from being obliged to

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comply with any of the aforesaid duties, obligations, prohibitions, arrangements and procedures in respect of the work included in the contract.

4. The CONTRACTOR agrees that any duly authorized officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with his undertakings as more fully set out in paragraphs 1 and 2 above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to take such steps it may deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.
  
5. The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the ACT and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

Thus signed at ..... for and on behalf of the  
**CONTRACTOR**

on this the ..... day of ..... 20.....

SIGNATURE: .....

NAME AND SURNAME: .....

CAPACITY: .....

WITNESSES: 1. ....

2. ....

Thus signed at ..... for and on behalf of the  
**EMPLOYER**

on this the ..... day of ..... 20.....

SIGNATURE: .....

NAME AND SURNAME: .....

CAPACITY: .....

WITNESSES: 1. ....

2. ....

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**C1.6 ADJUDICATOR'S BOARD MEMBER AGREEMENT**

This Agreement is entered into between:

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

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

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

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

The Parties entered into a Contract for .....  
*(name of project)* which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Second Edition, 2010, must be referred to *(ad-hoc adjudication/ standing adjudication\*\*)*.

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

1. The Adjudication Board Member accepts to perform his duties in accordance with the terms of the Contract, the General Conditions of Contract for Construction Works Adjudication Board Rules and this Agreement.
2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Engineer for the duration of the Adjudication Board proceedings.
3. The Adjudication Board Member agrees to serve for the duration of the Adjudication Board proceedings.

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4. The Parties may at any time, without cause and with immediate effect, jointly terminate this Agreement.
5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No Party may call the Adjudication Board Member as a witness in any such subsequent proceedings.
6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.
7. The Adjudication Board Member shall be paid in respect of time spent upon or in connection with the adjudication including time spent travelling :
  - a. A monthly retainer of R.....(*amount*) for .....(*number*) of months, and /or
  - b. A daily fee of R.....(*amount*) based on a .....(*number*) hour day, and /or
  - c. A hourly fee of R.....(*amount*), and /or
  - d. A non- recurrent appointment fee of R.....(*amount*) which shall be accounted for in the final sums payable.
8. The Adjudication Board Member's expenses incurred in adjudication work shall be reimbursed at cost.

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

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This Agreement is entered into by:

Contractor's Signature : .....

Contractor's name : .....

Place : .....

Date : .....

Employer's signature : .....

Employer's name : .....

Place : .....

Date : .....

Adjudication Board Member's signature : .....

Adjudication Board Member's name : .....

Place : .....

Date : .....

*\*\*Delete the inapplicable party*

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**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE  
(MIG)**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND  
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**PART C2: PRICING DATA**

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**PART C2: PRICING DATA**

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**C2.1 PRICING INSTRUCTIONS**

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

Although the Tenderer is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Bill. Clause 8 of each Standardized Specification, and the measurement and payment clause of each Particular Specification, read together with the relevant clauses of the Project Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations

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

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

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

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

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



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

**8 PROVISIONAL SUM**

Where Provisional sums or Prime Cost sums are provided for items in the Bill of Quantities, payments for the Work done under such items will be made accordance with **Clause 6.6 of GCC 2015(3<sup>rd</sup> Edition) of the General Condition 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, such approval shall be granted by the **Executive Director Infrastructure Services** as delegated by the Accounting Officer.

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.

**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. The use of contingency shall be upon approval by the Executive Director Infrastructure Services as delegated by the Accounting Officer.  
Director Infrastructure Services as delegated by the Accounting Officer.

**10 PAYMENT FOR THE LABOUR-INTENSIVE COMPONENT OF THE WORKS**

Those parts of the works to be constructed using labour-intensive methods are marked in the bill of quantities with the letters LI either in a separate column or as a prefix or suffix 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 deviation from 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.

Where minimum labour intensity is specified in the design, the contractor is expected to use their initiative to identify additional activities that can be done labour-intensively in order to comply with the set minimum labour intensity targets.

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. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict

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**11. Linkage of Payment for Labour-Intensive Component of Works to Submission of Project Data**

The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframes stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted. The client may institute a penalty relating to outstanding labour information.

The following information shall be maintained on site and submitted in electronic/hard copy formats:

- Certified ID copies of all locally employed labour
- Signed Contracts between the employer and the EPWP Participants
- Attendance Registers for the EPWP Participants
- Proof of Payment of EPWP Employees
- Monthly Reporting Template as per EPWP requirements

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

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m <sup>2</sup>	=	square metre
m <sup>2</sup> -pass	=	square metre-pass
ha	=	hectare
m <sup>3</sup>	=	cubic metre
m <sup>3</sup> -km	=	cubic metre-kilometre
kW	=	kilowatt
kN	=	kilonewton
kg	=	kilogram
t	=	ton (1 000 kg)
%	=	per cent
MN	=	meganewton
MN-m	=	meganewton-metre
PC Sum	=	Prime Cost Sum
Prov Sum	=	Provisional Sum
No.	=	number

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

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Unit	:	The unit of measurement for each item of work as defined in the Standardized, Project or Particular Specifications
Quantity	:	The number of units of work for each item
Rate	:	The payment per unit of work at which the Tenderer tenders to do the work
Amount	:	The quantity of an item multiplied by the tendered rate of the (same) item
Sum	:	An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere, but of which the quantity of work is not measured in units

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**C2.2 SCHEDULE OF QUANTITIES**

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 1 : PRELIMINARY AND GENERAL

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
1.1	SABS 1200 A	SECTION 1 : PRELIMINARY AND GENERAL  <i>NOTE: A rate or price must be entered in the amount column for each item. Items which are included should have the word 'included' written in the appropriate amount column.</i>					
1.2	8.3	SCHEDULED FIXED-CHARGE AND VALUE RELATED ITEMS					
1.2.1	8.3.1	Contractual Requirements		Sum	1		
	8.3.2.1	Establishment of Facilities on the Site		Sum	1		
1.2.2		Nameboards		No	2		
	8.3.2.2	<b>Facilities for Contractor</b>					
1.2.3		a) Offices and storage sheds		Sum	1		
1.2.4		b) Workshops		Sum	1		
1.2.5		c) Laboratories		Sum	1		
1.2.6		d) Living Accommodation		Sum	1		
1.2.7		e) Ablution and latrine facilities		Sum	1		
1.2.8		f) Tools and equipment		Sum	1		
1.2.9		g) Water supplies, electric power and communications		Sum	1		
1.2.10		h) Dealing with water (Subclause 5.5)		Sum	1		
1.2.11		i) Access (Subclause 5.8)		Sum	1		
1.2.12		j) Plant		Sum	1		
1.2.13	8.3.3	Other Fixed-charge Obligations		Sum	1		
1.2.14		All work to ensure compliance with the provisions of the OHS Act 85 of 1993 and Regulations R1010 as published in Government Gazette on 18 July 2003. This item shall include all costs to provide a safety plan including the monitoring thereof, auditing thereof and the reporting thereon to the Engineer, on a regular basis.		Sum	1		
1.2.15		All work required to be done for Environmental Management. NB. Exclude topsoiling; compaction of earth berms and grassing etc. as these are individually itemised.		Sum	1		
1.2.16	8.3.4	Removal of Site Establishment		Sum	1		
1.3	8.4	SCHEDULED TIME-RELATED ITEMS					
1.3.1	8.4.1	Contractual Requirements		Month	4		
	8.4.2	Operation and Maintenance of Facilities on Site, for Duration of Construction, except where otherwise stated.					
	8.4.2.1	<b>Facilities for Engineer</b>					
1.3.2		Nameboards (2 No.)		No.			
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 1 : PRELIMINARY AND GENERAL

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
1.3.3		a) Furnished offices		Month	6		
1.3.4		b) Telephone/ laptop		Month	6		
1.3.5		c) Laboratories		Month			
1.3.6		d) Living Accommodation		Month	6		
1.3.7		e) Ablution and latrine facilities		Month			
1.3.8		f) Tools and equipment		Month			
1.3.9		g) Water supplies, electric power and communications		Month			
1.3.10		h) Dealing with water (Subclause 5.5)		Month			
1.3.11		i) Access (Subclause 5.8)		Month	6		
1.3.12		j) Plant		Month			
1.3.13	8.4.3	Supervision for Duration of Construction		Month	6		
1.3.14	8.4.4	Company and head office overhead costs for the duration of the contract		Month	6		
1.3.15	8.4.5	Other time-related obligations		Month	6		
		Environmental Management Plan Audits.		Prov Sum	1		
	8,5	<b>SUMS STATED PROVISIONALLY BY ENGINEER</b>					
	8,6	<b>DAYWORK</b>					
1,4		<b>LABOUR</b> <i>Supervision, transport etc. to be included in P&amp;G allowance. Any other allowance to be included in the rate.</i>					
1.4.2		a) Unskilled Labour		hr	100		
1.4.3		b) Semi-skilled Labour		hr	75		
		c) Plumber		hr	50		
1,5		<b>MATERIAL</b>					
1.5.1		Actual cost of materials delivered to site inclusive of transport charges. (supporting invoices to be supplied)		Prov Sum	1		
1.5.2		Percentage adjustment to item 1.5.1 for materials		%			
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 1 : PRELIMINARY AND GENERAL

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
1,6		<b>PLANT</b>					
		a) Compressor					
1.6.1		With 2 Breakers and 2 Operators		day	5		
1.6.2		Establishment / Destablishment for item 1.6.1.		Sum	1		
1.6.3		b) TLB		hr	50		
1.6.4		Establishment / Destablishment for item 1.6.3		Sum	1		
1.6.5		c) 10kl Water Tanker		hr	20		
1.6.6		Establishment / Destablishment for item 1.6.3		Sum	1		
		c) Wacker		day	5		
1.6.8		d) Water Pump		day	5		
		Note: Standing time on plant will be paid at 2/3 of the rate agreed for use of plant on Dayworks.					
		Note: Reimbursement of the use of tools, small plant, equipment, consumable materials and non-working supervisory staff including their transport must be included in the relevant rates.					
1,7		<b>SKILLS TRAINING</b>					
1.7.1		Allowance for CEITS skills training of local labour		Prov Sum	1		
		All work to assist with the selection of accredited training agent and manage the training process including markup and handling fee. All direct training costs will be paid at cost.					
1.7.2				%			
1,8		<b>MASTER LOCKS</b>					
1.8.1		Allowance for the purchase of master locks (invoices to be supplied)		Prov Sum	1		
1.8.2		Contractor's markup to item 1.9.1		%			
1,9		<b>SURVEY</b>					
1.9.1		Allowance for any As-Built" survey"		Prov Sum	1		
1.9.2		Contractor's markup to item 1.9.1		%			
1.10		<b>COMMUNITY LIASON OFFICER</b>					
1.10.1		Allowance for payment of a CLO		Month	6		
1.10.2		Contractor's markup to item 1.10.1		%			
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**CONTRACT No: HGDM 774/HGDM/2021**

**SECTION 2 : EARTHWORKS SECONDARY BULK (PIPE TRENCHES)**

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	<b>SABS 1200 DB</b>	<b>SECTION 2 : EARTHWORKS SECONDARY BULK (PIPE TRENCHES)</b>					
<b>2,1</b>	<b>8.3.1</b>	<b>SITE CLEARANCE</b>					
2.1.1		Compensation for crops (Provisional)		Prov Sum	1		
2.1.2		Percentage adjustment to Item 2.1.1.		%			
2.1.3	8.2.1	Clear and grub 6,0 width along centre of pipeline route		m	23560		
2.1.4	8.2.3 (a)	Remove 150mm thick topsoil along 2m width, stockpile, maintain and reinstate		m <sup>2</sup>	47120		
<b>2,2</b>	<b>8.3.2</b>	<b>EXCAVATION</b>					
		Excavate in all materials for trenches, backfill, compact and dispose of surplus material, for pipe diameters up to 110mm in the following depth categories :-					
	PSD.1.1						
2.2.1		(a) 0,0 - 1,0 m. (LI)		m <sup>3</sup>	100		
2.2.2		(b) 1,0 - 2,0 m. (machine and including shoring)		m <sup>3</sup>	32171		
2.2.3	8.3.2 (b)	Extra over items 2.2.1 to 2.2.2 for hard rock excavation (Controlled Blasting) (provisional)		m <sup>3</sup>	1775		
2.2.4	8.3.2 (b)	Extra over items 2.2.1 to 2.2.4 for Boulder Class A excavation (provisional)		m <sup>3</sup>	555		
2.2.5	8.3.2 (b)	Extra over items 2.2.1 to 2.2.4 for Boulder Class B excavation (provisional)		m <sup>3</sup>	555		
<b>2,3</b>	<b>8.3.3</b>	<b>EXCAVATION ANCILLARIES</b>					
	8.3.3.1	Make up deficiency in backfill material.					
2.3.1	8.3.3.1	a) From other necessary excavations on site. (provisional)		m <sup>3</sup>	1108		
2.3.2	8.3.3.1	b) By importation from commercial or off-site sources selected by the Contractor. (provisional)		m <sup>3</sup>	555		
<b>2,4</b>		<b>EROSION CONTROL BERMS</b>					
		a) Erosion control berms 1.5m wide x 0.6m high where instructed by the Engineer including shaping and compaction to 90% MOD AASHTO density (LI)					
2.4.1	PSD.3.1			m	1000		
<b>TOTAL CARRIED FORWARD</b>							



CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 2 : EARTHWORKS SECONDARY BULK (PIPE TRENCHES)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
2,5	PSDK	<b>GABIONS AND PITCHING</b>					
		<b>GABIONS</b>					
2.5.1	PSDK.1.1	1m x 1m x 2m gabions (provisional)	LI	m <sup>3</sup>	60		
2.5.2		3m x 1m x 0.3m reno mattress	LI	m <sup>3</sup>	27		
2.5.3	8.2.3 8.2.5	Extra-over Item 2.5.1 for packing selected stone to exposed face. (Where instructed by the Engineer) <b>CONCRETE ENCASEMENT</b>		m <sup>2</sup>	120		
2.5.4		a) 30 Mpa Concrete encasement of pipes below rivers and streams complete including formwork		m <sup>3</sup>	5		
2,6		<b>BEDDING FROM TRENCH EXCAVATION</b>					
	8.2.2	Bedding from trench excavations					
2.6.1		a) Selected granular material		m <sup>3</sup>	200		
2.6.2		b) Selected fill material		m <sup>3</sup>	1180		
2,7		<b>BEDDING FROM BORROW PITS</b>					
	8.2.2.3	Provision of bedding from designated borrow pits (unlimited freehaul) and place in stockpile at 100m intervals along trench (Provisional items).					
2.7.1		a) Selected granular material		m <sup>3</sup>	190		
2.7.2		b) Selected fill material		m <sup>3</sup>	1180		
2,8		<b>BEDDING FROM COMMERCIAL SOURCES</b>					
	8.2.2.3	Provision of bedding from commercial sources (unlimited freehaul) and place in stockpile at 100m intervals along trench (Provisional items).					
2.8.1		a) Selected granular material		m <sup>3</sup>	1865		
2.8.2		b) Selected fill material		m <sup>3</sup>	120		
2.8.3		c) 13.2mm stone		m <sup>3</sup>	100		
2.8.4	1200LB	<b>BACKFILL FROM TRENCH EXCAVATION</b>					
	5.1.4	Backfilling of all secondary bulk pipes		m <sup>3</sup>	5425		
		The degree of compaction attaining for for bedding (other than concrete and the material over the top of the pipeline) shall be 90% of modified AASHO maximum density					
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 3 : RESERVOIR AND WATER TREATMENT PLANT

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 L	<b>SECTION 3 : RESERVOIR AND WATER TREATMENT PLANT</b>					
3.1		<b>STEEL RESERVOIR</b>					
3.1.1		<b>SITE CLEARANCE</b>					
3.1.1.1		Clear vegetation and trees and prepare area for construction of ground tank and valve chambers.		m <sup>2</sup>	500		
3.1.2		<b>EXCAVATION</b>					
3.1.2.1		Excavation and back fill to expose existing pipe work.		m <sup>3</sup>	15		
3.1.2.2		Excavate and back fill for valve chambers and tank footings		m <sup>3</sup>	300		
3.1.2.3		Extra-over item 2.2 for excavation in hard rock.		m <sup>3</sup>	50		
3.1.2.4		Surplus material from excavations to be carted away to dumping site to be located by the contractor.		m <sup>3</sup>	30		
3.1.2.5		Dump rock 100-200mm size		m <sup>3</sup>	10		
3.1.2.6		Commercially imported G5/G6 material, compacted in 150mm thick layers to 95% Mod AASHTO		m <sup>3</sup>	30		
3.1.2.7		19mm crushed stone		m <sup>3</sup>	5		
3.1.3		<b>CONCRETE WORK</b>					
3.1.3.1		a) Blinding layer Grade 15/19.		m <sup>3</sup>	20		
3.1.3.2		b) Strength concrete Grade 30/19 in column bases		m <sup>3</sup>	100		
3.1.3.3		c) Strength concrete Grade 15/19 in paving slab under		m <sup>3</sup>	20		
3.1.3.4		d) Strength concrete Grade 15/19 in V-drain		m <sup>3</sup>	5		
3.1.3.5		Formwork					
3.1.3.5.1		Unformed concrete surface finishes-					
3.1.3.5.1.1		a) Wood floated finish to column tops		m <sup>2</sup>	30		
3.1.3.5.1.2		b) Wood floated finish to paving slab under tank and V-drain		m <sup>2</sup>	50		
3.1.3.5.2		Formwork, Smooth Vertical					
3.1.3.5.2.1		a) To stub column sides		m <sup>2</sup>	45		
3.1.3.5.2.2		b) 20 mm chamfer to stub column edges.		m	45		
3.1.4		<b>STEEL REINFORCING</b>					
3.1.4.1		Mild steel bars for column bases		kg	140		
3.1.4.2		High-tensile steel bars for column bases		kg	3000		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 3 : RESERVOIR AND WATER TREATMENT PLANT

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
3.1.5		<b>GROUND STEEL TANK</b>					
3.1.5.1		Supply and install a SANS approved 500kl steel tank, complete with access ladders and walkway as per drawing No. UL2020/MC/09		Prov Sum	1	2 000 000,00	2 000 000,00
3.1.5.2		Overheads, charges and profit.		%	2 000 000,00		
3.1.5.3		Supply and install lightning protection for the tank		Sum	1		
3.1.5.4		Supply and install a water level indicator for the tank		Sum	1		
3.1.5.5		Supply and install a float level control valve for the tank		Sum	1		
3.1.6		<b>RESERVOIR PIPEWORK</b>					
3.1.6.1		Inlet pipe 110mm dia GMS pipe		m	20		
3.1.6.2		Outlet pipe 110mm dia GMS pipe		m	20		
3.1.6.3		Scour pipe 110mm dia GMS pipe		m	15		
3.1.6.4		Cast Iron bends					
3.1.6.4.1		110mm Diameter 90°		No	7		
3.1.6.5		Install, connect, set, test and commission chamber and pipe work as per pipe schedule					
3.1.6.5.1		Scour, as per drawing		No	1		
3.1.6.5.2		Inlet as per drawing		No	1		
3.1.6.5.3		Outlet as per drawing		No	1		
3.1.6.5.4		Overflow structure		No	1		
3.1.7		<b>MISCELLANEOUS - TANK</b>					
3.1.7.1		Clean and sterilize tank and all pipes from reticulation to tank:		Sum	1		
3.1.7.2		Fill tank to full supply level with water and test for water tightness		Sum	1		
3.2		<b>WATER TREATMENT PACKAGE PLANT</b>					
3.2.1		<b>EARTHWORKS</b>					
3.2.1.1		Site Clearance		m <sup>2</sup>	100		
3.2.1.2		Excavate and back fill for platform		m <sup>3</sup>	9		
3.2.1.3		Extra-over item 5.2 for excavation in hard rock.		m <sup>3</sup>	4,5		
3.2.1.4		Surplus material from excavations to be carted away to dumping site to be located by the contractor.		m <sup>3</sup>	4,5		
3.2.1.5		Commercially imported G5/G6 material, compacted in 150mm thick layers to 95% Mod AASHTO		m <sup>3</sup>	4,5		
3.2.2		<b>CONCRETE WORKS</b>					
3.2.2.1		Blinding layer Grade 15/19.		m <sup>3</sup>	12,25		
3.2.2.2		Strength concrete Grade 30/19 platform with wood floated finish		m <sup>3</sup>	12,25		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 3 : RESERVOIR AND WATER TREATMENT PLANT

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
3.2.3		<b>STEEL REINFORCEMENT</b>					
3.2.3.1		High-tensile steel fabric mesh ref. no. 888		kg	115		
3.2.3.2		High-tensile steel bars		kg	20		
3.2.4		<b>TREATMENT UNIT</b>					
3.2.4.1		10kl PVC pre-treatment tank		No	2		
3.2.4.2		Supply, installation, connections, testing and handing over in working order of a 25m <sup>3</sup> /hr package water treatment plant		Prov Sum	1	2 500 000,00	2 500 000,00
3.2.4.3		Overheads, charges and profit.		%	2 500 000,00		
3.2.5		<b>MISCELLANEOUS - WTP</b>					
3.2.5.1		Testing and commissioning		Sum	1		
3.2.5.2		Training of Staff and user manuals		Sum	1		
<b>BALANCE BROUGHT FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 4 : ACCESS ROAD

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS1200D	SECTION 4 : ACCESS ROAD					
4,1		EARTHWORKS					
4.1.1		Excavate by machine in all materials and use for embankment or backfill or dispose, as ordered		m <sup>3</sup>	190		
4.1.2		Extra-over for: Hard rock excavation. (Blasting or Pneumatic Drilling)		m <sup>3</sup>	40		
4.1.3		Boulder excavation and dump, Class A and B.		m <sup>3</sup>	23		
4,2	SABS1200 DM	EARTHWORKS (ROADS, SUBGRADE)					
4.2.1		Treatment of roadbed:					
4.2.1.1		Roadbed preparation and compaction of material to:					
4.2.1.1.1		Minimum of 90% of modified AASHTO maximum density		m <sup>3</sup>	64		
4.2.1.2		In-place treatment of road-bed in intermediate or hard rock material by:					
4.2.1.2.1		Ripping		m <sup>3</sup>	12		
4.2.1.2.2		Blasting		m <sup>3</sup>	6		
4.2.2		Cut to Fill:					
4.2.2.1		Compact to 90% of modified AASHTO maximum density		m <sup>3</sup>	64		
4.2.2.2		Rockfill, process and compact		m <sup>3</sup>	—		Rate Only
4.2.3		Borrow to Fill:					
4.2.3.1		Compact to 90% of modified AASHTO maximum density		m <sup>3</sup>	64		
4.2.3.2		Rockfill, process and compact		m <sup>3</sup>	—		Rate Only
4.2.4		Selected layer using material from designated borrow pits or excavations:					
4.2.4.1		Compacted to 93% of modified AASHTO density		m <sup>3</sup>	64		
4.2.5		Extra over items 4.2.2, 4.2.3 and 4.2.4 for excavating and breaking down material in:					
4.2.5.1		Intermediate excavation		m <sup>3</sup>	41		
4.2.5.2		Rockfill, process and compact		m <sup>3</sup>	41		
4.2.6		Cut to spoil from:					
4.2.6.1		Soft excavation		m <sup>3</sup>	75		
4.2.6.2		Intermediate excavation (To be approved by the Engineer)		m <sup>3</sup>	13		
4.2.6.3		Hard excavation <del>(Excavating)</del>		m <sup>3</sup>	13		
4.2.7		Extra over items <del>4.2.2, 4.2.3 and 4.2.4</del> for temporary stockpiling of <del>material</del>		m <sup>3</sup>	75		
4.2.8		Extra over items <del>4.2.2, 4.2.3 and 4.2.4</del> for obtaining material from commercial <del>sources</del>		m <sup>3</sup>	140		
4.2.9		Final finishing and <del>cleaning up</del> of the Site of the Works		Sum	1		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 4 : ACCESS ROAD

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
4,3	SABS1200 ME	<b>SUBBASE</b>					
4.3.1		Construct the subbase course with material excavated in all materials from borrow pits		m <sup>3</sup>	13		
4.3.2		Construct the subbase course with material from commercial sources		m <sup>3</sup>	51		
4.3.3		Extra over items 3.3.1 for class of excavation:					
4.3.3.1		Intermediate excavation		m <sup>3</sup>	13		
4.3.3.2		Hard rock excavation		m <sup>3</sup>	13		
4.3.4		Process subbase/base material by one of the following processes, as relevant, and use in the subbase:					
4.3.4.1		Stabilization		m <sup>3</sup>	13		
4.3.5		Stabilizing agent:					
4.3.5.1		Road lime		t	—		Rate Only
4.3.5.2		Portland cement		t	4		
4,4	SABS1200 MJ	<b>SEGMENTED PAVING</b>					
4.4.1		Provision of edge restraints:					
4.4.1.1		For straight edging		m	83		
4.4.1.2		For edging on a curve		m	90		
4.4.1.3		For anchor edge beams		m	15		
4.4.2		Construction of paving complete:					
4.4.2.1		80mm thick (Paved areas) - Type S-A blocks:		m <sup>2</sup>	508		
4,5	SABS1200 LE	<b>STORMWATER DRAINAGE</b>					
4.5.1		Dismantling and removal of existing canal and additional structures		m <sup>3</sup>	15		
4.5.2		Surface preparation for layerworks of Stormwater trapezoidal-drain (Rip and Compact)		m <sup>2</sup>	100		
4.5.3		G6 Material Bulk Layerworks compacted to 95% of MOD AASTHO.		m <sup>3</sup>	15		
4.5.4		Formwork - Vertical, Straight and Curved		m <sup>2</sup>	48		
4.5.5		Concrete Class 25/19		m <sup>3</sup>	22		
4.5.6		Mesh Ref. 395		m <sup>2</sup>	100		
4.5.7		Wood-floated finishes to top of Trapezoidal-drain		m <sup>3</sup>	100		
4,6		<b>REPAIRS AND MAINTENANCE OF EXISTING ROAD</b>					
4.6.1		Dismantling and removal of existing canal and additional structures			1	80 000,00	80 000,00
<b>TOTAL CARRIED FORWARD FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 5 : ELETRIFICATION

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 L	<b>SECTION 5 : ELETRIFICATION</b>					
5,1		Supply, delivery and installation of 50kVA 22kV/400V pole mounted transformer complete with structures, poles and accessories (For Borehole 2, Borehole 4 and WTP located at the Reservoir)		Prov Sum	3	350 000,00	1 050 000,00
5,2		<b>EXCAVATION AND TRENCHING</b> Allowance must be made for the sifting of soil when required, removal and carting away of all stones and rocks including dumping off site. Backfilling and compaction shall be carried out as specified for overall siteworks.					
5.2.1		Excavation and backfilling in soft soil		m <sup>3</sup>	600		
5.2.2		Excavation and backfilling in hard rock		m <sup>3</sup>	200		
5,3		<b>LOW VOLTAGE PVC CABLES AND BARE COPPER EARTH WIRE</b> Supply and installation of PVC SWA PVC cable and Bare Copper Earth Wire in trenches					
5.3.1		25mm <sup>2</sup> 4 core PVC SWA Cable ( From Eskom Kiosk to MCC-Boreholes Cluster 2&3)		m	2000		
5.3.2		10mm <sup>2</sup> 4 core PVC SWA Cable ( From Mini Substation to MCC-Boreholes Cluster1)		m			Rate Only
5.3.3		10mm <sup>2</sup> 4 core PVC SWA Cable ( From Mini Substation to MCC- Booster)		m	—		Rate Only
5.3.4		6mm <sup>2</sup> 4 core PVC Submersible pump cable ( From MCCs to Boreholes, BH1 up to BH10)		m	2000		
5.3.5		16mm <sup>2</sup> Bare Copper Earth Wire		m	2000		
5.3.6		6mm <sup>2</sup> Bare Copper Earth Wire		m	—		Rate Only
5.3.7		4mm <sup>2</sup> Bare Copper Earth Wire		m	2000		
5,4		<b>CABLE TERMINATIONS</b> Supply and installation of steel glands, lugs, ferrule, complete with shroud					
5.4.1		No. 3 Gland complete with Shroud		No	24		
5.4.2		No. 2 Gland complete with Shroud		No	4		
5.4.3		No. 1 Gland complete with Shroud		No	24		
5.4.4		16mm Crimping Lug		No	12		
5.4.5		10mm Crimping Lug		No	24		
5.4.6		6mm Crimping Lug		No	24		
5,5		<b>Motor Control Centre(Main DB)</b> Supply, delivery, installation, testing and commissioning of Motor Control Centre, complete with isolators, breakers, on/off selectors, ammeters, hour meter readings, flow rate, instantaneous flow, cumulative flow, and control gear as further specified below.					
5.5.1		CR Mild Steel Enclosure Powdercoated electrical Orange, Freestanding 2 x 3kW Soft starters, Incomer (Breaker and Surge arrestors) , Over Pressure Protection, Low Level Protection, Duty Rotation and Ultrasonic Controller With Indication. As per drawing-MCC-Boreholes Cluster 2		Sum	3		
<b>TOTAL CARRIED FORWARD</b>							

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**  
**CONTRACT No: HGDM 774/HGDM/2021**  
**SECTION 5 : ELETRIFICATION**

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
5,6		<b>CABLE TRAYS</b> Supply and installation of heavy duty cable tray below complete with accessories					
5.6.1		Supply and installation of heavy duty cable tray below complete with accessories		m	—		Rate Only
5.6.2		150mm width 1,5mm thickness heavy duty cable tray		No	—		Rate Only
5.6.3		150mm Horizontal bend 90°		No	—		Rate Only
5,7		<b>OTHERS</b>					
5.7.1		Cable Warning Tape		m	2000		
5.7.2		Concrete Cable Markers		No	60		
5.7.3		Concrete Manholes 600 x 600 x 600 mm		each	4		
5.7.4		Supply and Install 2x35W Enclosed Channel vapour proof		each	—		Rate Only
5.7.5		Liaise-with Municipality for connection/Outage (1hours)		hrs	—		Rate Only
5,8		<b>CONTROL AND INSTRUMENTATION</b>					
5.8.1		PLC (incl. power supply, Interface Modules, expandable 36 I/O Modules, ethernet and PROFIBUS ports, software, 24VDC power supply, cooling fans)		each	—		Rate Only
5.8.2		4 Core fibre optic cable		m	—		Rate Only
5.8.3		Cat 6 cable		m	—		Rate Only
5.8.4		RJ45 Connectors		each	—		Rate Only
5.8.5		Ultrasonic Level Transmitter (incl. 3 - 10m range, 4-20mA signal output)		each	—		Rate Only
5.8.6		Pressure Transducer (incl. operating temp -40 to 116 deg Celsius, 4-20mA signal output, accuracy options, pressure ranges)		each	—		Rate Only
5.8.7		PT100 Resistive Thermal Device (incl. temp range -40 to 400 deg Celsius, accuracy class B)		each	—		Rate Only
5.8.8		Any additional items required for the successful completion of the above		Sum	—		Rate Only
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							



CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 6 : MEDIUM PRESSURE PIPELINES (RETICULATION)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 L	<b>SECTION 6 : MEDIUM PRESSURE PIPELINES (RETICULATION)</b>					
<b>3</b>		<b>PIPEWORK</b>					
	8.2.1	Supply, lay and bed pipes complete with couplings - test and disinfect					
<b>3,1</b>		<b>RETICULATION</b>					
3.1.1		i) 200mm diameter uPVC PN 12		m	---		Rate Only
3.1.2		ii) 160mm diameter uPVC PN 12		m	---		Rate Only
3.1.3		iii) 140mm diameter uPVC PN 16		m	---		Rate Only
3.1.4		iv) 110mm diameter uPVC PN 12		m	200		
3.1.5		v) 90mm diameter uPVC PN 12		m	11000		
3.1.7		vii) 63mm diameter uPVC PN 12		m	8000		
3.1.8		viii) 50mm diameter HDPE PN 12.5		m	---		Rate Only
3.1.9		ix) 40mm diameter HDPE PN 12.5		m	6000		
<b>3,2</b>		<b>SPECIALS AND FITTINGS</b>					
	8.2.2	Extra-over item 3.2.1 to 3.3.4 for supplying, laying and bedding of the following specials complete with couplings					
		<b>TEES</b>					
3.2.1		i) 200mm diameter cast iron equal tee		No	---		Rate Only
3.2.2		ii) 160mm diameter cast iron equal tee		No	---		Rate Only
3.2.3		iii) 110mm diameter cast iron equal tee		No	2		
3.2.4		iv) 90mm diameter cast iron-equal tee		No	5		
3.2.5		v) 75mm diameter compression equal tee		No	---		Rate Only
3.2.6		vi) 63mm diameter compression equal tee		No	5		
3.2.7		vii) 40mm diameter compression equal tee		No	15		
<b>3,3</b>		<b>REDUCERS</b>					
3.3.1		i) 200mm/160mm cast iron reducer		No	---		Rate Only
3.3.2		ii) 200mm/90mm cast iron reducer		No	---		Rate Only
3.3.3		iii) 200mm/50mm cast iron reducer		No	---		Rate Only
3.3.4		iv) 160mm/140mm cast iron reducer		No	---		Rate Only
3.3.5		v) 160mm/63mm cast iron reducer		No	---		Rate Only
3.3.6		vi) 160mm/50mm cast iron reducer		No	---		Rate Only
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 6 : MEDIUM PRESSURE PIPELINES (RETICULATION)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
3.3.7		vii) 110mm/90mm cast iron reducer		No	1		
3.3.8		viii) 110mm/63mm cast iron reducer		No	1		
3.3.9		ix) 90mm/75mm cast iron reducer		No	—		Rate Only
3.3.10		x) 90mm/40mm cast iron reducer		No	10		
3.3.11		xi) 75mm/63mm compression reducer		No	—		Rate Only
3.3.12		xii) 75mm/50mm compression reducer		No	—		Rate Only
3.3.13		xiii) 63mm/40mm compression reducer		No	10		
3.3.14		xiv) 50mm/40mm compression reducer		No	—		Rate Only
3,4		<b>uPVC BENDS</b>					
3.4.1		i) 200mm Ø 45° bend		No	—		Rate Only
3.4.2		ii) 200mm Ø 22.5° bend		No	—		Rate Only
3.4.3		iii) 200mm Ø 11.25° bend		No	—		Rate Only
3.4.4		iv) 110mm Ø 22.5° bend		No	2		
		v) 110mm Ø 11.25° bend		No	—		Rate Only
		vi) 90mm Ø 45° bend		No	1		
		vii) 90mm Ø 22.5° bend		No	5		
		viii) 90mm Ø 11.25° bend		No	9		
		ix) 63mm Ø 45° bend		No	7		
		ix) 63mm Ø 22.5° bend		No	18		
		ix) 63mm Ø 11.25° bend		No	20		
3,5		<b>ELBOWS</b>					
3.5.1		i) 90mm Ø Compression Elbow		No	5		
		ii) 63mm Ø Compression Elbow		No	5		
		ii) 40mm Ø Compression Elbow		No	25		
3,6	<b>SABS 1200 GA</b>	<b>CONCRETE (SMALL WORKS)</b>					
	8.2.11	Anchor / Thrust Blocks and Pedestals					
		Supply all materials, labour, plant and construct 15MPa concrete anchor/thrust blocks and pedestals as detailed on the drawings including all trimming and formwork required. the concrete shall be mixed on site by labour intensive methods					
3.6.1				m <sup>3</sup>	180		
3,7	<b>8,6</b>	<b>PIPE ROUTE MARKERS</b>					
		Supply and install precast concrete pipe route markers every 100m along pipe route and at every intersection and change of direction. Pipe markers are to be painted with two coats yellow road marking paint and should include the letter 'W' (LI).					
3.7.1				No	250		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 6 : MEDIUM PRESSURE PIPELINES (RETICULATION)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
		<b>INTERNAL RETICULATION AND COMMUNAL TAPS CONNECTIONS</b>					
	8.2.1	Supply, lay and bed pipes complete with couplings - test and disinfect					
7.1		i) 22mm diameter HDPE PE 80 PN 10		m	9000		
7.2		<b>YARD TAP FITTINGS</b>					
7.2.1		i) 3/4 'Cobra' 108-20 tap with 3/4" BSP union (or similar approved) (item 1)"		No	58		
7.2.2		ii) 22mm GMS elbow (item 4)		No	58		
7.2.3		iii) 1.7m long 110 Dia filled with concrete (item 2)		No	58		
7.2.4		iv) 22mm G.I pipe, 1200mm long, threaded both ends (item 3)		No	58		
7.2.5		v) 22mm x 3/4 compression male threaded adaptor (item 5)"		No	116		
7.2.6		vi) 22mm Cobra brass gate valve		No	58		
7.3	SABS 1200 GA	<b>CONCRETE (SMALL WORKS)</b>					
7.3.1		Splash block (500mm x 550mm x 500mm) in 20/19MPa concrete including 20mm x 20mm chamfer and all formwork etc		No	58		
7.3.2		750mm diameter Precast concrete manhole ring (250mm high) fill with 19mm stone.		No	58		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 L	<b>SECTION 7 : VALVES</b>					
		<b>AIR VALVES</b>					
4,1		a) 25mm Diameter AV for 50mm to 75mm diameter pipe					
	8.2.5	Supply & Lay pipes, valves and specials					
4.1.1	PSL.4.5	i) 25mm diameter Vent-O-Mat" (or similar approved) Air Valve (025-RB-X-16-1-1) (Item 1)"		No	10		
4.1.2		ii) 25mm diameter Glen" (or similar approved) ball valve screwed both ends (Item 2) "		No	10		
4.1.3		iii) 25mm diameter GMS pipe 600mm long (Confirm length on site) - threaded one end and flanged on the other end (Item 3)		No	10		
4.1.4		iv) 50mm diameter cast iron hydrant tee, flanged all ends (item 4)		No	10		
4.1.5		v) 50mm compression flange adaptor (Item 5)		No	20		
4.1.6		vi) 50mm diameter straight coupling		No	20		
4.1.7		vii) 75mm/50mm diameter reducer		No	—		Rate only
4.1.8		viii) 63mm/40mm diameter reducer		No	3		
4,2		<b>AIR VALVE CHAMBERS</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
		Supply all labour, plant and materials and construct air valve chamber complete including manhole cover slabs, GMS access cover etc as detailed on the drawings but excluding locks measured elsewhere		No	10		
4.2.1				No	10		
4,3	PSL.3.4	<b>CORROSION PROTECTION</b>					
	8.2.15	Denso wrapping in corrosive soil-Inclusive of outer wrap layer.					
		External Denso" wrap of pipes and fittings including					
		<b>TEES</b>					
4.3.1		50mm diameter		No	10		
4,4		<b>CAST IRON FLANGE ADAPTORS</b>					
4.4.1		50mm diameter		No	10		
		<b>CONCRETE (SMALL WORKS)</b>					
4,5	8,6	<b>VALVE MARKERS</b>					
		Supply and install precast concrete valve markers. Valve markers are to be painted yellow with two coats road marking paint and should include the letter "W". The rate shall include for all costs to excavate		No	10		
4.5.1				No	10		
<b>TOTAL CARRIED FORWARD</b>							

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**  
**CONTRACT No: HGDM 774/HGDM/2021**  
**SECTION 7 : VALVES**

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
4,6	8.2.5	b) 25mm Diameter AV for 90mm to 200mm diameter pipe Supply & Lay pipes, valves and specials					
4.6.1	PSL.4.5	i) 25mm diameter Vent-O-Mat" (or similar approved) Air Valve (025-RB-X-16-1-1) (Item 1)"		No	30		
4.6.2		ii) 25mm diameter Glen" (or similar approved) ball valve screwed both ends (Item 2) "		No	30		
4.6.3		iii) 25mm diameter GMS pipe 600mm long (Confirm length on site) - threaded one end and flanged on the other end (Item 3)		No	30		
4.6.4		iv) 80mm diameter GMS pipe 310mm long (Confirm length on site) - flanged both ends (Item 4)		No	30		
4.6.5		v) 90mm diameter cast iron hydrant tee, flanged all ends (item 5)		No	14		
4.6.6		vi) 140mm diameter cast iron hydrant tee, flanged all ends (item 5)		No	4		
4.6.7		vii) 160mm diameter cast iron hydrant tee, flanged all ends (item 5)		No	8		
4.6.8		viii) 200mm diameter cast iron hydrant tee, flanged all ends (item 5)		No	6		
4,7	8.2.13	<b>AIR VALVE CHAMBERS</b> Valve and Hydrant Chambers, etc					
4.7.1		Supply all labour, plant and materials and construct air valve chamber complete including manhole cover slabs, GMS access cover etc as detailed on the drawings but excluding locks measured elsewhere		No	30		
4,8	PSL.3.4	<b>CORROSION PROTECTION</b>					
	8.2.15	Denso wrapping in corrosive soil inclusive of outer wrap layer.  External Denso" wrap of pipes and fittings including					
4.8.1		<b>TEES</b> 90/140/160/200mm diameter		No	30		
4,9		<b>CAST IRON FLANGE ADAPTORS</b>					
4.9.1		90/140/160/200mm diameter		No	30		
4,10	8,6	<b>VALVE MARKERS</b>					
4.10.1		Supply and install precast concrete valve markers. Valve markers are to be painted yellow with two coats road marking paint and should include the letter 'W'. The rate shall include for all costs to excavate		No	30		
4,11		<b>BREAK PRESSURE TANK</b>					
4.11.1		Construct BREAK PRESSURE TANK with fittings complete as detailed on relevant drawing  25mm Diameter, "LW Tank Systems" (or similar approved) Break Pressure Tank Type 1 (LW 01LW10).		No	7		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
5,1	SABS 1200 L	<b>ISOLATING VALVES FITTINGS</b>					
		a) 50mm diameter Isolating Valve for 50mm to 75mm diameter HDPE Pipe					
	8.2.5	Supply and Lay of pipes, valves and specials					
5.1.1		i) 50mm diameter RSV Class 1.6 Gate valve Flanged both ends (Item 1)		No	16		
5.1.2		ii) 50 compression flange adaptor (item 2)"		No	32		
5.1.3		iii) 50mm diameter straight coupling		No	14		
5.1.4		iv) 63/50mm diameter reducer		No	2		
5,2		<b>ISOLATING VALVE CHAMBERS</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
		Supply all labour, plant and materials and contract Isolating valve chamber complete including manhole rings, reinforced slabs, GMS cover and locking bar etc as detailed on the drawings but excluding locks measured elsewhere.					
5.2.1				No	16		
	SABS 1200 GA	<b>CONCRETE (SMALL WORKS)</b>					
5,3		<b>VALVE MARKERS</b>					
		Supply and install precast concrete valve markers. Valve markers are to be painted yellow with two coats road marking paint and should include the lette W". The rate shall include for all costs to excavate					
5.3.1				No	16		
5,4	PSL.3.4	<b>CORROSION PROTECTION</b>					
	8.2.15	Denso wrapping in corrosive soil inclusive of outer wrap layer.					
		External Denso" wrap of pipes and fittings including mastic where applicable and overwrap etc. applied in accordance with manufacturer's instruction."					
5,5		<b>CAST IRON FLANGE ADAPTORS</b>					
5.5.1		50mm diameter		No	16		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

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SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
5,6	SABS 1200 L	<b>ISOLATING VALVES FITTINGS</b>					
		<b>b) 100mm diameter Isolating Valve for 90mm to 200mm diameter uPVC Pipes .</b>					
	8.2.5	Supply and Lay of pipes, valves and specials					
5.6.1		i) 100mm diameter RSV Class 16 Gate valve Flanged both ends (Item 1)		No	7		
5.6.2		ii) 90mm cast Iron flange adaptor (item 2)		No	6		
5.6.3		iii) 160mm cast iron flange adaptor (item 2)		No	4		
5.6.4		iv) 200mm cast Iron flange adaptor (item 2)		No	4		
5.6.5		v) 90mm/100mm diameter reducer		No	3		
5.6.6		vi)160mm/100mm diameter reducer		No	2		
5.6.7		vii)200mm/100mm diameter reducer		No	2		
5,7		<b>ISOLATING VALVE CHAMBERS</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
		Supply all labour, plant and materials and construct Isolating valve chamber complete including manhole rings, reinforced slabs, GMS cover and locking bar etc as detailed on the drawings but excluding locks measured elsewhere.					
5.7.1				No	7		
	SABS 1200 GA	<b>CONCRETE (SMALL WORKS)</b>					
5,8		<b>VALVE MARKERS</b>					
		Supply and install precast concrete valve markers. Valve markers are to be painted yellow with two coats road marking paint and should include the letter "W". The rate shall include for all costs to excavate					
5.8.1				No	7		
5,9	PSL.3.4	<b>CORROSION PROTECTION</b>					
	8.2.15	Denso wrapping in corrosive soil inclusive of outer wrap layer.					
		External Denso" wrap of pipes and fittings including mastic where applicable and overwrap etc. applied in accordance with manufacturer's instruction."					
5,10		<b>CAST IRON FLANGE ADAPTORS</b>					
5.10.1		90/160/200mm diameter		No	7		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

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SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
6,1	SABS 1200 L	<b>SCOUR VALVES</b>					
		<b>FITTINGS</b>					
		a) 50mm Diameter SV for 50mm to 75mm diameter HDPE pipe					
6.1.1		i) 50mm diameter Equal Tee, HDPE compression fitting (Item 1)		No	33		
6.1.2		ii) 50mm diameter HDPE straight pipe, class 10, 220mm long (Item 2)		No	33		
6.1.3		iii) 50mm diameter flange adaptor, HDPE compression fitting (Item 3)		No	33		
6.1.4		iv) 50mm diameter Waterworks Gate Valve to SABS 664, class 16 (Item 4)		No	33		
6.1.5		v) 50mm diameter flange adaptor for threaded GMS pipe (Item 5)		No	33		
6.1.6		vi) 50mm diameter GMS straight pipe, threaded both ends, 900mm long (confirm length on site) (Item 6)		No	33		
6.1.7		vii) 50mm diameter GMS elbow, for threaded GMS pipe (Item 7)		No	33		
6.1.8		viii) 50mm diameter GMS straight pipe, threaded both ends, 20mm long (confirm length on site) (Item 8)		No	33		
6.1.9		ix) 50mm diameter coupling, for threaded GMS pipe (Item 9)		No	33		
6.1.10		x) 50mm diameter GMS straight pipe threaded both ends (confirm length on site) (item 10)		No	33		
6.1.11		xi) 50mm diameter Jet disperser (Item )		No	33		
6.1.12		xii) 50mm diameter straight coupling		No	66		
6,2		<b>SCOUR VALVE CHAMBER</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
6.2.1		Supply all labour, plant and materials and construct scour valve chamber complete including manhole cover slabs, GMS access cover etc as detailed on the drawings but excluding locks measured elsewhere		No	33		
<b>TOTAL CARRIED FORWARD</b>							



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SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
6,3	PSL.3.4	<b>CORROSION PROTECTION</b>					
	8.2.15	Denso wrapping in corrosive soil inclusive of outer wrap layer.  External Denso" wrap of fittings including mastic and overwrap etc. applied in accordance with manufacturer's Instruction."					
6,4		<b>ELBOWS</b>					
6.4.1		50mm diameter		No	33		
6,5		<b>GMS PIPES</b>					
6.5.1		50mm diameter		m	99		
6,6		<b>VALVE MARKERS</b>					
6.6.1		Supply and install precast concrete valve markers. Valve markers are to be painted yellow with two coats road marking paint and should include the letter 'W'. The rate shall include for all costs to excavate, backfill and place markers. All work, including the manufacture of the markers, is to take place on site using labour intensive methods (L)		No	33		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

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SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
6,7	SABS 1200 L	<b>SCOUR VALVES</b>					
		<b>FITTINGS</b>					
		<b>b) 80mm Diameter SV for 90mm to 200mm diameter pipe</b>					
6.7.1		i) 80mm diameter Jet disperser (Item 1)		No	3		
6.7.2		ii) 80mm diameter GMS straight pipe flanged one end 1500mm (confirm length on site) (item 2)		No	3		
6.7.3		iii) 45 degree GMS elbow flanged both ends (item 3)		No	3		
6.7.4		iv) 80mm dia. GMS straight, flanged both ends 1000mm (confirm length on site)(Item 4)		No	3		
6.7.5		v) 80mm diameter Waterworks Gate Valve to SABS 664, class 16 (Item 5)		No	3		
6.7.6		vi) 90mm diameter Cast Iron Hydrant Tee (Item 6)		No	2		
6.7.7		vii) 140mm diameter Cast Iron Hydrant Tee (Item 6)		No	1		
6,8		<b>SCOUR VALVE CHAMBER</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
		Supply all labour, plant and materials and construct scour valve chamber complete including manhole cover slabs, GMS access cover etc as detailed on the drawings but excluding locks measured elsewhere					
6.8.1				No	3		
<b>TOTAL CARRIED FORWARD</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

SECTION 7 : VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
6,9	PSL.3.4	<b>CORROSION PROTECTION</b>					
	8.2.15	Denso wrapping in corrosive soil inclusive of outer wrap layer. External Denso" wrap of fittings Including mastic and overwrap etc. applied in accordance with manufacturer's Instruction."					
6,10		<b>ELBOWS</b>					
6.10.1		90/140mm diameter		No	3		
6,11		<b>GMS PIPES</b>					
6.11.1		90mm diameter		m	9		
6,12		<b>VALVE MARKERS</b>					
6.12.1		Supply and install precast concrete valve markers. Valve markers are to be painted yellow with two coats road marking paint and should include the letter "W". The rate shall include for all costs to excavate, backfill and place markers. All work, including the manufacture of the markers, is to take place on site using labour intensive methods (L)		No	3		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 774/HGDM/2021  
 SECTION 8: ROAD CROSSINGS

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 DB	<b>SECTION 8: ROAD CROSSINGS</b>					
8,1	8.3.2	<b>EXCAVATION</b>					
		Excavate by machine in all materials for trenches, backfill, compact and dispose of surplus material, for pipe diameters up to 200mm in the following depth categories :-					
	PSD1.1						
8.1.1		a) 1,0 - 2,0 m. (machine and including shoring)		m <sup>3</sup>	70		
8,2	SABS 1200 LB	<b>BEDDING</b>					
	8.2.2	Bedding from trench excavations					
8.2.1		a) Selected granular material		m <sup>3</sup>	15		
	8.2.2.3	Provision of bedding from commercial sources.					
8.2.2		a) Selected granular material		m <sup>3</sup>	15		
8,3	8.3.6	<b>FINISHING</b>					
		Extra-over item to reinstate road surfaces complete with all courses.					
	8.3.6.1						
8.3.1		a) 200mm layer G5 Gravel wearing course compacted to 95% MOD. AASHTO Density		m <sup>2</sup>	70		
8.3.2		b) 900mm layer selected G7 type material compacted to 93% MOD. AASHTO Density		m <sup>2</sup>	70		
8,4		<b>ACCOMODATION OF TRAFFIC</b>					
		All work to accomodate traffic including signage, safe barricading and the management thereof.					
8.4.1	PS.3.15			Sum	10		
8,5	SABS 1200 L	<b>PIPEWORK</b>					
		Supply, lay and bed pipes and specials complete with couplings - test and dis-infect					
	8.2.1						
8.5.1		i) 50mm diameter GMS steel pipe, flanged both ends with puddle flange (900mm long) (Item 1)		No	20		
8.5.2		ii) 50mm diameter flange adaptor (Item 2)		No	20		
8.5.3		iii) 50mm diameter resilient seal gate valve, class 12.5 (Item 3)		No	20		
8.5.4		iv) 75mm diameter heavy duty Class 34 Coreflow" pipe sleeve"		m	60		
<b>TOTAL CARRIED FORWARD</b>							

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**CONTRACT No: HGDM 774/HGDM/2021**

**SECTION 8: ROAD CROSSINGS**

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
8.6		<b>MISCELLANEOUS</b>					
8.6.1		110mm heavy duty Class 34 Coreflow" drain to scour"		m	200		
8.6.2		Headwall to 110mm diameter scour		No	20		
8.6.3		Chambers complete with concrete base and all reinforcing, shuttering (including excavation) and with GMS manhole cover as detailed on the drawings but excluding locks measured elsewhere for total depth of chamber up to 2.0m		No	20		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							



CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE  
CONTRACT No: HGDM 774/HGDM/2021

**SUMMARY OF BILL OF QUANTITIES**

SECTION 1	PRLIMINARY & GENERAL	R
SECTION 2	EARTHWORKS (SECONDARY BULK PIPE TRENCHES)	R
SECTION 3	RESERVOIR AND WATER TREATMENT PLANT	R
SECTION 4	ACCESS ROAD	R
SECTION 5	ELECTRIFICATION	R
SECTION 6	RETICULATION	R
SECTION 7	VALVES AND FITTINGS	R
SECTION 8	ROAD CROSSINGS	R
SUBTOTAL		R
ADD CONTINGENCIES	10%	R
SUBTOTAL		R
VALUE ADDED TAX		
ADD 15%		R
TOTAL CARRIED FORWARD TO FORM OF TENDER ON PAGE C2		R

**SIGNED ON BEHALF OF TENDERER:**

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

HGDM 774/HGDM/2021

**SUMMARY OF SCHEDULE OF QUANTITIES**

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>AMOUNT R-c</b>
1	PRELIMINARY AND GENERAL	
2	SITE CLEARANCE AND BULK EARTHWORKS	
3	RESERVOIR AND WATER TREATMENT PLANT	
4	ACCESS ROAD	
5	ELECTRIFICATION	
6	RETICULATION	
7	PIPEWORK, VALVES AND FITTINGS	
8	ROAD CROSSING	
<b>SUBTOTAL 1</b>		
<b>Add: 10% Contingencies [Use of Contingencies will be approved by Executive Director Infrastructure Services</b>		
<b>Add: 0% Escalation</b>		
<b>SUBTOTAL 2</b>		
<b>Add: 15% VAT</b>		
<b>TOTAL CARRIED TO FORM OF OFFER (Form C1.1 )</b>		

Signed: ..... Date: .....



**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE  
(MIG)**

**CONTRACT NO: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND  
RETICULATION AT MPUMULWANE VILLAGE**

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## PART 1: CIVIL SCOPE OF WORKS

### C3.1 STANDARDISED SPECIFICATIONS

The standard specifications on which this contract is based are Standards South Africa's Standardized Specifications for Civil Engineering Construction SABS 1200.

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

The standard specifications on which this contract is based are the following SANS 1200 Standardized Specifications:

SANS 1200 A	General
SANS 1200 AB	Employer's Agent's Office
SANS 1200 C	Site Clearance
SANS 1200 D	Earthworks
SANS 1200 DB	Earthworks (Pipe Trenches)
SANS 1200 DM	Earthworks (Roads Subgrade)
SANS 1200 G	Concrete (Structural)
SANS 1200 HA	Structural Steelwork
SANS 1200 L	Medium Pressure Pipelines
SANS 1200 LB	Bedding (Pipes)
SANS 1200 LE	Stormwater Drainage
SANS 1200 ME	Subbase
SANS 1200 J	Segmented Paving

Variations and additions to the standard specifications are detailed in C3.5 Project Specification.

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 SANS) in Pretoria.

SANS 10396:2003:	Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures
SANS 1914-1 to 6 (2002):	Targeted Construction Procurement
SANS 1921-1 (2004):	Construction and Management Requirements for Works Contracts Part 1: General Employer's Agenting and Construction Works and where accommodation of traffic is involved.

SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts;  
Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

### **Mechanical Works Specification**

SANS 1921-1: 2004 Part 1: General Employer's Agenting and Construction Works.

#### **C3.2.2 Plant and Materials**

All materials shall comply with the requirements of the South African Bureau of Standards and shall bear the official standardization mark. Where SANS standard does not exist for a certain material, or a material does not bear the official standardization mark, the Employer's Agents approval of such material must be gained before use thereof.

#### **C3.2.3 Construction Equipment**

All equipment on site shall be in a good working order and is to be in such a condition that it can achieve production rates which are typical of the industry standards.

Should any equipment, in the opinion of the Employer's Agent, be substandard or breaks down frequently to such an extent that it affects the progress on the project, the Employer's Agent may instruct the Contractor to replace such equipment.

#### **C3.2.4 Existing Services**

The Contractor shall so carry out all his operations as not to encroach on, or interfere with, trespass on, or damage adjoining lands, building properties, roads, structures, places and things in the vicinity of the Works, and he shall free and relieve the Employer of any liability that may be incurred in consequence of his failure to do so.

The services existing on the site will be either shown on the drawings or pointed out on site by the Employer's Agent and / or the Municipality. No excavation work will commence unless a representative of the Municipality and/or the Employer's Agent have been requested to point out existing services in the area under construction. Written confirmation of services that have been pointed out by the Municipality is to be obtained by the Contractor.

All existing services on the site may not be shown on the drawings or be visible on the site. The Employer's Agent may order excavation by hand in order to search for and expose services. An item has been included in the Bill of Quantities to cover the cost of such work if so ordered by the Employer's Agent. Where a service is damaged because of the Contractors negligence he shall be liable for the cost involved in the repair of the services and any other consequent cost that may arise due to the interruption of the damaged services.

The same shall apply to all Communication (Telkom, MTN, Vodacom, CellC, Neotel etc.) services in the area.

- **Source of water supply**

The Contractor will be responsible for the costs of the connection to the municipal supply as well as the use of water for construction purposes. The Contractor's attention is drawn to the fact that the potable water supply may be erratic in this area. Under no

circumstances may potable water be used for construction, unless written permission is granted by the Employer's Agent. The Contractor will be responsible at his own cost for all water that may be required for the purpose of construction of the Works and for human consumption.

- **Sources of power supply**

Electricity is available from the existing network on site, and the Contractor is to arrange with the Local Authority for a connection. The Contractor will be responsible for the costs of electricity consumed as well as the connection costs.

- **Location of camp and depot**

The Employer's Agent shall point out the position of the Contractors camp to the Contractor during the site inspection. The Contractor may assume that the site camp will be within 2 km of the site.

- **Location of borrow pits**

The Geotechnical Investigation has indicated borrow pits at the following locations:

**Borrow pit No.1**

26°16'52.78"S

30°46'39.35"E

**Borrow pit No.2**

26°16'3.63"S

30°48'0.67"E

The borrow pits are located within the free haul distance.

The Contractor will be responsible to ensure that the material is suitable for use and conforms with the specification required for use. Furthermore, the Contractor shall submit for approval an application to the Employer for the use of the borrow pits. The Contractor shall be responsible for any charges relating to royalties etc.

- **Sanitary facilities**

The Contractor is to provide the necessary sanitary facilities at his camp, all of which will be governed by the requirements of the Local Authority. The contractor shall pay all sanitary fees and charges due. Sanitary facilities shall be regularly serviced as needed and waste material delivered to approved treatment facility.

It is required that specific sanitary facilities be provided for the Employer's Agent, and these facilities will not be shared with the Contractor. The facilities are, however, to be kept in a clean and hygienic condition by the contractor to the satisfaction of the Employer's Agent. All sanitary facilities are to conform to the by-laws of the Local Authority.

- **Temporary offices**

The Contractor is required to provide x1 (one) furnished office space for the Employer's Agents, the Contractors' offices shall also have adequate space and facilities for the holding of site meetings, and for the Employer's Agent to perform administrative functions on an ad hoc basis.

Neither housing nor shelters will be provided for the contractor's employees, and the Contractor shall make his own arrangements to house his employees and transport them to the Site.

- **Laboratory facilities**

The use of commercial laboratories, will be allowed, but the laboratory to be used is subject to the approval of the Employer's Agent.

- **Name Boards**

One name board shall be provided in positions as ordered by the Employer's Agent. The Employer's Agent will provide the lettering required once the tender is awarded.

- **Survey assistant and equipment**

The Contractor will not be required to make any survey equipment available specifically for the use of the Employer's Agent. The Contractor will however make 2 survey assistants available to the Employer's Agent as and when required, as well as the theodolite and/or level plus accessories.

### **C3.2.5 Site Usage**

- **Ground and access to the works**

The Contractor shall where necessary on or adjacent to roads which carry traffic, provide all the necessary barricades and signs in accordance with the stipulations of the South African Road Traffic Signs Manual.

The Contractor shall further ensure that all public roads that are used for access to the site are kept free of debris at all times. The Contractor shall also take adequate measures to ensure that dust is kept to an acceptable level. The term acceptable is to be deemed as acceptable to the Employer's Agent.

- **Care, damage and protection**

The Contractor shall at his own cost make full provision for all watching and lighting necessary for the protection of all persons, animals, vehicles, etc., from injury by reason of the Works. He shall provide ample warning signs, guard rails, etc., around open excavations, stacks of materials, excavated material, debris or the like, and he shall be held liable for all claims made upon himself or upon the Employer by reason of his neglect of all such precautions and provisions.

During the periods of construction of the Works and the repair of defects, the Contractor shall, at his own cost, to the satisfaction of the Employer's Agent and the relevant Authority, take sufficient and adequate measures to avoid interrupting the use of all roads, footpaths, water courses, drains, pipes, telephones, electric wires and cables, premises, places and works, public or private, which may in any way be interfered with by the operations; and shall also afterwards permanently restore all structures and everything which may have been temporarily displaced or otherwise interfered with, all to the satisfaction of the Employer's Agent and the relevant Authority, without extra charge beyond the Contract price.

- **Survey beacons**

The Contractor shall take care to safeguard any permanent survey beacons such as erf boundary pegs and reference beacons. Should the Contractor disturb any such pegs and beacons, he shall have them replaced at his own cost by a registered Land Surveyor.

The Contractor is to provide the Employer's Agent with written confirmation from the Land Surveyor that he has replaced the relevant beacons. The Contractor's attention is drawn to article 35(i) of the Land Surveying Act No. 9 of 1927 (as amended) in this regard.

- **Blasting**

Construction does not take place within a built-up area; however extreme care is to be taken during any blasting operations. No blasting shall be permitted without prior written consent from the Employer's Agent. Written as well as verbal notice will be given to all house / land owners in the affected area 24 hours prior to the blast being set off, and the contractor is to do a survey of all the houses / property (internal and external) in the area prior to blasting.

A full daily report of all blasting operations (in duplicate) is to be completed by the Contractor.

This report shall inter alia contain the following information:

- Date and time of each blast
- Number of holes
- Charge per hole
- Use of relays, etc.

This report is to be submitted to the Employer's Agent on a weekly basis and is to be countersigned by the Employer's Agent.

The contractor is to be noted that he is not to use or permit any person to use an explosive powered tool, unless:

- a) it is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and
- b) the firing mechanism is so designed that the explosive powered tool will not function unless:
  - i. it is held against the surface with a force of at least twice its weight; and
  - ii. the angle of inclination of the barrel to the work surface is not more the 15 degrees from a right angle.

Furthermore, the Contractor will be responsible to acquire the consent of all relevant authorities within the area which may be affected due to blasting activities, the aforementioned activity will be subject to the Employer's Agents approval and written instruction to proceed with the process of acquiring consent.

- **Protection of existing vegetation**

Before any tree is cut down and removed from the site, the Contractor shall confirm the necessity of such action with the Employer's Agent or the Employer's Agent's Representative.

- **Access to individual erven**

Access to all public and private property must be maintained at all times. Where trenches cross the access point to any property, the Contractor is to arrange for adequate and safe vehicular and pedestrian crossings over the trenches.

The Employer's Agent must approve the method of providing access before any excavation commences.



- **Use of construction vehicles and equipment**

The contractor shall ensure that all construction vehicles and mobile plants

- a) are of an acceptable design and construction;
- b) are maintained in a good working order;
- c) are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
- d) are operated by workers who-
  - i. have received appropriate training and have been certified / licensed competent and been authorised to operate such machinery; and
  - ii. are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;
- e) arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- f) are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guardrails, safety signage and crash barriers;
- g) where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- h) are equipped with an electrically operated acoustic signalling device and a reversing alarm; and
- i) are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.
- j) no person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- k) every construction site is organised in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
- l) the traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;
- m) every traffic route is, where necessary indicated by suitable signs for reasons of health or safety;
- n) bulldozers, scrapers, loaders, and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
- o) whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- p) when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

### **C3.2.6 Permits and Wayleaves**

The Contractor will be responsible for the application and maintenance of any permits and / or wayleaves that may be required by the relevant regulatory authorities affected by the construction of the works. This includes any permits for gravel prospecting and extraction that shall be applied and obtained from the relevant authority for the purposes of securing borrow pits. Original permits and wayleaves shall be kept on site at all times during construction activities.

### **C3.3 Management**

#### **C3.3.1 Setting out of the works**

Generally, the positions of the works have been fixed on the plans according to the existing stand boundaries. The Employer's Agent is to approve all setting out prior to commencement of excavation.

#### **C3.3.2 Excavation of works & safety**

The contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing. The Contractor will evaluate, as far as is reasonably practicable, the stability of the ground before excavation works begin and he/she shall not permit any person to work in an excavation which has not been adequately shored or braced.

The Contractor will cause convenient and safe means of access to every excavation area in which person are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working.

The Contractor must ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed and shall before the commencement of excavation work that may affect any such service, take the steps that may be necessary to render the circumstances safe for all persons involved.

The Contractor shall cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be:

- adequately protected by a barrier or fence of at least one meter in height and as close to the excavation as is practicable; and
- provided with warning illuminates or any other clearly visible boundary indicators at night or when visibility is poor.

The Contractor shall cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

#### **C3.3.3 Inspection by Employer's Agent**

No stage of construction shall be proceeded with until the Employer's Agent or the Employer's Agent's Representative has examined and approved the previous stage. If any work is covered or hidden from view before the Employer's Agent has inspected same, the Contractor shall at his own cost open the covered work for inspection. The Contractor shall also be responsible for making good any work damaged by such uncovering.

#### **C3.3.4 Employment of local labour**

It is specifically required that the Contractor adhere and apply Labour Intensive Construction (LIC) principles as far as possible. In this instance the following procedures must be followed:

- All labour is to be sourced from the Local Municipal area - the Contractor may only import key personnel from elsewhere.
- The fixed rate for the appointment of local labour will be a minimum as specified by law and shall be payable by the Contractor on (at least) a fortnightly basis.

- The Contractor's attention is drawn to Annexure D: Bargaining Council for the Civil Employer's Agenting Industry: Wage and Task Grade Collective Agreement published in Government Gazette No: 39294 on 16 October 2015.
- A Monthly labour report on all local labour i.e. payments and labour days should be submitted to the Employer's Agent at the end of each month in order for the Employer's Agent to submit a report to the Employer.

### **C3.3.5 Site Meetings**

Regular meetings will be held between all relevant parties to establish the progress and / or delays and problems that might occur on site. Any problems of delays will be addressed accordingly and the Contractor will receive proper instructions with reference to this matter.

### **C3.3.6 Daily Records**

Daily records of resources (equipment and people employed) must be kept and must be available on site at all times. These records will include i.e. site instruction book, site diary, site visit register, contractual documentation and minutes of all project meetings. Labour information should be kept updated at all times.

### **C3.3.7 Compliance with applicable laws**

The Contractor shall, in performance of the Contract, comply with all applicable laws, regulations and statutory provisions and agreements, and shall in particular, on the request of the Employer's Agent, provide proof that he has complied therewith with regard to amongst others:

- Wages and conditions of work; and
- Safety

### **C3.3.8 Clearance of site**

On completion of the Works, the Contractor shall clear away and remove from the site all Construction Equipment, surplus materials, rubbish and temporary works of every kind and leave the totality of the site and the works clean and in a safe condition. All streams and watercourses (where applicable) shall be cleaned and restored to the condition as at the commencement of the Works. If the Contractor does not, within a reasonable time, comply with this requirement, the Employer may have the site cleared and recover the cost thereof from the Contractor and/or the contractor's retention moneys.

### **C3.3.9 Management of the Works**

#### **C3.3.9.1 Planning and Programming**

The contractor shall compile and submit to the Employer's Agent, within (2) two weeks, a method statement and bar chart showing the acquiring of materials, manufacturing, delivery, installation and commissioning program.

The Contractor is responsible for liaison and arrangements with the Employer's Agent in connection with the finalisation and approval of the construction programme. The programme shall be in the form of a bar chart only, and shall clearly show the anticipated quantities, the production rates and value of work to be performed each month.

A network-based programme according to the precedence method shall also be provided showing the various activities and critical path in such detail as may be required by the

Employer's Agent. The programme shall be updated monthly in accordance with the actual progress made by the Contractor.

Failure to comply with these requirements will entitle the Employer's Agent to use a programme based on his own assumptions for the purpose of evaluating claims for extension of time and/or additional payments.

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

### **C3.3.9.2 Sequence of the Works**

Sequencing of the works shall be agreed to between the Contractor, the Employer's Agent and the Client to prevent unnecessary lapses in the level of water supply. Sequencing shall generally be determined by the planning and programming referred to above.

### **C3.3.10 Methods and Procedures**

#### **C3.3.10.1 Format of Communications**

All communications regarding the contract shall be channelled through the Employer's Agent or his duty authorised representative.

#### **C3.3.10.2 Fabrications / Shop Drawings**

The Contractor shall submit fabrication/shop drawings to the Employer's Agent at the earliest possible time. The Contractor must allow five (5) working days for approval of the drawings by the Employer's Agent. Only once the Employer's Agent has approved, signed and returned the drawings may fabrication commence.

#### **C3.3.10.3 Normal Working Hours**

Normal working hours shall be between 07:00 and 17:00 on weekdays from Mondays to Fridays and between 07:00 and 13:00 on Saturdays, should the Contractor choose to work on Saturdays, excluding Public holidays.

#### **C3.3.10.4 Interference with Municipal Staff and Operations**

The Contractor shall ensure that none of his staff interfere in any way with any municipal staff member or their functions and duties. Any member of the Contractors staff found to be interfering with municipal staff or operations in any way shall be removed from the site and shall not be allowed to return.

#### **C3.3.10.5 Access for Other Contractors**

The Contractor shall provide reasonable access to other Contractors carrying out work on the site from time to time, as and when such access is required. The Contractor is entitled to request reasonable notification of at least 24 hrs before access by others is required.

#### **C3.3.10.6 Giving Notice of Work to Be Covered Up**

The Contractor shall give the Employer's Agent reasonable time to accommodate examinations in his programme, in which case times for inspections can be agreed on. Requests for examination of work shall be made in the site request book 24 hrs before the examination is required.

If the Employer's Agent attends with the purpose of examining any part or materials of the works at the time and date as agreed upon with the Contractor, and it is found that the works or materials are not yet ready for inspection, the Contractor shall be responsible for the costs of such a visit by the Employer's Agent.

#### **C3.3.10.7 Cost of Test Specimens and Tests**

It is deemed that the Contractor has made provision in his tender for all such services and tests that are required from him. It is the duty of the Contractor to, at his own cost and by means of the necessary tests, prove to the Employer's Agent that the works comply with specifications and regulations.

#### **C3.3.11 Other Contractors on Site**

A civil contractor is expected on site during the contract period and close co-operation between the mechanical and civil contractors shall be required to ensure neither delays the other. Given this scenario, the Contractor responsible for delaying any other contractor shall be liable for all costs associated with the delay.

Programming and liaison between contractors in this regard must be taken into account.

#### **C3.3.12 Testing, Completion, Commissioning, and Correction of Defects**

Refer to the relevant sections in Part C3: Scope of Works and the Particular Specifications as set out in C3.5.

### **C3.4 Health and Safety**

#### **C3.4.1 Health & Safety Issues**

All work is to be carried out in accordance with the Occupational Health and Safety Act and Regulations (Act 85 of 1993) (a copy of which must be kept on site), the Explosive Material Act of (Act 26 of 1956), the Minerals Act of 1991, and the Factories Machinery and Building Work Act (No 22 of 1941).

The Contractor's notice is drawn to the stipulations of the Construction Regulations 2014, a regulation of the Health and Safety Act 1993 (Government Gazette No 10113 of 07 February 2014). The construction regulation will be applied vigorously on the project.

The Contractor to be appointed must have made provision for the cost of health and safety measures during the construction process. The contractor must have the necessary skills, competencies and resources to carry out the work safely. A proper Safety Plan is to be submitted by the Contractor and a copy thereof is to be made available to all applicable appointed labourers and permanent workers on this project.

Before starting work on site, the Contractor shall present to the Employer his Occupational Health and Safety Plan for approval. He shall also appoint a certified Health and Safety Officer in writing and give a copy of the letter of appointment to the Employer.

The Contractor is to ensure that the legal compliance for the Health and Safety issues are in place. Audits will be carried out to ensure that the Contractor is registered and in good standing with the Workmen's Compensation fund and that the Contractor has affected insurance indemnifying the Employer against penalties levied upon the Employer due to the acts of omissions of the Contractor in failing to comply with the provisions of the OHS regulations 2003. A compliance audit will also be carried out to ensure that the Contractor

has appointed a full-time competent person in writing to deal with the issues of the OHS and that a risk assessment has been conducted and a copy of the Safety plan is on site before any work commences.

Operational audits will be carried out on the following important issues:

- That the Safety Plan is on site at all times;
- That the Contractor's Safety file is on site at all times;
- That the Safety Officer is on site at all times;
- That Safety meetings are conducted as per the Safety Plan;
- That employees are working under safe conditions;
- That the public is not placed in danger; and
- That there is no harm to the environment.

#### **C3.4.2 Accommodation of traffic**

It is expected of the Contractor to ensure that the free flow of traffic is possible throughout the construction period.

The Contractor is to provide all necessary barricades, signs and lighting in accordance with the stipulations of the South African Road Signs Traffic Manual, and the Protective Services of the Local Municipality. All work is to be to the satisfaction of the Employer's Agent.

#### **C3.4.3 Reporting of accidents**

In addition to any statutory regulations, the Contractor shall, as soon as practicable, report to the Employer's Agent every occurrence on the Works or the site causing damage to property or injury or death of persons. If required by the Employer's Agent, the Contractor will submit a report in writing to the Employer's Agent within 48 hours of such requirement setting out full details of the occurrence.

The Employer's Agent shall have the right to make any enquiries either on the site or elsewhere as to the cause and results any such occurrence and *the* Contractor shall make available to the Employer's Agent the necessary facilities for carrying out such enquiries.

#### **C3.4.4 Protection of the public**

The Contractor shall erect fences and employ sufficient security personnel to prevent unauthorised access to the site by members of the public. Notices prohibiting access to the site shall be clearly displayed at all access points.

The notices shall be in English and Zulu.

The Contractor shall at all times ensure that his operations do not endanger any member of the public.

As the area is adjacent to areas with public thoroughfare and civilians the Contractor shall take special precautions to prevent public access to any danger areas on the Works, e.g. by temporary barricades and/or fencing as well as access control.

#### **C3.4.5 Barricades and lighting**

All excavations and openings in walls and slabs into or through which a person may fall shall be securely barricaded at all times in accordance with the requirements of the applicable OH&S regulations.

### **C3.5 Project Specification**

The Project Specification forms an integral part of the contract and supplements the standard specifications listed in Part C3.2 Construction under Item C3.2.1 Work Specifications. The Project Specification is made up of three portions as indicated here below.

#### **General / Standard Specifications**

This portion of the Project Specification contains general descriptions of the works, the site and the requirements to be met. The standard specifications have been written to cover all phases of work normally required and may cover items not applicable to this particular contract.

#### **Amendments to General / Standard Specifications and Additional Specifications**

This portion of the Project Specification contains relevant information pertaining to choices and alternatives provided for in the Standard Specifications i.e. choices of materials or construction methods. It also contains some additional specifications and amendments to the Standard Specifications required for this particular contract.

The number of each clause and each payment item in this portion of the Project Specifications consists of the prefix PS followed by a number corresponding to the number of the relevant clause or payment item in the Standard Specifications. The item number of any new clause or payment item (that does not form part of an existing clause or a payment item in the Standard Specifications) is also prefixed by "PS" followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the Standard Specifications.

#### **Particular Specifications**

This portion of the Project Specification contains particular specifications applicable only to this project and consists of the prefix P followed by alphabetical numbering.

#### **Discrepancy between specifications**

In the event of any discrepancy between a part or parts of the Standard- or Particular Specification and the Project Specification, the Project Specification shall take precedence. In the event of any discrepancy between the Specifications and the Drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Employer's Agent before the execution of the work under the relevant item.

#### **Numbering reference**

Where, in the Bill of Quantities, an item from a particular section of the Standard Specifications is used in another section, the item number of the source section is retained but prefixed by the number of the section where the item is used, (e.g. Item 61.03 used in Sect. 22, will be 22/61.03 which means that the provisions of Section 61 in respect of that item remain valid although the item is used in Section 22). This applies to new items introduced in the Project Specifications for a specific section but used in another section.

## DETAILS OF RELEVANT CIVIL ENGINEERING PROJECT SPECIFICATIONS

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### **C3.5.1 General / Standard Specifications**

#### **PS 1. SITE CONDITIONS**

##### **PS 1.1 Nature of Materials on Site**

A geotechnical investigation is being conducted as the work carried out under this phase deem it a necessity. The quality and type of materials were not confirmed when the Bill of Quantities were quantified and will be adjusted accordingly when the geotechnical investigation is concluded.

##### **PS 1.2 Excavateability and Contractors Liability**

Tenderers shall be deemed to have fully satisfied themselves as to the geological, environmental and cultural resource conditions that pertain to the Site of the Works before submitting their tenders.

#### **PS 2. CONSTRUCTION AND MANAGEMENT REQUIREMENTS**

##### **PS 2.1 General**

The Contractor shall exercise due diligence and care in constructing the Works, in order to ensure that no damage is caused to public or private property or to the property of the Municipality and that danger to persons, fauna, flora and livestock are limited to the extent that is reasonably possible.

The Contractor shall indemnify the Municipality against any and all claims that may arise from his construction of the Works, as required by the Conditions of Contract. It is the responsibility of the tenderers to acquaint themselves of the geology and soil conditions of the site before submitting a tender.

##### **PS 2.2 Quality Assurance (QA) (Read with SANS 1921 – 1: 2004 Clause 4.4)**

The Contractor will be solely responsible for the production of work that complies with the specifications to the satisfaction of the Employer's Agent. To this end, it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) System on site.

The Employer's Agent will audit the Contractor's QA System on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems, which could cause a delay or failure to the works. The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his approved QA System. The Contractor must note that it is not the duty of the Employer's Agent or the Employer's Agent's Representative to act as foreman, site agent or surveyor.

##### **PS 2.3 Site Establishment (Read with SANS 1921 - 1: 2004 Clause 4.14)**

This contract is to be executed in an area surrounded by rural settlements and as such, safety will be paramount. Furthermore, all due courtesy must be exercised as far as local resources are concerned (labour and materials).

The Employer's Agent will facilitate all communication with the target community through liaison with the Employer and CLO.

**PS 2.4 Management of the Environment (Read with SANS 1921 - 1: 2004 Clause 4.19)**

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

**Natural Vegetation**

Only those trees and shrubs directly affected by the works and such others as the Employer's Agent 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 Employer's Agent.

**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.

**Environmental Management Plan**

In addition to the above, all requirements of the Environmental Management Plan (EMP) will be adhered to.

**PS 2.5 Submit detail as-built drawings of existing services and adjustments to construction drawings**

The Contractor will be responsible for the submission of all as-built information (drawings etc.) of all existing services intersecting pipeline trenches as well as any applicable adjustments to the construction drawings. The lump sum tendered shall include full compensation for all information in the possession of the Contractor as required above in order to complete the as-built drawings.

Any information in the possession of the Contractor, which is necessary for the Employer's Agent's Representative to complete his/her as-built drawings must be submitted to the Employer's Agent's Representative before a final payment certificate and a certificate of completion will be issued.

**PS 2.6 Features Requiring Special Attention**

**PS 2.6.1 Built-up Areas**

The Contractor's attention is drawn to the fact that the portions of the works may be constructed close to built-up areas. The Contractor shall exercise all necessary precautions and take all necessary steps to ensure the safety and convenience of the public. Where applicable, the Contractor shall provide access for traffic over and through the works and for residents to their places of abode, all as described in the Specifications. The Contractor in his programming must make allowance for delays resulting from the aforesaid.

The Contractor shall give residents a minimum of 48 hours written notice of his intent to close access to residential stands. No access to a residential stand shall be closed for a period longer than 48 hours.

### **PS 2.6.2 Local Products**

The Contractor shall use materials manufactured within South Africa and SANS approved where applicable in his Works, provided that such materials conform in all respects to the relevant requirements contained in the Specifications.

### **PS 2.6.3 Status of Buildings and Structures**

The Contractor shall give all residents or other parties owning a building or structure within an appropriate radius (not less than 100m) from any point of blasting, a minimum of 48 hours' notice in the format as approved by the Employer's Agent and/or relevant authority of his intent to execute any blasting work. The Contractor shall note all aspects relevant to the condition of the affected buildings and/or structures prior to blasting and shall acquire the signature of the owners/occupants agreeing to such conditions.

Subsequent to blasting, both the Contractor and the owners/occupants shall sign a form confirming the condition of the buildings and/or structures. In the event of damage to existing buildings and/or structures as a result of blasting, remedial work shall be done to the satisfaction of the owners/occupants at the Contractor's expense. Compliance with this clause will not relieve the Contractor of any of his responsibilities in terms of the Contract.

### **PS 2.6.4 Care of the Site and Environment**

At all times during construction of the works and upon completion thereof, the site of the works and its environment shall be kept and left in a clean and orderly condition. The Contractor shall store all materials and equipment for which he is responsible in an orderly manner and shall keep the site free from debris and obstructions.

Clearing, grubbing, excavation and spoiling of excess and waste materials may only take place in the positions and over the areas shown on the drawings or authorized in writing by the Employer's Agent. The Contractor shall protect fauna and flora at all times and within other areas surrounding the Site of the Works, to the approval of the Employer's Agent, the Municipality and the Employer.

In addition to the above, the following environmental mitigation measures shall be taken during construction of the Works:

- a) The Contractor's vehicle and plant maintenance depot shall be provided with suitable and effective oil disposal facilities. Should an oil, diesel or petrol spillage occur, the Contractor shall remove all contaminated soil to an approved disposal site.
- b) No bins containing organic solvents may be cleaned on Site, unless liquid waste disposal facilities are provided on Site for this purpose, all to the approval of the Employer's Agent.
- c) Dust suppression techniques should be applied during construction of the Works, especially after construction of the top structures has commenced. The Contractor shall water appropriate portions of the Site at suitable intervals as approved by the Employer's Agent in order to achieve this objective.

Should personnel or sub-contractors of the Contractor not comply with the requirements for environmental protection that are set out above, this shall be considered sufficient cause for the Employer's Agent to order the replacement on Site of such employees or sub-contractors.

### **PS 2.6.5 Control of Water**

The Contractor shall at all times and in all respect be responsible for the handling of storm water from higher-laying areas above the works and for the handling of any sub-surface water especially in excavations for terraces and trenches that may affect the works and for the handling of all spoiled water when disconnecting existing water connections or valves.

The contractor shall also take note of the draining and handling of waste water in an appropriate manner and disposal thereof at an approved treatment facility, no raw sewage effluent or waste water will be discharged in an unsafe manner that may negatively impact on the environment or public health and safety.

All payments to be made in this regard and all costs related thereto, shall be deemed to be included in the relevant items that are included in the Bill of Quantities.

### **C3.5.2 Amendments to General / Standard Specifications and Additional Specifications**

#### **PSA PRELIMINARY AND GENERAL (SANS 1200A)**

##### **PSA 3.1 Quality of Samples**

All materials used shall be suitable for the purposes for which they are intended. Materials shall comply with the requirements of the South African Bureau of Standards, where such standards are available.

#### **PSA 5 CONSTRUCTION**

##### **PSA 5.1 Setting out of the work and protection of beacons (Sub-clause 5.1.1)**

The Contractor shall be responsible for the true and proper setting out of the Works from the basic control points shown on the Drawings or indicated by the Employer's Agent on site and shall ensure the correct location of the Works in relation to such points. The Contractor has to ascertain himself of the correctness of the pegs and benchmarks in the field. Any discrepancy shall be immediately reported to the Employer's Agent any costs arising from failure to do so, shall be the responsibility of the Contractor. The Employer's Agent may alter any part of the works to suit local conditions if necessary. No claim for incorrect setting out will be considered.

##### **PSA 5.1.1 Services (Sub-clause 5.4)**

All excavations to expose existing known services shall be excavated by hand in all materials by the contractor. Any existing service in the road reserve or municipal servitude that is damaged as a result of negligence by the contractor will be repaired by the contractor to the satisfaction of the Employer's Agent at his own cost.

##### **PSA 5.2 Watching Barricading, lighting and traffic crossings (Clause 5.2)**

All open excavations shall be properly demarcated with reflective tape, barricading and any other requirements that the Local Authority has.

##### **PSA 5.3 Protection of Structures (Clause 5.3)**

The Contractor must contact house owners at least two weeks prior to working in close proximity to existing buildings and to inspect buildings before and after work had been completed.

#### **PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES**

*REPLACE THE HEADING AND THE CONTENTS OF SUBCLAUSE 5.4 WITH THE FOLLOWING:*

#### **PSA 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES**

##### **PSA 5.4.1 Location of Existing Services**

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent Contractor to be present on, under, over or within the Site.

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Employer's Agent, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. Neither the Employer

nor the Employer's Agent offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Employer's Agent, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of sub Clauses 4.4 of GCC 2015 and 5.1.2.2 of SANS 1200 D (as amended) shall apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the site.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'known services' and their positions shall be indicated by the Contractor on a separate set of drawings, a copy of which shall be furnished to the Employer's Agent without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the site, it shall henceforth be deemed to be a known service and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the site shall apply. The Contractor shall notify the Employer's Agent immediately when any such service is encountered or discovered on the Site.

Whilst he is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to

- (a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognizance being taken of such deviations in line and level which may reasonably be anticipated, and
- (b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause.

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor's operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of any costs incurred in preparing and submitting to the Employer's Agent the Drawings as aforesaid. These costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Employer's Agent and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

#### **PSA 5.4.2 Protection During Construction**

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising there from to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Employer's Agent, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of Subclause 5.9 of SANS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

#### **PSA 5.4.3 Alterations and Repairs to Existing Services**

Unless the contrary is clearly specified in the Contract or ordered by the Employer's Agent, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Employer's Agent, who will either make arrangements for such work to be executed by the owner of the service, or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Employer's Agent, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take appropriate steps to minimize damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

#### **PSA 5.7 Safety (Clause 5.7)**

Add the following:

1. The Contractor shall at all times observe adequate safety precautions on Site to ensure the safety of his own staff as well as that of the public and other persons engaged in or about the Works. In this respect, he shall observe all laws, ordinances and regulations pertaining to his work.
2. The Contractor's attention is specifically drawn to the following Acts, and particularly to the relevant regulations under each Act, copies of which shall at all times be kept by him on the Site:
  - The Factories, Machinery and Building Work Act (Act 22 of 1941)
  - The Explosives Act (Act 26 of 1956)
  - The Mines and Works Act (Act 27 of 1956)
  - The Occupational Health and Safety Act (Act 85 of 1993)
3. The Contractor is also required to comply with the safety precautions set out in the following publications, copies of which shall also be kept by him on the Site:
  - The Code of Practice relating to the safety of men in civil Engineering inspection pits and small – diameter vertical shafts. (Transactions of the South African Institution of Civil Employer's Agents, Vol. 2, No. 11, November 1960, obtaining from the Secretary, S.A. Institution of Civil Employer's Agents, PO Box 93495, Yeoville, 2143).
4. The Contractor shall provide suitable and safe access by way of ladders, gangways, etc.

- to all parts of the Works as may be required for construction purposes or for inspection by the Employer's Agent or the authorised Inspectors in terms of the above-mentioned Acts.
5. All precautions shall be taken to protect workmen against falling material and/or objects and other dangers whilst they are carrying out their duties. Trenches shall in every way be made and kept safe for persons working therein.
  6. All persons working, inspecting or supervising in places where falling material and/or objects could be encountered shall be provided by the Contractor with hard hats (which have not expired) of a type approved by the Inspector of Mines, the use of which shall be strictly enforced.
  7. The Contractor shall provide a properly equipped first-aid box, which shall be accessible at all times.
  8. Where adequate safety precautions are not being observed, the Employer's Agent may order the Contractor to comply with minimum safety requirements at the latter's expense. Compliance with such order will not absolve the Contractor from any of his responsibilities and obligations under the Contract.
  9. The Contractor shall display on a prominent place the following emergency information:
    - i. Local Police: Telephone number
    - ii. Local Ambulance: Telephone number
    - iii. Local Fire Brigade: Telephone number
    - iv. Nearest Doctor
    - v. Name
    - vi. Telephone number (office hours)
    - vii. Telephone number (after hours)
    - viii. Consulting room street address

#### **PSA 6.2 Degree of accuracy (Sub-clause 6.2)**

Degree of Accuracy shall apply to all components of the Works except where otherwise specified in the Schedule of Quantities and/or Drawings and provided that the minimum permissible deviation given for an element will prevail where more than one deviation can be interpreted in Clause 6.2.3(d).

#### **PSA 7 Testing (Sub-clause 7)**

The onus rests on the Contractor to produce work, which conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings and the Contractor must at his own expense, institute a quality control system and provide experienced Site Agents, foremen, surveyors, materials technicians and other technical staff, together with all instruments and equipment, to ensure adequate supervision and positive control of the works.

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

The Contractor's attention is drawn to the provisions of the various sections of the Specifications regarding the minimum frequency of the testing that will be required for process control. The Contractor shall at his own discretion increase the frequency where necessary to ensure adequate control.



The Contractor shall submit to the Employer's Agent the results of all relevant tests, measurements and levels indicating compliance with the specifications and construction drawings on completion of every part of the work for examination and approval.

Should the results of any of these tests fall below the required standards as specified in the specifications and construction drawings, the cost of any additional tests required by the Employer's Agent will be to the account of the Contractor.

#### **PSA 7.2 Laboratory (Sub-clause 7.2)**

A Laboratory for the use of the Employer's Agent Representative is not required on site. A registered commercial laboratory approved by the Employer's Agent and appointed by the Contractor shall do all acceptance control tests required in terms of the Contract. All tests must be done according to the tests prescribed in the SANS 1200 under the relevant sections.

#### **PSA 7.4 Statistical analysis of control tests (Sub-Clause 7.4)**

Statistical control methods will not be applied under this contract.

### **PSA 8 MEASUREMENT AND PAYMENT**

#### **PSA 8.2.1 Fixed-Charge and Value-Related Items (Sub-clauses 8.2.1. and 8.3)**

The tendered sums for the fixed-charge and value related items in the P&G Section of the Schedule of Quantities shall not be subject to any variation if the actual value of the work done exceeds or falls short of the accepted tendered amount within the limit stated in Clause 6.3 of the General Conditions of Contract 2015, or if extension of time for the completion of the works is granted.

Payment for fixed-charged and value-related items will be done in three separate payments as follow:

40% of total cost after the Contractor has established and equipped the site office and after the Employer's Agent is satisfied that a substantial start of the actual construction work has been made;

40% of total cost after 50% of the actual work (excluding material on site) has been completed and approved by the Employer's Agent;

20% of total cost on issue of practical completion certificate by Employer's Agent, according to the guidelines of the General Conditions of Contract 2015.

#### **PSA 8.2.2 Time-Related Items**

The tendered amount for a time-related item will be increased if an extension of time for the completion of the works is awarded on the condition that the activity related to the item tendered for must be sustained during the extended period.

The ratio between the increased amount for a time-related item and the tendered amount must be the same as the ratio between the extension of the time period for the completion of the work and the original time period allowed for completion of the works. If the works is completed before the end of the original time period allowed for completion of the works, the tendered amount of a time related item that is influenced by the earlier completion would be reduced similarly.

#### **PSA 8.2.2.1 Standing time costs due to riot, etc. for the Contractor's total operation.**

##### **Unit: Sum per Working Day**

The unit for measurement shall be a working day, and a working week shall be held to consist of five working days and a working day of 9 hours, unless otherwise agreed upon. The sum per working day tendered under this time-related item shall represent that part of the Contractor's costs for standing time of whatever nature.

This payment item will only be applicable to delays in the execution of the Works and additional costs, which in the opinion of the Employer's Agent are incurred as a result of riot, commotion, politically motivated sabotage and acts of terrorism, or disorder outside the control of the Contractor.

The provision of this clause shall in no way prejudice the right of the Employer or the Contractor to terminate the Contract under the provisions of Clause 9. of the General Conditions of Contract, 3<sup>rd</sup> Edition (2015).

#### **PSA 8.3.2.1 Facilities for Employer's Agent**

The Contractor is to provide one furnished site office for the use of the Employer's Agent and his representative's safe to the requirements of SANS 1200 AB 3.2 or similar approved. A monthly time-related provisional sum has been included in the Schedule of Quantities to cover the rental costs of accommodation for the Employer's Agent. These amounts shall be payable by the Contractor to the Employer's Agent according to the provisional sums allowed and upon receipt of a tax invoice for such amounts.

The Contractor shall provide and maintain one carport with waterproof roofing for the duration of the Contract for the use of the Employer's Agent. The floor shall consist of crushed aggregate to alleviate dust and muddy conditions or similar approved.

##### **a) Furnished Office**

No additional site office, carport or housing for the Employer's Agent is required. A sum amount (Sum) was included in the Preliminary and General section to cover the applicable expenses for this item for the duration of this Contract.

##### **b) Cellular Telephone**

No cellular telephone has to be provided for the Employer's Agent Representative for the duration of the contract. Measurement and payment shall only be made for the relevant time related item.

##### **c) Name Board**

Number of name boards as per Bill of Quantity will be ordered by the Contractor according to the Employer's Agent's specifications, complete with dimensions, wording and specifications as prescribed, within one month from the commencement date. The Contractor shall be responsible to transport the name board to site and to erect it at the indicated position on suitable supporting posts. The Contractor shall remove the name board completely from site after construction is completed, before the last payment certificate shall be approved.

**PSA 8.4.2 Operation and Maintenance of facilities on site for the duration of construction, except where otherwise stated**

The tendered sums for the fixed-charge and value related items in the P&G Section of the Schedule of Quantities would not be subject to any variation if the actual value of the work done exceeds or falls short of the accepted tendered amount within the limit stated in Clause 6.11 of the General Conditions of Contract (2015).

**PSA 8.4.2.1 Facilities for Employer's Agent (Time Related Items)**

**a) Cellular Telephone**

No cellular telephone has to be provided for the duration of the contract. However, the contractor is responsible for costs as provided for in the Bill of Quantities.

**b) Name boards**

Quantity of Name boards as specified in the approved Bill of Quantities shall be maintained for the duration of the Contract.

**c) Survey Assistants and Materials**

The Contractor shall provide the following survey equipment on the site from the commencement to the completion of the works, which shall also be available for the use of the Employer's Agent and his representatives.

- a) 1 X 100m Steel measuring tape;
- b) Steel pegs, shovels, picks etc. which the Employer's Agents Representative may require during the contract;
- c) 1 X Theodolite with tripod and 5m staff.
- d) One complete Troxler test unit, with proof of recent calibration.

**d) Hotel or other Accommodation or office required for the Employer's Agent Representative**

These items will include the cost of rented office accommodation and the provision of telecommunication facilities to the Employer's Agent. The Contractor will be responsible for this prime cost items to the amount as shown in the Bill of Quantities. These services will be provided to the Contractor by the Employer's Agent and will be billed in advance. These items will include all overhead costs, maintenance and insurance with respect to the provision of office accommodation and cellular- and landline telecommunication facilities. This item shall be payable to the Employer's Agent prior to certification of the second construction payment certificate.

**e) Administrative assistance to the Contractor**

This item will entail the compensation of administrative assistance to the Contractor by the Employer's Agent and will include assistance relating to the:

- Calculation and determination of project quantities;
- Compilation of construction payment certificates; and
- Copy and submission of construction payment certificate.

The Contractor will be responsible for this prime cost item to the amount as shown in

the Bill of Quantities. This item will be billed in advance and will be payable to the Employer's Agent prior to certification of the second construction payment certificate. This item will include all computer related / electronic work, facsimiles, printing and copying as well as travelling and time-based work in this instance.

**f) Health and Safety Inspections on Site**

This item will include the provision of Health and Safety Inspections on Site by a certified Health & Safety Officer under the auspices of the Employer's Agent. The Health and Safety Officer will ensure compliance of the Contractor with the OHS Act and he / she will have the authority to stop construction work in the event of non-compliance. The Contractor will be responsible for this prime cost item to the amount as shown in the Bill of Quantities. This service will be billed in advance and the item shall be payable to the Employer's Agent prior to certification of the second construction payment certificate.

**g) Environmental Management Plan Audits**

This item will include the provision of Environmental Management Plan (EMP) Audits on Site by an Environmental Control Officer (ECO) under the auspices of the Employer's Agent. The ECO will monitor compliance of the Contractor with the EMP. The Contractor will be responsible for this prime cost item to the amount as shown in the Bill of Quantities. This service will be billed in advance and the item shall be payable to the Employer's Agent prior to certification of the second construction payment certificate.

**PSA 8.4.6 Additional Obligations**

**PSA 8.4.6.1 OHS Act Obligation .....Unit: Month**

The sum shall cover the full compensation and all time related costs for the duration of the contract, for the compliance with the Occupational Health and Safety Act, Construction Regulations 2003 and all the requirements stipulated in the Employer's Health and Safety Specifications. The cost shall include the salary for a full time OHS Officer for the project.

**PSA 8.4.6.2 Security services costs.....Unit: Month**

The sum shall cover the full compensation and all costs for a sufficient 24 hour guarded services for the duration of the contract.

**PSA 8.4.6.3 Community Liaison Officer .....Unit: Stated Sum**

The stated sum shall cover full compensation and all costs payable on a monthly basis, to provide a full time qualified and suitable experienced Community Liaison Office for the duration of the contract. The stated sum shall also cover for the CLO cellphone airtime.

**PSA 8.4.6.4 EMP Compliance .....Unit: Month**

The sum shall cover the full compensation and all time related costs for the duration of the contract, for the compliance with the Environmental Management Plan, and all the requirements stipulated in the plan.

**PSA 8.9 Construction Monitoring**

Construction monitoring costs will be Monitoring Level 3 (Engaging Resident Employer's

Agent) and will be measured as a Lump Sum amount as indicated in the Contract Document.

- a) Regularly visit the site at a frequency which may vary during the course of the project, and such visits may be daily or weekly according to the demand of the project;
- b) Regularly, review samples of materials and work procedures for conformity to the contract documentation and design specifications. The ER shall review regular samples of important completed work prior to covering up, or on completion as appropriate.

The Contractor will take ultimate responsibility for quality of work and remains responsible to put in place quality control processes to control its output in terms of the design specifications and requirements whereas the design Employer's Agent will conduct inspections and acceptance testing to confirm conformance to the design specifications prior to certification of the works.

#### **PSA 9.1 Submit detail as-built drawings of existing services and adjustments to construction drawings**

The Contractor will be responsible for the submission of all as-built drawings of all existing services intersecting pipeline trenches as well as any applicable adjustments to the construction drawings. The lump sum tendered shall include full compensation for all information in the possession of the contractor as required above in order to complete the as-built drawings must be submitted to the Employer's Agent Representative before a certificate of completion will be issued for the works.

#### **PSA 9.2 Detailed setting out of the work**

The Contractor will ensure that all the works be set out from existing survey beacons by a registered surveyor. The sum tendered shall be regarded as inclusive of all related survey work on site.

The Employer's Agent will provide survey beacons (of adequate type and in sufficient quantity) as benchmarks. From information provided on drawings issued by the Employer's Agent, the Contractor shall be responsible to provide all positions and levels, of all intermediate points required for proper control of the works.

As benchmarks may be disturbed during the execution of the works, all levels and setting out pegs shall be referred to at least two benchmarks. The Contractor will ensure that all works are set out from existing survey beacons by a professional registered land surveyor. The setting out data, including the elevation (obtain x, y, z coordinates) from these pegs shall be submitted to the Employer's Agent for evaluation of final natural ground levels (NGL) prior to the commencement of excavations. In the case of deviation from the original pipe route for whatever reason, the contractor will at his own cost survey the new proposed route and submit the data to the Employer's Agent for approval.

Preservation and replacement of beacons and pegs will be subject to the Land Survey Act, 1927 (Act No 9 of 1927).

#### **PSA 9.3 Compile and submit Health and Safety Plan**

The lump sum tendered shall include full compensation for the provision and maintenance of a Health and Safety Plan, risk assessment, permit applications and notifications as called for in the Act and Regulations.

Eighty percent (80%) of this amount will be paid when an approved Health and Safety Plan has been achieved. A further 10% will be paid when the value of work certified by the Employer's Agent exceeds one half of the tender price and the remaining 10% will be payable upon issue of a completion certificate.

#### **PSA 9.4 Implement Health & Safety Plan**

The lump sum tendered shall include full compensation for the compliance with the approved H&S Plan and inter alia for the following:

- Provision and maintenance of Health & Safety File;
- Provision of construction supervisors and safety officers;
- Health and Safety training for employees and subs;
- Provision of protective clothing;
- Provision of safety fences, signs and barricades; and
- Scheduling of monthly safety meetings and providing monthly reports accordingly, etc.

#### **PSA 9.5 Provision of realistic construction programme**

The lump sum tendered shall include full compensation for the compilation and submission of a realistic construction programme for approval by the Employer's Agent:

- Within the stated period after appointment;
- Before commencement with any construction activities; and
- As and when so required / instructed by the Employer's Agent.

#### **PSAB EMPLOYER'S AGENT'S OFFICE (SANS 1200AB)**

##### **PSAB 3.2 Office Buildings**

See Clause PSA 8.3.2.1 (a). The Contractor shall further ensure that adequate site meeting facilities are available and that the Employer's Agent's Representative has full use of the Contractor's ablution and other facilities.

##### **PSAB 5.5 Survey Equipment**

The Contractor shall provide the necessary survey equipment for his own survey requirements on site. The Employer's Agent's Representative will make use of the Contractor's survey equipment and assistants when required. The Contractor shall make allowance for such usage in his tendered rates.

#### **PSC SITE CLEARANCE (SANS 1200C)**

##### **PSC 3.1 Disposal of Material**

Add the following:

"The Contractor shall obtain his own dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance."

#### **PSC 8 MEASUREMENT AND PAYMENT**

##### **PSC 8.2.1 Clear and Grub**

The removal of all rocks and boulders on site over 0,15m<sup>3</sup> will be paid under sub-clause DB 8.3.2(b).

#### **PSC 8.2.11 Herbicide Treatment**

The rate shall cover the cost of all associated plant, labour, material, compliance with Health and Safety and appropriate PPE (Personal Protective Equipment) for the treatment of cut tree stumps as measured under payment item no 2.1.2 with an approved herbicide such as Chopper – imazapyr 100g/l or similar approved herbicide (safe for use at Mpumulwane reservoir).

#### **PSC 8.2.12 Demolition / Removal of Existing Items Listed**

The rate shall cover the cost of all associated plant, labour, material, loading, transportation and dumping at approved site of the items listed under payment item no 2.1.4.

#### **PSC 8.2.13 Grass Cutting**

The sum amount shall cover the cost of all associated plant, labour, material, compliance with Health and Safety and appropriate PPE (Personal Protective Equipment), loading, transportation and dumping at approved site of the cutting / trimming of grass and weeds, removal and disposal thereof including any waste material within existing water treatment works site, limited to internal area of existing boundary fence as well as treatment of boundary fence with appropriate broad spectrum weed killer (Round up extended control or similar approved). Price to allow for x 2 (two) carrying out of item over contract period (weed killer to be applied once only). Payment of 50% of sum amount after first completion of item and 50% to be paid after second completion of item.

#### **PSC 8.2.14 Treatment of Existing Timber Masts**

The sum amount shall cover the cost of all associated plant, labour, material, compliance with Health and Safety and appropriate PPE (Personal Protective Equipment) for the treatment of existing timber masts within reservoir boundaries with appropriate coal tar-based wood preservative (Creosote or similar approved).

#### **PSC 8.2.15 Cleaning of Existing Outlet Structures**

The sum amount shall cover the cost of all associated plant, labour, material, compliance with Health and Safety and appropriate PPE (Personal Protective Equipment) for the Cleaning out and removal of material within and around existing outlet structures and drainage channels. Removal and disposal of material at approved site.

#### **PSC 8.2.16 Erosion Control**

The rates shall cover the cost of all associated plant, labour, material, compliance with Health and Safety and appropriate PPE (Personal Protective Equipment) for the Importation of material (G6 - G8) for erosion control around existing building, drainage channels and concrete aprons and compaction in layers not exceeding 150mm (93% MOD AASHTO) up to 150mm below NGL. Importation of topsoil to fill final 150mm and supply and plan grass (buffalo grass or similar approved).

## **PSD EARTHWORKS (SANS 1200 D)**

### **PSD 2 INTERPRETATIONS**

#### **PSD 2.3 DEFINITIONS**

Replace the definition for "Specified density" with the following:

**"Specified density:** The specified dry density expressed as a percentage of modified AASHTO dry density."

Replace the definition for "stockpile" with the following:

**"Stockpile (verb):** The process of selecting and, when necessary, loading, transporting and off-loading material in a designated area for later use for a specific purpose."

Add the following definitions:

**"Commercial Source:** A source of material provided by the Contractor, and including any borrow pit, provided by the Contractor.

**Fill:** An embankment or terrace constructed of material obtained from excavations or borrow pits. In roads, it includes the earthworks up to the underside of the selected subgrade level.

**Fill (material):** Material used for the construction of an embankment or terrace.

**Roadbed:** The natural in situ material on which the fill, or in the absence of fill, the pavement layers, are constructed."

### **PSD 3 MATERIALS**

#### **PSD 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES**

##### **PSD 3.1.2 Classes of Excavation**

Refer to PSDB 3.1

### **PSD 5 CONSTRUCTION**

#### **PSD 5.1 PRECAUTIONS**

##### **PSD 5.1.1 Safety**

###### **PSD 5.1.1.1 Barricading and Lighting**

Replace "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" WITH "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

###### **PSD 5.1.1.2 Safeguarding of Excavations**

Replace "Machinery and Occupational Safety Act" WITH "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

##### **PSD 5.1.2 Existing Services**

###### **PSD 5.1.2.2 Detection, Location and Exposure**

Replace the contents of sub-clause 5.1.2.2 with the following

"The exposure by the Contractor of underground services, as required in terms of Sub-clause 5.4 of SANS 1200 A (as amended) shall be carried out by careful hand excavation at such positions and to such dimensions as are agreed to by the Employer's Agent.



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CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE

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Unless otherwise instructed or agreed by the Employer's Agent, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted to the following densities:

- a) In roadways: 93% Mod AASHTO density; and
- b) In all other areas: 90% Mod AASHTO density.

### **PSD 5.1.2.3 Protection of cables**

*Replace sub-clause 5.1.2.3 with the following*

### **PSD 5.1.2.3 Protection During Construction**

Further to the requirements of Sub-clause 5.4.2 of SANS 1200A (as amended), major excavating equipment and other Plant shall not be operated dangerously close to Known Services.

Where necessary, excavation in close proximity to Known Services shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. No additional payment will apply to such more difficult work.

Should any service not being a Known Service be discovered or encountered during the course of the Contract, the Contractor shall, in addition to complying with the requirements of Sub-clause 5.4.2 of SANS 1200A (as amended), immediately notify the Employer's Agent thereof and implement such measures as will prevent damage of such service or, if it was damaged in the course of discovery, will prevent and minimise the occurrence of any further damage occurring."

### **PSD 5.1.2.4 Negligence**

*Delete sub-clause 5.1.2.4.*

## **PSD 5.2 METHODS AND PROCEDURES**

### **PSD 5.2.2.1 Excavation for General Earthworks and for Structures**

*Add the following to paragraph (b):*

"When the nature of the material precludes the above procedure, additional excavations shall be carried out to provide working space for the erection of formwork. In general, payment will be made for excavating a working width of 600 mm, but the Contractor may excavate a greater working width at no additional cost to the Employer."

*Replace the first sentence of paragraph (e) with the following:*

"Where excavations have been carried below the authorised levels, the Contractor shall backfill such excavations to the correct level with approved gravel compacted to 90% of modified AASHTO density or to the density of the surrounding material, whichever is the higher density.

Where excavations for structures have been carried out in hard material, the Employer's Agent may direct that over-excavation be backfilled with weak concrete if there is a danger of settlement or differential settlement of the foundations.

Where the sides of excavations against which concrete is to be cast have been over-excavated or have collapsed partially, the Contractor shall re-trim the excavations if necessary and, unless other remedial measures are agreed to by the Employer's Agent, shall cast the concrete for the structure, including the additional concrete that may be required as a result of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor's account."

### **PSD 5.2.2.3 Disposal**

*Replace the second sentence with the following:*

"The Contractor shall, provide all necessary spoil sites for the spoiling of all surplus and unsuitable materials and shall make the necessary arrangements with the owner of the site where the material is disposed of, and pay all charges and levies as may be applicable for the use of such spoil sites. Transport costs shall be included.

Every spoil site provided by the Contractor shall be approved by the local authority in whose area it is located, and the spoiling shall comply with the applicable statutory and municipal regulations as well as the requirements of the owner of the spoil site.

Add the following sub-clause in sub-clause 5.2.2:

#### **PSD 5.2.2.4 Selection and Stockpiling**

Approval or designation of the material in a particular borrow pit or excavation for a particular purpose does not imply that all the material in the borrow pit or excavation is suitable for the particular purpose for which the said approval or designation relates, nor that all material in the borrow pit or source should be used for the particular purpose. The Contractor shall select suitable material from that borrow pit or source, discard unsuitable material and reserve material for other purposes as necessary.

The Contractor shall organise and carry out its operations in such a manner as will prevent the contamination of suitable embankment and backfill material with unsuitable materials. Any excavated material which becomes, in the Employer's Agent's opinion, unsuitable for use in embankments or backfill as a result of contamination, shall be disposed of in a manner acceptable to the Employer's Agent and shall be replaced by the Contractor with materials acceptable to the Employer's Agent, all at the Contractor's cost.

When required, or when ordered by the Employer's Agent, material shall be stockpiled for later use.

#### **PSD 5.2.2.5 Utilization of excavated material**

All excavated material and material obtained from any temporary work shall, in so far it is suitable, be utilized for backfill of trenches or embankments where applicable. Material unsuitable for use as backfill or in excess of the required quantity to complete the backfill shall be spoiled or utilized as directed by the Employer's Agent. Excavated material may be stockpiled or used for temporary earth berms in order to control surface storm water or to prevent flooding of the construction site as applicable. However, any and all such temporary earthworks shall be removed, shaped, compacted, and treated etc. as specified and/or instructed by the Employer's Agent on completion of the original Scope of Work.

#### **PSD 5.2.2.6 Excavation limits for payment purposes**

For measurement and payment purposes, the limits of the excavations for structures shall be as shown on the Drawings.

Where no excavation limits are shown on the Drawings and the Employer's Agent has decided that formwork has to be provided for the sides of a concrete member, the limits of the excavation for measurement and payment purposes shall be the vertical planes 0,5 m outside the perimeter of the concrete member for which the formwork is to be provided, and the founding level shown on the Drawings.

#### **PSD 5.2.2.8 Unsuitable material**

Any and all boulders, clay, logs, roots or any other unsuitable material identified during excavation, shall be transported and spoiled. Clause PSD 5.2.2.3 shall apply.

Where, in the opinion of the Employer's Agent, any unsuitable material is encountered at foundation level, such material shall be removed up to a level indicated by the Employer's Agent and shall be replaced with suitable foundation fill or mass concrete as instructed or detailed, in accordance with the requirements of clause PSD 5.2.3.4 of this section.

#### **PSD 5.2.2.9 Preparation of the founding surface**

Where hard material suitable for founding is encountered at the founding level, it shall be cut and trimmed to a firm surface, either level, stepped or serrated, as may be required.

Where there are indications that the material at the founding level will be soft material or hard material that will deteriorate rapidly on exposure, the excavation of the final layer with a thickness of 150 mm shall be postponed until just before the blinding layer is placed.

Where ordered by the Employer's Agent, excavations shall be extended to a specified depth below the given undersides of the slabs and footings to make provision for the placing of a concrete blinding layer.

#### **PSD 5.2.3.3 Backfill and fill near structures**

##### **a) General**

When placing backfill and fill, the following precautions shall be taken:

- i. In so far as it is possible, the material shall be placed simultaneously to approximately the same elevation on both sides of a structure or structural member where appropriate. If conditions require that backfill or fill be placed appreciably higher on one side than on the opposite side, the additional material on the higher side shall not be placed until authorized by the Employer's Agent and preferably not until the concrete has been in place for 14 days, or until tests show that the concrete has attained sufficient strength to withstand any pressure safely that has been created by the backfill or fill or by the method of construction.
- ii. The material behind structural members restrained at the top by the superstructure, e.g. portal-type structures shall be placed as stated on the Drawings or as directed by the Employer's Agent.
- iii. The material behind the walls of concrete culverts shall not be placed until the top slab has been placed and cured, unless otherwise authorized by the Employer's Agent.

##### **b) Backfill**

Excavated areas around structures, between the structure and the vertical walls of the surrounding excavation, shall be backfilled with approved material in horizontal layers not exceeding 150 mm in depth after compaction, to the level of the original ground surface or to the level specified on the Drawings. Each layer shall be moistened or dried to the optimum moisture content for the material and be compacted to a density of not

less than 90 % of modified AASHTO density, except that, in a road prism, the material shall be compacted to a density of not less than 93 % of modified AASHTO density. In cases where structures are founded on backfill material, the density shall be as specified in the Project Specifications but shall not be less than 95 % of modified AASHTO density.

c) Prevention of wedge action

Before the fill in the space between a structure and any adjacent sloping fill and the backfill between a structure and the sloping sides of the surrounding excavation is constructed, the slope of the fill and of the sides of the excavation shall be benched or serrated in order to prevent wedge action between the structure and the fill or the sides of the excavation during backfilling and compaction.

The distance between the exposed face of the structure and the toe of the fill of the excavation side shall be sufficient to allow proper compaction.

#### **PSD 5.2.3.4 Foundation fill**

If, during the course of excavation, it is found that the material at the indicated founding depth does not have the required bearing capacity, the excavations shall be extended at the discretion of the Employer's Agent until satisfactory founding material is encountered. The Employer's Agent reserves to himself the right to order the Contractor to make up the difference in levels with foundation fill.

Foundation fill consisting of granular material shall be constructed in layers not exceeding 150 mm in thickness after compaction. Each layer shall be moistened or dried to optimum moisture content for the material and be compacted to a density of not less than 95 % of modified AASHTO density.

Mass concrete fill to be used shall be of the class or mix specified or directed by the Employer's Agent.

#### **PSD 5.2.5 Transport for Earthworks**

Add the following new sub-clause in 5.2.5:

##### **PSD 5.2.5.1 Freehaul**

Add the following new sub-clause in 5.2.5.1:

A Freehaul distance of 5,5km shall apply.

##### **PSD 5.2.5.3 Special Cases Relating to**

- a) When material is excavated, and stockpiled on the Employer's Agent's instructions before being reloaded and transported to its point of final use, free-haul shall apply twice, firstly from the point of excavation to stockpile and secondly from stockpile to the point of final use

#### **PSD 5.2.6 Dewatering of foundation excavations**

Over and above his general obligations in regard to dealing with water as specified in SANS 1200A, the Contractor shall be responsible for preventing the ingress of water into the foundation excavations. The preventive measures shall include the construction of proper

drainage channels, diversion channels, berms, sumps, and the supply, operation and maintenance of the necessary bailing and pumping equipment.

The dewatering measures, with the exception of pumping, shall be maintained until the backfilling has been completed, after which all settled silt, mud, etc. shall be removed from the exposed surfaces where necessary. Between the various construction stages, pumping may be interrupted as may be decided by the Employer's Agent. The draining or pumping of water from foundation excavations shall be so done that no concrete materials will be carried away. Clause PS 10.8 (Section 7) shall also apply.

## **PSD 7 TESTING**

### **PSD 7.2 TAKING AND TESTING OF SAMPLES**

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

"The Contractor shall arrange with the approved independent laboratory engaged by the Contractor to carry out sufficient tests on a regular basis as agreed between it and the Employer's Agent to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the Specifications and shall submit the results of these tests to the Employer's Agent in a form approved by him.

The compaction requirements for fills shall be deemed complied with when at least 75% of the dry-density tests on any lot show values equal to or above the specified density and when no single value is more than five percentage points below the specified value."

### **PSD 8.3.2 Bulk Excavation**

Add: "Refer to clause PSDB 8.3.2".

### **PSD 8.3.3 Restricted Excavation**

Add: "Refer to clause PSDB 3.1".

## **PS D 8.4 Subsoil Drains under Structures**

### **PS D 8.4.1 Pipes in Subsoil Drains**

- a) Perforated or slotted uPVC pipes complete with couplings (state size) ..... Unit : m
- b) uPVC fitting (state size and type of fitting) ..... Unit : No

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

### **PS D 8.4.2 Crushed Stone In Subsoil Drains ..... Unit : m<sup>3</sup>**

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

**PS D 8.4.3 Geo textile Blanket In Subsoil Drains ..... Unit : m<sup>2</sup>**

The rate shall cover the cost of supplying the geo textile blanket and of placing it in the subsoil drain, as indicated on the drawings.

**PSDB EARTHWORKS (PIPE TRENCHES)**

**PSDB 3 Materials**

**PSDB 3.1 Classes of Excavation**

Replace clause DB 3.1 with the following:

Materials excavated from trenches will be classified as either soft and intermediate or hard material (rock) as follow:

a) Soft and intermediate excavation will be classified as soft excavation, as follow:

All material that can be removed by a back-acting excavator or with picks and shovels in the case of hand excavation.

b) Hard material / rock excavation:

Only material that cannot be removed without the use of explosives for blasting purposes, wedging and splitting or the use of pneumatic drillers. The removal of boulders, Class A and B shall be measured and paid separately from this item. This item shall be extra-over to all excavation.

All blasting must be approved by the Employer's Agent in writing before commencement of such methods.

Restricted Excavations and Excavations for inter-connecting pipelines chambers as well as all excavations to exposing existing services shall be done by hand excavation methods by means of the employment of local labourers reside in the jurisdiction area of the local authority. Once the Contractor is of the opinion that material is too hard to excavate by hand, which shall include the use pneumatic tools, or once excavations exceed a depth of 2,0 m, the Contractor shall inform the Employer's Agent Representative. Only after the Employer's Agent's approval may other methods of excavation are used, which may amongst others include machine excavation or rock blasting as applicable.

Different rates for different excavation methods were allowed for. The rates for machine or hand excavation, where approved, shall be used for measurement and payment and shall not be an extra over item, while only the rate for blasting, the excavation of boulders and excavation by using pneumatic tools shall be measured and paid for as an extra over item to machine or hand excavation.

The Contractor shall obtain his own dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance

### **PSDB 5.6.1 Backfilling**

Pipe joints shall be left open for 300 mm to either side until the pipeline has successfully been tested and approved by the Employer's Agent.

## **PSDB 8 MEASUREMENT AND PAYMENT**

### **PSDB 8.3 SCHEDULED ITEMS**

#### **PSDB 8.3.2 Excavation**

*Add the following:*

No additional payment will in terms of PSDB 3.1 be made for "intermediate excavation".

*The cost of excavation of intermediate excavation shall be included in the rate of excavation in all materials.*



## **PSDM EARTHWORKS (ROADS, SUBGRADE)**

### **PSDM 3 MATERIALS**

#### **PSDM 3.2 CLASSIFICATION FOR PLACING PURPOSES**

##### **PSDM 3.2.3 Selected layer**

*REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:*

"The following requirements shall apply in respect of the selected layer:

- (a) Maximum particle size: 60% of compacted layer thickness
- (b) Unstabilized selected layer
  - (i) Selected layer

Minimum CBR at 93% of modified AASHTO density: 20

Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

## **PSDM 5 CONSTRUCTION**

### **PSDM 5.2 METHODS AND PROCEDURES**

#### **PSDM 5.2.3 Treatment of the road-bed**

##### **PSDM 5.2.3.2 Removal of unsuitable ground**

*REPLACE THE SECOND SENTENCE OF PARAGRAPH (a) WITH THE FOLLOWING:*

"The excavated spaces shall then be backfilled with approved imported material compacted to the required density."

*ADD THE FOLLOWING SENTENCE TO PARAGRAPH (b):*

"Unsuitable excavated material will be paid for as cut to spoil."

##### **PSDM 5.2.3.3 Treatment of road-bed**

*ADD THE FOLLOWING PARAGRAPH:*

"(c) Three-pass roller compaction"

Any portion of the roadbed that is shown on the drawings or is specified or is directed by the Engineer to be given three-pass roller compaction because of its inadequate natural density, shall be prepared by shaping where necessary and compacting with a roller, complying with the requirements specified below.

Compaction shall comprise three passes with complete coverage by the wheels of the specified roller over every portion of the area that is being compacted. While it is not the intention that the Contractor should apply water to the roadbed for this type of compaction, and while no rigid moisture control will be exercised during compaction, the Contractor shall nevertheless satisfy the Engineer that everything is being done to take full advantage of favourable soil moisture conditions during the rainy season, and that such compaction is as far as possible carried out when the roadbed is neither excessively dry nor excessively wet.

The Engineer has the authority to decide when conditions are favourable for compaction and where such compaction is to be carried out at any particular time and he has the right to

instruct the Contractor to water the roadbed at the Contractor's expense when, in the opinion of the Engineer, the Contractor failed, neglected or refused to comply with these requirements.

The rollers to be used for roller-pass compaction shall conform to the following requirements:

Grid roller: The grid roller shall have a mass of not less than 13,5 t when ballasted, shall be loaded to this mass if required, and shall be moved at a speed of not less than 12 km/h.

Vibratory roller: The vibratory roller shall be capable of exerting a combined static and dynamic force of not less than 120 kN/m width for every metre of loose-layer thickness at an operating frequency not exceeding 25 Hz and shall move at a speed not exceeding 4 km/h."

**PSDM 5.2.5 Selected layer**

*REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:*

"Except with regard to density, the requirements of Sub-clause 5.2.4 shall apply. The degree of compaction shall be:

Selected layer : 93% of modified AASHTO density

**PSDM 5.2.8 Transport**

*REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:*

"The provisions of Sub-clause PSD 5.2.5 of SABS 1200 D, as amended, shall apply."

**PSDM 7 TESTING**

**PSDM 7.3 ROUTINE INSPECTION AND TESTING**

*REPLACE TABLE 2 AND THE CONTENTS OF SUBCLAUSE 7.3.2 WITH THE FOLLOWING:*

"**PSDM 7.3.2** The dry density requirements for a particular lot of selected layer or wearing course shall be deemed to be satisfied if the average density and the results of individual tests meet the requirements specified in table 2 below. Refer to Sub-clause PSD 7.2 for the requirements for fill.

Table 2: Densities

1	2	3	4	5
Layer	Specified density (% of modified AASHTO density)	Number of tests per lot	Average density %	Minimum density for any single test, %
Selected layer	93	3 and 4	93,1	89,4
		5	93,4	89,2
		6	93,6	89,0

## **PSDM 8 MEASUREMENT AND PAYMENT**

### **PSDM 8.2 COMPUTATION OF QUANTITIES**

*REPLACE SUBCLAUSES 8.2.1 TO 8.2.3 (INCLUSIVE) WITH THE FOLLOWING:*

**PSDM 8.2.1** The provisions of Sub-clause 8.2.1 of SABS 1200 D shall apply.

**PSDM 8.2.2** The provisions of Sub-clause 8.2.2 of SABS 1200 D shall apply.

**PSDM 8.2.3** The provisions of Sub-clause 8.2.2 of SABS 1200 D shall apply."

#### **PSDM 8.2.5 Verifying quantities**

*REPLACE THE FIRST SENTENCE WITH THE FOLLOWING:*

"Before any earthworks are commenced but after completion of any site preparation, the Engineer will, upon a written request from the Contractor, provide cross-sections for the purpose of measurement of earthworks quantities."

### **PSDM 8.3 SCHEDULED ITEMS**

#### **PSDM 8.3.3 Treatment of roadbed**

(a) Roadbed preparation and compaction of material to

*ADD THE FOLLOWING:*

"The unit of measurement shall be the cubic metre of material re-compacted as specified and the volume shall be determined from levelled cross-sections on which are superimposed the levels to which the roadbed is to be constructed.

When material is imported to make up the required volume, such material will be paid for as cut or borrow to fill as relevant."

#### **PSDM 8.3.4 Cut to fill, borrow to fill**

*REPLACE THE LAST SENTENCE OF THIS ITEM WITH THE FOLLOWING:*

"The unit of measurement shall be the cubic metre of fill and the volume will be calculated in accordance with the authorised dimensions of the embankment and levelled cross-sections.

The bid rates shall include full compensation for excavating the material as if in soft material, for selecting, loading, transporting for the free-haul distance, for off-loading, watering, mixing and compacting the material as specified. Borrow to fill in this item relates to material from designated borrow areas (provided by the Employer).

Where it is required that material be obtained from commercial sources, payment for procuring the material will be made under item PSDM 8.3.17."

#### **PSDM 8.3.5 Selected layer compacted to 93% of modified AASHTO maximum density**

*REPLACE THE HEADING AND THE CONTENTS OF THIS ITEM WITH THE FOLLOWING:*

**"PSDM 8.3.5 Selected layer using material from designated borrow pits or excavations:**

(b) Compacted to 93% of modified AASHTO density ..... Unit: m3

The unit of measurement shall be the cubic metre and the quantity will be calculated from the authorised dimensions of the compacted layer.

The bid rates shall include full compensation for excavating the material as if in soft material for loading, transporting for the free-haul distance, for off-loading, spreading, watering, mixing, breaking down and compacting the layer."

**PSDM 8.3.6 Extra over items 8.3.4 and 8.3.5 for excavating and breaking down material in**

*REPLACE THE HEADING OF THIS ITEM WITH THE FOLLOWING:*

**"PSDM 8.3.6 Extra over items 8.3.4, 8.3.5 and 8.3.16 for excavating and breaking down material in"**

*REPLACE THE WORDS "items 8.3.4 and 8.3.5" WITH THE WORDS "items 8.3.4, 8.3.5 and 8.3.16".*

**PSDM 8.3.7 Cut to spoil or stockpile from**

*REPLACE THE HEADING WITH THE FOLLOWING:*

**"PSDM 8.3.7 Cut to spoil from"**

**PSDM 8.3.12 Overhaul:**

*REPLACE THE CONTENTS OF THIS ITEM WITH THE FOLLOWING:*

"Measurement and payment shall be in accordance with subclause PSD 5.2.5."

*ADD THE FOLLOWING ITEMS:*

**PSDM 8.3.18 Final finishing and cleaning up of the Site of the Works ..... Unit: Sum**

The bid sum shall include full compensation for the clearing, disposal of material, finishing, tidying and all other work required to finish and clean up the Site of the Works and affected areas by removing excess earth, stones, boulders, debris and other waste material, by clearing stormwater inlets and outlets and pipe barrels, by clearing the surfacing of all dirt, mud and foreign material, and by neatly finishing off all junctions, intersections and kerbing.

All material resulting from the finishing operations shall be disposed of to a spoil site furnished by the Contractor.

The bid rate shall make provision for the reinstatement of existing driveways to their original condition where these have been affected by the Works, as these items will not be measured and paid for separately.

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

### **PSG 2.3 Definitions**

#### **PSG 2.3(b) Quality**

Recording of all quality control measures must be done on a daily basis in the Site Diary, information regarding batch number position in structure and date casted, must be specified.

#### **PSG 2.3(c) Strength (sub-clause 2.3(c))**

The required concrete strength will be the strength specified. Cube tests shall be done and no test result less than 95% of specified 28 days' concrete strength will be accepted. The maximum percentage of tests to fall below the specified level may be 5%.

### **PSG 3.2 CEMENT**

#### **PSG 3.2.1 Applicable Specifications**

Portland blast furnace cement and rapid hardening cement shall not be used on the Works.

Portland cement that conforms to SANS 471, with minimum 42.5 MPa strength shall be used for all in-situ cast works.

#### **PSG 3.2.3 Storage of Cement**

Replace this Sub-Clause with the following Sub-Clause:

Cement which is stored on the Site shall be kept under a cover that provides adequate protection against moisture and other factors that may aggravate deterioration.

Where the cement is supplied in bags, the bags shall be closely and neatly stacked to a height not exceeding 12 bags, and they shall be so arranged that they can be used in the order in which they were delivered to the Site. Different brands and/or types of the same brand shall be stored separately.

The storage of cement in bulk in silos or similar containers shall be permitted, provided that the cement drawn for use is measured by mass and not by volume.

Cement shall not be kept in storage for longer than 6 weeks from the date of manufacture without the Employer's Agent's permission. The Employer's Agent may order the removal of cement, which is older than 6 weeks, from the Site or the alteration of the design mix if he does allow its use.

Alternatively, he may allow the cement to be used in concrete of less critical importance, as in blinding layers.

### **PSG 3.5 ADMIXTURES**

#### **PSG 3.5.1 Approval of Admixtures Required**

Add the following paragraph to this Sub-Clause:

- e) Admixtures shall comply with the requirements of ASTM C-154 or AASHTO M-154 and shall be of an approved brand or type.

#### **PSG 3.5.2 Air-Entraining Agents**

Add the following paragraph to this Sub-Clause:

- e) Air-entraining agents shall comply with the requirements of ASTM C-260 or AASHTO M-194.

## **PSG 4 PLANT**

### **PSG 4.5 Shuttering**

#### **PSG 4.5.1 Design**

The shuttering must be designed and supplied by an approved supplier, in order to construct the new circular, cylindrical and conical infrastructure easily and correctly, within specified tolerances. Concrete must be easily poured into and compacted in the erected shuttering, and must be tied and supported well, in order to be able to resist the dead weight of the wet concrete and shuttering as well as the effects of wind force. Shuttering may only be removed after approval of the Employer's Agent.

#### **PSG 4.5.2 Finish**

Add the following to this Sub-Clause:

All external corners shall be chamfered by the fixing of fillet strips into the corners of the formwork to form 25 mm x 25 mm chamfers, all at no extra payment.

#### **PSG 4.5.3 Ties**

Add the following to this Sub-Clause:

Only patented ties shall be used on water-retaining structures. These ties shall be approved by the Employer's Agent. Tie holes shall be filled with an approved non-shrink epoxy grout.

## **PSG 5 CONSTRUCTION**

### **PSG 5.1.3 Cover**

Add the following to this Sub-Clause:

Unless otherwise shown on the drawings, minimum cover to reinforcement shall be as for "severe" conditions (minimum cover shall not be less than 40mm).

#### **PSG 5.2.1 Classification of Finishes**

Add the following Sub-Clause 5.2.1 (C) Special

Imperfections such as small fins, bulges, irregularities, surface honeycombing, and slight surface discolorations shall be made good and repaired by approved methods including rubbing down or grinding to the complete satisfaction of the Employer's Agent.

The finish of the concrete shall be accurate to Degree of Accuracy as defined in terms of Clause 6 (see also 5.5.10.3).

#### **PSG 5.2.2 Preparation of Formwork**

Add the following to this Sub-Clause:

The joints between continuous formwork elements shall be closely butted and, where necessary, if undue leakage is expected, the joints shall be caulked, taped or packed with a sealing gasket, all at no extra payment. Paper, cloth or similar materials shall not be used for this purpose.

## **PSG 5.5 Concrete**

### **PSG 5.5.1.2 Consistency**

Add the following under Sub-Clause 5.5.1.2(a):

The slump for concrete to be used in water retaining structures shall not be less than 30 mm and not more than 60 mm.

### **PSG 5.5.1.3 Workability**

Add the following to this Sub-Clause:

The concrete mix to be used in water retaining structures shall have a water/cement ratio not exceeding 0,5.

### **PSG 5.5.1.5 Durability**

Add the following to this Sub-Clause:

All water retaining structures shall be deemed to be exposed to severe conditions. The water/cement ratio shall be determined by the strength of concrete specified but shall not exceed 0,5, in order to ensure workability, water reducing admixtures of approved manufactures shall be used in preference to increasing the cement content.

### **PSG 5.5.1.7 Strength concrete**

Add the following to this Sub-Clause:

Unless specified differently the grade of concrete to be used shall be as follows:

- i. Grade 30/19: All reinforced concrete structures;
- ii. Grade 20/20: All paving slabs and floor slabs;
- iii. Grade 15/20: Unreinforced foundations and Pipe encasement;
- iv. Grade 20/40: Mass concrete and concrete filling
- v. Grade 15/10: Screeds and benching

### **PSG 5.5.10 Concrete Surfaces**

The Contractor shall rub down the exposed surfaces of the area indicated by the employer's agent/representative. The surface shall be saturated with water for at least one hour. Initial rubbing shall be carried out with a cement bag or medium-coarse carborundum stone, with a small amount of mortar being used on the face. Rubbing shall be continued until all form marks, projections and irregularities have been removed and a uniform surface has been obtained. The paste produced by the rubbing shall be left in place. The final rubbing shall be carried out with a fine carborundum stone and water. This rubbing shall continue until the entire surface is of a smooth, even texture and is uniform in colour. The surface shall then be washed with a brush to remove surplus paste and powder.

#### **PSG 5.5.10.4 Wood-floated finish**

Where wood floating is specified or scheduled, the surface shall first be given a finish as specified in G 5.5.10.1 and after the concrete has hardened sufficiently, it shall be floated to uniform surface free from trowel marks. The screeded surface shall be wood-floated,

either by hand or machine, only sufficiently to produce a uniform surface from screed marks.

**PSG 5.5.10.5 Steel-floated finish**

Where steel floating is specified or scheduled, the surface shall be treated as specified in PSG 5.5.10.4 except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screeded surface shall be steel-trowelled under the firm pressure to produce a dense, smooth, uniform surface free from trowel marks.

**PSG 5.5.11 Watertight Concrete**

Add the following to this Sub-Clause:

All structures shall be deemed to be water retaining unless otherwise specified.

**PSG 5.5.13 Grouting**

Add the following to this Sub-Clause:

**PSG 5.5.13.1 Materials**

- a) Water. Water for grout shall comply with the requirements given in Sub-Clause 3.3 of SANS 1200 G.
- b) Aggregates. Notwithstanding the requirements of Sub-Clause 3.4.1 of SANS 1200 G, the grading of fine aggregate (sand) and coarse aggregate (stone or pea gravel) shall conform to the grading given in Tables 1 and 2, respectively, below.
- c) Cement. Cement shall be ordinary Portland cement complying with SANS 471.
- d) Admixtures. Admixtures shall comply with the requirements of Sub-Clause 3.5 of SANS 1200 G and shall have a proven record of satisfactory performance under conditions encountered in the Republic of South Africa.
- e) Proprietary grouting materials. Unless otherwise approved by the Employer's Agent, proprietary grouting materials shall be obtained ready mixed in sealed pockets as supplied by the manufacturers.

TABLE 1 - SAND		TABLE 2 - STONE OR PEA GRAVEL	
1	2	1	2
Test sieve nominal aperture size, mm	% Passing (by mass)	Test sieve nominal aperture size, mm	% Passing (by mass)
9,75	100	9,5	100
4,75	95 - 100	4,74	95 - 100
1,18	45 - 65	2,36	0 - 5
0,3 (300 µm)	5 - 15		
0,15(150 µm)	0 - 5		



### **PSG 5.5.13.2 Preparation and Procedures**

- a) Before a machine or structural bedplate is placed on the concrete the following steps shall be carried out:
  - 1) All defective concrete, laitance, dirt, oil, grease, and loose material shall be removed from the concrete foundation by bush-hammering, chipping, or other means until sound clean concrete is obtained. The surface of the foundation shall be scabbled, but shall not be so rough as to interfere with proper placing of the grout. All foundation bolt sleeves shall be cut out, or cut off flush if the sleeves cannot be removed. The top of the foundation shall be re-shaped if necessary.
  - 2) The underside of each steel base, particularly in the bearing areas, shall be cleaned and any burrs and ragged edges removed before the base is placed in its final location.
  - 3) All holding-down bolt sleeves shall be thoroughly cleaned of any materials that may prevent the grout from flowing freely to the bottom of the bolt sockets.
- b) The base shall be properly aligned and levelled and shall be maintained in that position during grouting.
- c) After the machine or structural bedplate has been placed the following precautions shall be observed:
  - Shimming shall be kept to a minimum. Steel plates shall be used for packing and shall be ground to the required thickness, where necessary.
  - Before grouting starts all loose dirt, oil, grease, and other foreign matter on the surface of the foundation, the undersides of bedplates, and in the bolt holes shall be removed by means of compressed air or other approved measures. The surface of the foundation slab shall be thoroughly saturated with clean water, and all excess water shall be removed from the surface and the bolt holes just before the grout is placed.
  - Grouting shall not be carried out until the alignment of all units to be grouted has been checked and approved by the Employer's Agent.
  - Special care shall be taken with grouting in hot or cold weather to ensure proper setting and gain of strength and, in the case of proprietary grouting materials, by having ice or hot water available, as the case may be, in accordance with the instructions of the manufacturer. Enclosures shall be provided for the grout such that, until it has set, its temperature will be in the range 15-27°C.
  - Shields to protect the grout from the sun and from hot winds shall be provided by the Contractor when so ordered.

### **PSG 5.5.13.3 Formwork**

Formwork for grouting shall comply with the applicable requirements of Sub-Clause 5.2 of SANS 1200 G. Forms shall be caulked where necessary. Adequate clearance between forms and bedplates shall be provided to enable the grout to be worked into place.

**PSG 5.5.13.4 Mixing (all free-flowing grouts except epoxy grouts).**

The grout shall be mixed to a homogeneous uniform mixture and delivered ready for placing at a temperature between 15°C and 25°C.

Substantial materials and water shall be mixed in a mortar mixer for at least 3 min. For the converse, mixing thoroughly by hand will suffice for smaller tasks, nonetheless the entire mass shall be turned over enough times to ensure even distribution of its components.

Mixing shall be done as close as possible to the place where the grout will be placed. No surplus grout shall be mixed at any one time than that which can be placed in a period of 20 min.

After the grout has been mixed it shall not be re-tempered by the addition of water.

**PSG 5.5.13.5 Grouting (all free-flowing grouts except epoxy grouts).**

The grout shall be placed quickly and continuously to avoid the undesirable effects of over-working. (These effects are segregation, bleeding, and breaking-down of initial set). The method of placement shall be subject to approval. The means of placing the grout shall be such that the grout will completely fill the space to be grouted, will be thoroughly compacted, will be free of air pockets, and will have evenly distributed contact over an area in excess of 80% or, in the case of expanding grout, 95% of the bearing area of the item to be supported.

Wherever practical grout shall be placed from one side only and where this is not achievable, care shall be taken to ensure that any entrapped air is released.

After the grout has taken its initial set:

- a) the forms shall be removed;
- b) excess grout shall be so cut away as to leave a smooth and neatly finished job;
- c) except where the grout is intended to provide resistance to side thrust, all edges shall be trimmed at 45° to the vertical, from the bottom edge of the bedplate; and
- d) all excess grout on or about the bedplates shall be removed.

Damage to paintwork, if any, shall be repaired within 24 hours. Packing plates, shims, and other levelling devices shall remain in position.

**PSG 5.5.13.6 Dry-packed grout (standard dry sand and cement grout).**

Dry-packed grout shall have a minimum compressive strength at 28 days of 25 MPa. The quantity of water added after placing shall be kept to a minimum consistent with placing conditions, and the cement, sand and, where applicable, pea gravel proportions by mass shall be as follows:

- a) Where the clearance between bedplate and foundation is 25 mm or less: 1 part of portland cement and 2 parts of sand;
- b) where the clearance exceeds 25 mm: 1 part of portland cement, 1 part of sand, and 1 part of pea gravel.

Dry-packed grout shall be rammed by means of tamping rods against formwork placed along three sides of the bedplate.

**PSG 5.5.13.7 Non-shrink grout with metallic aggregate.**

The manufacturer's instructions shall be observed when non-shrink grout with metallic aggregate is used. Where the clearance between the bedplate and the foundation is less than 50 mm a sand-based mix shall be used. Where the clearance exceeds 50 mm the Employer's Agent may order a mix with a base of sand plus pea gravel to be used.

**PSG 5.5.13.8 Expanding grout with powdered aluminium additive.**

The manufacturer's instructions shall be observed when an expanding grout with powdered aluminium additive is used. Where the clearance between the bedplate and the foundation is less than 25 mm, a sand-based mix shall be used. Where the clearance exceeds 25 mm the Employer's Agent may order mix with a base of sand plus pea gravel to be used.

Each batch shall be mixed for at least 6 min. after the powdered aluminium has been added. Where a ready-mixed grout is used, the powdered aluminium shall be added at the placing site and the batch mixed as specified in PSG 9.4. Grout shall be placed within 45 minutes after the addition of the powdered aluminium.

The Contractor shall not use powdered aluminium additive when the ambient temperature is below 5°C.

**PSG 5.5.13.9 Epoxy grout (epoxy mortar type only).**

The manufacturer's instructions shall be observed when an epoxy grout is used.

**PSG 5.5.13.10 Testing (Clause 7)**

The Contractor shall, where so ordered, carry out a site test for each grouting procedure and each grouting gang to be used. 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 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 Employer's Agent.

The Contractor shall, when so ordered, make standard test cubes from various grout mixtures and subject them to compression tests to determine whether the specified strength has been achieved. Test procedures shall comply with the relevant requirements of Sub-Clause 7.2.1 to 7.2.3(f) SANS 1200 G.

## **PSG 5.5.16 NO-FINES CONCRETE**

### **PSG 5.5.16.1 Materials**

Cement, aggregate and water shall comply with the requirements of Clause 3 of this section. Each size of aggregate shall be a single-sized aggregate graded in accordance with SANS 1083.

### **PSG 5.5.16.2 Classes of no-fines concrete**

No fines concrete shall be classified by the prefix NF and the size of the aggregate to be used. Class NF 20 means a no-fines concrete with a 19mm nominal size aggregate.

The volume of aggregate per 50 kg of cement for each class of no-fines concrete shall be as follows:

<b>Class</b>	<b>Aggregate per 50 kg cement</b>
NF 40	0,33 m <sup>3</sup>
NF 20	0,30 m <sup>3</sup>
NF 10	0,27 m <sup>3</sup>

### **PSG 5.5.16.3 Batching and mixing**

Cement shall be measured by mass or full bags of 50kg each and aggregate shall be measured by volume in approved measuring boxes or barrows.

The quantity of water added shall be just sufficient to form a smooth grout that will adhere to and completely coat each and every particle of aggregate and to be just wet enough to ensure that, at points of contact of the aggregate, the grout will run together to form a small fillet to bond the aggregate together. The mix shall contain no more than 20l of water per 50 kg of cement.

Mixing shall be carried out in an approved batch-type mechanical mixer, but small quantities may be hand mixed.

### **PSG 5.5.16.4 Placing**

No-fines concrete shall be placed in accordance with the procedure agreed on by the Employer's Agent. It shall be placed in its final position within 30 minutes of mixing.

The no-fines concrete shall be worked sufficiently to ensure that it completely fills the space to be concreted and that adjacent aggregate particles are in contact with one another. Excessive tamping or ramming shall be avoided and under no circumstances may the no-fines concrete be vibrated.

### **PSG 5.5.16.5 Protection**

All no-fines concrete shall be protected from the elements and loss of moisture. Protection against loss of moisture shall be accomplished in one or more of the following ways:

- a) Retaining formwork in place;

- b) Covering exposed surfaces with sacking or other approved material kept continuously wet; and
- c) Covering exposed surfaces with plastic sheeting.

No-fines concrete placed during cold weather shall be adequately protected against frost for at least 3 days.

### **PSG 5.5.17 Joints in structures**

#### **PSG 5.5.17.1 Materials**

##### a) General

All materials used in the forming, construction and sealing of permanent joints, as well as all proprietary or custom-built expansion-joint assemblies shall be subject to the approval of the Employer's Agent.

When required by the Employer's Agent, the Contractor shall submit test certificates from an approved independent testing authority to show that the respective materials comply with the specified requirements, or a certificate from the patent holder or designer to certify that the manufactured item complies in all respects with relevant product specifications.

##### b) Joint filler

- i. Committee of Land Transport Officials "Standard Specification for Roads and Bridge Works for State Authorities". Section 6603(ii).
- ii. Department of Public Works PW471 "Specification of Materials and Methods to be used" Section 3.13 Expansion Joints.

Joint fillers shall consist of closed cell expanded polyethylene with a density of not less than 100 kg/m<sup>3</sup>.

##### c) Sealants

Joint sealers shall consist of a two components polyurethane sealing compound complying with the requirements of SANS 1077.

Other sealants may be used if approved by the Employer's Agent after submission of full specifications and information by the Contractor at tender stage.

##### d) Water stops

Water stops shall be of natural rubber, or plasticized, virgin, non-biodegradable PVC, and of the type specified or shown on the Drawings.

- i. Natural rubber water stops shall comply with the requirements of CKS 388.
- ii. Flexible polyvinyl chloride (PVC) rubber water stops shall comply with the requirements of CKS 389.

##### e) Accessory materials

##### i. Primers

When a primer is to be used in conjunction with the sealant, it shall be of the prescribed proprietary material.

ii. Adhesives

Adhesives used in conjunction with preformed seals shall be of a proven and approved type which is compatible with the material of the seal.

iii. Bond breakers

Polyethylene tape, coated papers, metal foils or similar material may be used where bond breakers are required.

iv. Back-up material

Back-up material shall consist of a compressible material of correct width and shape in order to ensure that it will be in approximately 50% compression after installation and that the sealant can be formed to the specified depth.

Back-up materials shall be compatible with the sealant used. Material containing bitumen or volatiles shall not be used with thermosetting chemically curing sealants.

f) Storage

All materials used in the forming, construction and sealing of permanent joints and all proprietary or custom-built expansion-joint assemblies shall be stored off the ground under cover that provides adequate protection against sunlight, physical or chemical damage or other factors that may cause deterioration.

**PSG 5.5.17.2 Filled Joints**

Filled joints shall be accurately formed to the dimensions shown and with the filler material specified on the Drawings. The filler shall be secured in position so that it will not be displaced during or after concreting if the filler is to remain permanently in the joint.

Wherever polystyrene or a similar material which is susceptible to damage is used to form joints, it shall be lined with a hard surface on the side to be concreted. The hard surface shall be sufficiently resilient to ensure that the joint and surfaces can be formed free from defects.

**PSG 5.5.17.3 Sealing of Joints**

a) General

Sealed joints shall be made watertight over the full length of the joints, unless otherwise permitted by the Employer's Agent, and the joint dimensions shall be as shown on the Drawings.

b) Preparation of joints

The reaming of joints by sawing or other means shall be undertaken when edge spalling or raveling can be avoided and shall be subject to the Employer's Agent's approval. After removal of the temporary filler material or the breaking-out of the excess concrete, the inside faces of the joint shall be wire-brushed or grit-blasted to remove all laitance and contaminants. Thereafter the joint shall be cleaned and blown out with compressed air to remove all traces of dust. Solvents shall not be used for removing contaminants from concrete and porous surfaces.

Care shall be taken to ensure that primers or adhesives are applied only to surfaces that are absolutely dry. The primer or adhesive shall be applied strictly in accordance with the manufacturer's instructions. Unless otherwise specified, the primer shall be applied within the temperature range of 10°C to 40°C and the sealant shall be applied after the curing period of the primer and within the period during which the primer remains active.

c) Sealants

Sealants shall be applied strictly in accordance with the manufacturer's instructions

by a person skilled in the use of the particular type of sealant. The trapping of air and the formation of voids in the sealant shall be avoided. The sealant shall be finished to a neat appearance flush with the edges of the concrete or to the specified depth.

Thermoplastic hot-poured sealants shall not be poured into the joints when the temperature of the joint is below 10°C. The safe heating temperature shall not exceed the specified pouring temperature by more than 10°C.

Two-part thermosetting chemically curing sealants shall not be applied after expiry of the specified pot life period, which shall commence once the base and activator of the sealant have been combined.

d) **Preformed compression seals**

The seal shall be inserted and secured with a lubricant adhesive which covers both sides of the seal over the full area in contact with the inside faces of the joint. The lubricant adhesive shall be applied immediately before the seal is inserted.

The seal shall be installed in a compressed state, with the appropriate equipment, so that the seal will remain in compression even under the most adverse conditions. The final position of the seal shall be as shown on the Drawings or as directed by the Employer's Agent.

Joints in seals shall be bonded or fused and shall be only at positions agreed on by the Employer's Agent.

e) **Waterstops**

i. General requirements

The waterstops shall be supplied in unjointed standard production lengths. Site jointing shall be limited to the absolute minimum. Where lengths in excess of the standard production lengths are required, such longer lengths shall preferably be factory jointed.

At intersections, transitions and abrupt changes of direction, factory-moulded watertight junction pieces shall be used so that any site jointing can be restricted to simple joints. When a waterstop with a centre bulb is intersected, the centre bulb shall be continuous throughout the intersection irrespective of the make-up of the intersection.

ii. Rubber waterstops

All joints shall be vulcanized and shall have a tensile strength of at least eighty (80) per cent of that of the unjointed material for water-retaining structures, and fifty (50) per cent for other structures.

Site joints shall be vulcanized joints made in accordance with the requirements of these Specifications and the manufacturer's instructions, and with equipment prescribed or supplied by the manufacturer and approved by the Employer's Agent.

The vulcanizing process shall be a hot process with strict control on the pressure, the temperature and the time. The vulcanizing temperature shall be between 150°C and 160°C. The rubber shall not be heated above 160°C.

The vulcanizing time for the specific type of rubber of the waterstops involved shall be determined with a curometer for the abovementioned vulcanizing temperatures before a vulcanized joint is made. The recommended pressure between the two sections which



must be vulcanized is 3,4 MPa and the minimum allowable pressure is 2,4 MPa.

The contact faces of the sections to be jointed shall be accurately and evenly cut at the angle shown on the Drawings or prescribed by the Employer's Agent to obtain a precise fit and complete contact.

Care shall be taken to keep centre bulbs unobstructed at the joints so that the lateral flexibility of the waterstops will not be affected by the presence of clotted rubber inside the bulbs.

The rubber of the waterstop shall not have any porosity of voids between the contact faces of the sections and/or at the finished vulcanized joint, especially at the centre bulb.

The vulcanizing equipment shall comply with the following minimum requirements:

The heating elements shall be equipped with an automatic temperature-control device to keep the elements at the required temperature.

It shall be equipped with an automatic temperature-control device to keep the heating elements at the required temperature, with a device to measure the temperature at the vulcanizing plane, a device to measure the temperature applied to the external faces of the rubber, and with a pressure gauge to regulate the applied pressure within the specified limits in relation to the liquidity of the rubber.

During the vulcanizing process, the pressure shall be spread evenly over the entire contact area and the pressure plates shall be sufficiently rigid that they will not bend under the applied pressure. The cut-out forms of the pressure plates shall fit accurately over the waterstops so that all the faces of the waterstops will be in contact with the pressure plates.

The planes of contact of the two sections of the waterstops to be joined together shall be prevented from sliding from each other when pressure is applied to the plates.

A shield shall be available to shield the apparatus against wind, rain, etc. when joints are made in the open to ensure proper temperature control.

The apparatus as a whole shall be safe in all respects and shall comply with all the appropriate statutory requirements.

iii. Plasticized, flexible PVC waterstops

The waterstops shall be manufactured from high-quality virgin material and shall not contain any scrap or reclaimed material. The waterstops shall be light colored so as to reduce heat absorption when exposed to sunlight.

The waterstops shall be precision moulded or extruded to the required cross-sectional profile, they shall be free from porosity or other imperfections, and shall be provided with eyelets so that they can be securely fixed to prevent displacement during concreting.

All joints shall be butt-jointed hot-welded joints. Where joints cannot be factory made, Site joints shall be made in accordance with the manufacturer's instructions with equipment prescribed or supplied by the manufacturer and approved by the Employer's Agent.

#### **PSG 5.5.17.4 Installation of Expansion joints**

No expansion joint or part thereof shall be installed before the final surfacing levels have been established as based on a complete level survey of the contiguous surfaces. The survey shall be made before the kerbs; channels or bituminous surfacing is constructed.

#### **PSG 5.5.18 Building in of Pipes**

The Contractor under this Contract shall be responsible for building-in or caulking and making watertight around all pipes and fittings which pass through walls or under floors of the structures, irrespective of whether the Contractor himself supplies and installs the pipes and fittings, or the Employer purchases the pipes and fittings and the Contractor under this Contract takes delivery and installs them, or some other contractor (e.g. a plant supplier) supplies and installs the pipes and fittings in recesses or through holes left in the various structures for the reception of such pipes and fittings.

Where pipes or specials are required to pass through or be set into concrete work holes shall be left in the concrete.

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

- a) cut the reinforcement to allow the pipe to be installed;
- b) remove all shuttering and boxing remaining in the holes;
- c) make any alterations required to the position and shape of the holes;
- d) thoroughly clean the sides of the holes so as to obtain a satisfactory bond surface for the new concrete; and
- e) free all surfaces of the pipes/specials of all coatings, and thoroughly scrape and clean the pipes/specials.

After accurately positioning the pipes/specials in their respective holes, the Contractor shall fix the pipes/specials in the holes.

Immediately before grouting is carried out by 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 consisting of 3 parts of concrete sand and 1 part of cement.

The concrete ingredients shall be mixed and placed as dry as possible to obtain a dense, waterproof concrete. Where a watertight seal is required, 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 any falling away from pipe/special surfaces of the concrete already placed. The whole shall, when set, form a dense, homogeneous, and waterproof mass. A spare vibrator with an independent power source shall be kept in readiness to ensure continuity of placing in the event of the breakdown of the duty vibrator.

Smooth formwork that has been suitably strengthened for use with a vibrator shall be provided for facing the concrete around each pipe/special. Alternatively, pipes may be cast into the wall in which case the pipes shall be installed in the required position with the formwork fixed around them and the concrete worked thoroughly into contact.

#### **PSG 5.5.19 Foundations for Mechanical Equipment**

The mechanical contractors shall supply the holding down bolts for all mechanical equipment, together with all dimensions and other details necessary for the construction of the pedestals and holding down bolt pockets, or the fixing of the bolts. The Contractor shall either form pockets for the holding down bolts to be installed at a later stage or he shall position the bolts before the concrete is cast as ordered by the Employer's Agent. The mechanical contractor shall fix, align and level the mechanical equipment after which the Contractor shall grout up the units solidly by filling the voids inside and under the base plates as ordered with an approved non-shrink grout.

#### **PSG 5.5.20 Waterproofing of water retaining structure**

Water retaining structures shall be made waterproof by applying a sealant to the internal walls of the structure. The proposed sealant shall be an elastomeric, cement-based waterproofing coating for concrete and masonry.

Surface preparation, application, coverage should be strictly to the supplier's specification by an installed/applied by an accredited and approved

installer/applicator. The sealant shall be either BASF MasterSeal 599, ABE Duraflex or similar approved. Typically, two coats are required.

### **PSG 6.3 CONCRETE ELEMENTS**

Concrete elements shall be constructed and finished to the following tolerances:

- 1) surface irregularities: 5 mm
- 2) cross section dimensions:  $\pm 5$  mm
- 3) level:  $\pm 5$  mm
- 4) top of walls: 3 mm

### **PSG 6.6 FLOOR SURFACES**

The flat floor slabs in the reservoir shall be constructed and finished to the tolerances as specified under PSG 6.3 above.

### **PSG 8 MEASUREMENT AND PAYMENT**

#### **PSG 8.1.1 Formwork**

##### **PSG 8.1.1.6 Add the following to this Sub-Clause:**

The unit rate shall also cover the cost of ties and patented ties as specified in Clause PSG 4.5.3.

#### **PSG 8.5 JOINTS**

*Delete this pay item and add the following pay item:*

##### **PSG 8.5.1 CONSTRUCTION JOINTS**

**Forming construction joint**

**Unit: linear metre (m)**

(Width of joint to be stated)

The unit of measurement shall be the square metre net area of one face of the concrete that constitutes the joint.

The tendered rate shall cover the cost of all materials and labour for the construction of the joint, including the cost of formwork, surface roughening and cleaning, testing and making good.

##### **PSG 8.5.2 FILLED JOINTS**

Forming filled expansion joint

Unit: square metre (m<sup>2</sup>)

(Thickness and width of joint to be stated)

Material of joint filler to be stated)

The unit of measurement shall be the square metre net area of one face of the concrete that constitutes the joint.

The tendered rate shall cover the cost of all materials and labour for the construction of the joint, including formwork, supply and installation of joint filler as specified, testing and making good.

### **PSG 8.5.3 SEALED JOINTS**

Sealing of joints Unit: linear metre (m)

(Size of finished seal to be stated

Material of joint sealer to be stated)

The unit of measurement shall be the linear metre net length of the position where the sealant is applied.

The tendered rate shall cover cost of supplying, preparing and application of the joint sealer as specified including testing and making good. Items PSG 8.5.1 or 2 will cover other costs related to the joint as the case may be.

### **PSG 8.5.4 JOINTS WITH WATERSTOP**

Separate items will be scheduled for:

(a) Waterstops in a straight line Unit: linear metre (m)

(b) Waterstops on a curve Unit: linear metre (m)

(c) Extra-over items (a) and (b) above for factory-moulded intersection pieces (described) Unit: Number (No)

Full description of waterstop with the relevant dimensions to be stated.

The unit of measurement shall be the linear metre net length of waterstop installed, measured along its central bulb.

The tendered rate shall cover the cost of supplying and installation of the waterstop. Items PSG 8.5.1; 2 and/or 3 will cover other costs related to the joint as the case may be. Regarding the intersection pieces, the rate shall also include the joining of the intersection piece on site with straight or curved water stops.

### **PSG 8.5.9 BUILDING IN PIPES INTO CONCRETE OR MASONRY AND/OR GROUTING PIPES**

**Unit: number (No.)**

The rate shall cover the cost of forming the opening for the pipe, scabbling, cleaning and preparing the concrete surface, providing an approved non-shrink epoxy grout, placing and ramming of it solidly into all voids, formwork and finishing to a smooth watertight surface.

### **PSG 8.10 WATERPROOFING OF TANK INSIDE**

**Unit: square metre (m<sup>2</sup>)**

The rate shall cover the cost of all material, equipment and labour necessary to waterproof the structure as described in PS G 5.5.20. The quantity shall be measured in square meter and paid out in terms of total area waterproofed/sealed irrespective of the number of coatings applied/required to waterproof the structure.

**PSG 8.11 JOINTS NEW CONCRETE TO EXISTING**

a. Scabbling of existing surface.....Unit: m<sup>2</sup>

The rate for a) shall cover the cost of scabbling the existing surface, as well as the cost of supplying and applying the epoxy bonding compound or joint as per drawing detail.

**PSG 8.12 REPAIR CONCRETE SURFACE USING GROUT WHERE INDICATED BY EMPLOYERS AGENT/REPRESENTATIVE**

**Unit: square metre (m<sup>2</sup>)**

The rate shall cover the cost of all material, equipment and labour necessary to repair the concrete structure surface where indicated by the employer's agent/representative as described in 5.5.13 and PS G 5.5.13.5. The quantity shall be measured in square meter and be paid out in terms of total area repaired irrespective of the quantity of grout applied/required to repair the surface.

**PSG 8.13 CEMENT BAG WASH/FINISH ON EXISTING CONCRETE SURFACE WHERE INDICATED BY EMPLOYERS AGENT/REPRESENTATIVE**

**Unit: square metre (m<sup>2</sup>)**

The rate shall cover the cost of all material, equipment and labour necessary to wash or finish the concrete surface where indicated by the employer's agent/representative as described in PS G 5.5.10. The quantity shall be measured in square meter and be paid out in terms of total area washed.

**PS G 8.14 Test Structure for Watertightness ..... Unit : Sum**

The rate shall cover the cost of all equipment and labour necessary to test the structure for watertightness as described in PS G 7.3.6, including the supply of water and filling such structure.

No additional payment will be made for re-testing the structure for watertightness after the repair of leaks.

**PSG 8.15 Cleansing and Disinfecting .....Unit : Sum**

The unit of measurement for disinfecting shall be the lump sum.

The tendered rate shall include full compensation for all labour, plant and materials necessary for disinfecting as specified to the satisfaction of the Employer's Agent.

**PS G 8.16 Building Pipes into Concrete Work and/or Grouting Pipes Installed by the Mechanical Contractor ..... Unit : No**

The rate shall cover the cost of forming the opening for the pipe, scabbling, cleaning and preparing the concrete surface, providing an approved non-shrink epoxy grout,

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placing and ramming of it solidly into all voids, formwork and finishing to a smooth watertight surface.



## **PSHA STRUCTURAL STEELWORK (sundry items)**

### **PSHA 2 INTERPRETATION**

#### **PSHA 2.1 Supporting Specifications**

c) SANS 1200 H

### **PSHA 3 MATERIALS**

#### **PSHA 3.1 STRUCTURAL STEEL**

Replace the reference to BS 4360 with SANS 1431.

The grade of steel shall be S355JR (350W).

#### **PSHA 3.3 BOLTS, NUTS AND WASHERS**

##### **PSHA 3.3.1 Bolts and Nuts (Other than Friction Grip)**

Add the following to this Sub-Clause:

All bolts and nuts shall be of grade 4,6 steel. Washers shall be provided at each nut and shall be of the same material (or coating where applicable) to match the bolt and nut. Single coil square section spring washers shall be fitted to all nuts subject to vibration. Bolts other than jacking bolts shall project not less than 3 mm and not more than 10 mm from the heads of the nuts after tightening.

Holding down bolts to be built into concrete work as well as bolts to be installed above ground level directly above and under water shall all be of stainless steel grade 304. Bolts for flexible couplings and flanges for underground installation shall be hot-dip galvanized in accordance with the requirements of SANS 763. Bolts to be installed inside buildings shall be hot-dip galvanized in accordance with the requirements of SANS 763 and afterwards painted with the pipework and fittings as specified in the Standardized Corrosion and Painting Specification for Civil Engineering Works.

Suitable plastic sleeves and/or washers shall be used for protection against corrosion by metallic action.

#### **PSHA 3.4 PAINTS AND PROTECTIVE COATINGS**

Delete this Sub-Clause and refer to the Standardized Corrosion and Painting Specification in particular specifications PQ.

**PS HA 5 CONSTRUCTION**

**PS HA 5.2 FABRICATION AND ASSEMBLY**

**PS HA 5.2.6 Handrails**

*SUBSTITUTE THE FIRST SENTENCE OF HA 5.2.6 WITH THE FOLLOWING:*

Handrails shall be of the tube and sphere type similar to Monoweld and shall be manufactured by an approved firm specialising in such works from grade 304 L stainless steel or hot dipped galvanized (heavy duty coating), as scheduled or shown on the drawings.

Handrails shall be 1 000 mm high and shall consist of a handrail and a knee-rail, both manufactured of steel tubing of nominal thickness 2,6 mm and of nominal outside diameter of at least 34 mm.

Stanchions shall be manufactured pre-formed in one piece and shall be of steel tubing of nominal thickness of 2,6 mm and of nominal outside diameter of at least 42 mm. The bases of the stanchions shall be manufactured of 150 mm x 75 mm x 12,5 mm flat bars and shall be pre-formed to suit the situation in which they are to be installed (i.e. for platform- or side-mounting, and for horizontal- or sloped-mounting on concrete or steel), and the stanchion spheres shall be pre-formed to suit right angled or other angled intersections), all as shown on the drawings.

Stanchions shall be spaced at intervals not exceeding 1,5 m and shall be fixed with two M16 bolts, washers and nuts each. All joints shall be welded.

Materials shall be as shown on the drawings or as scheduled.

**PS HA 5.2.7 Ladders**

*ADD THE FOLLOWING TO HA 5.2.7:*

Materials shall be as shown on the drawings or as per the following specification if not specified.

Ladders shall be of all welded construction. Materials used shall be as stated on the drawings and shall be manufactured in grade 304 stainless steel or hot dipped galvanized (heavy coating). Stainless steel shall be finished with a No. 1 surface finish. Pickling and passivation shall be carried out in accordance with the requirements of the Standardized Corrosion and Painting Specification for Civil Engineering Works.

Vertical ladders shall comprise stringers at 600 mm centres made of 32 mm nominal bore pipes with 3,56 mm wall thickness and rungs spaced at 300 mm centres made of 16 mm diameter solid round bars. The stringers shall be drilled on one side only to provide a sliding fit for the ends of the rungs which shall protrude through these holes up to the opposite inside face of the stringer and be welded all around where they enter the holes in the stringers.

Lugs for bolting ladders to walls shall consist of 20 mm nominal bore pipes with 2,87 mm wall thickness. Baseplates for stringers and lugs shall be 150 x 60 x 10 mm drilled for 2 No. M12 stainless steel bolts. Where safety cages are specified the hoops shall be made of 50 x 6 mm flat bars and the longitudinals of 40 x 6 mm flat bars, all in accordance with the dimensions as shown on the Drawings.

### **PS HA 5.2.8 Prefabricated Open Grid Floors**

*ADD THE FOLLOWING TO CLAUSE 5.2.8.1:*

Open grid flooring shall be of square pattern type of approved manufacture with 40 x 4 mm minimum thickness bearer bars spaced at not more than 40 mm centers and shall be manufactured in grade 304 stainless steel or 3 CR 12 steel (as scheduled or as shown on the drawings). The tendered rate shall include for all cutting into the required panels, banding and for frames detailed below.

Open grid flooring shall be provided with welded frames as scheduled, made of 50 x 50 x 5 mm thick 3 CR 12 steel angles to provide a seating for the open grid flooring. The net clearance between the side bars of the open steel flooring and the vertical leg of the frame or strip shall be 5 mm per side. The frames shall be complete with 100 x 40 x 3 mm 3 CR 12 steel anchors fixed at 500 mm centers for building the frame into the concrete work.

Pickling and passivation shall be carried out in accordance with the requirements of the Standardized Corrosion and Painting Specification for Civil Engineering Works.

### **PSHA 5.2.11 Straps for pipes**

Straps for holding down pipes to concrete surfaces shall be manufactured in the material stated on the drawing and to the dimensions as shown on the drawing.

If no dimensions are shown, same shall be 50 mm wide by 3 mm thick. The strap shall be slotted and shall be fixed to the concrete by means of M12 stainless steel self-drilling anchor bolts. The material between the strap and pipe shall be 8 mm thick neoprene sealing material 50 mm wide.

Pickling and passivation shall be carried out in accordance with the requirements of the Standardized Corrosion and Painting Specification for Civil Engineering Works.

### **PSHA 5.2.12 Access Covers**

Access Covers shall be manufactured in grade 304 stainless steel or hot dipped galvanized (heavy coating), in accordance with the details as shown on the drawings.

The DWA manhole covers shall be manufactured as per drawing and shall comply with DWA standards. Access covers in open grid flooring shall be manufactured as shown on drawings.

Pickling and passivation shall be carried out in accordance with the requirements of the Standardized Corrosion and Painting Specification for Civil Engineering Works.

### **PSHA 5.3.6 Repairs to paint and site painting**

*Delete this Sub-Clause and refer to the Standardized Corrosion and Painting Specification for Civil Engineering Works.*

## **PS HA 8 MEASUREMENT AND PAYMENT**

### **PS HA 8.3 SCHEDULED ITEMS**

**PS HA 8.3.2 Handrails**

**PS HA 8.3.2 Handrail assembly complete .....Unit : m**

Delete the reference to "details given" and add: as specified in Sub-Clause PS HA 5.2.6 (state material to be used).

The tendered rate shall include handrails comprising hand and kneerails installed complete as specified.

**PSHA 8.3.3 Cat ladder and safety cage (refer to drawing.....Unit: No and Clause PSHA 5.2.7)**

The tendered rate shall include full compensation for the manufacture, delivery and installation of the ladder, including supply and installation of stainless steel self drilling anchor bolts, complete as shown on the drawing.

**PSHA 8.3.4 Flooring, complete and installed with frames .....Unit: Square metre (m<sup>2</sup>)**

Delete the reference to "details given" and add: as specified in Sub-Clause PSHA 5.2.8 (state material to be used).

**PS HA 8.3.6 Corrosion Protection**

*SUBSTITUTE HA 8.3.6 WITH THE FOLLOWING:*

The corrosion protection of sundry steel items shall not be measured separately. The cost thereof shall be included in the rate for the related item.

**PSHA 8.3.7 Access covers.....unit: Number (No)  
(refer to drawing and clause PSHA 5.2.12)**

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The tendered rate shall include full compensation for the manufacture, delivery and installation of the cover to suit the position described and shown on the drawing.

## **PSL MEDIUM PRESSURE PIPELINES (SANS 1200 L)**

### **PSL 2 INTERPRETATION**

#### **PSL 2.4 ABBREVIATIONS**

*Add the following to this Sub-Clause:*

AC or FC - (Fibre reinforced cement)

HDPE – High-density polyethylene

### **PSL 3 MATERIAL**

#### **PSL 3.1 GENERAL**

*Add the following paragraph:*

"Each type of pipe delivered to the Site shall have a standard length corresponding with the standard lengths offered by the pipe manufacturer in his catalogue, with a maximum permissible variation in length of  $\pm 2\%$ .

A pipe that is a shorter or longer than the defined standard will be rejected by the Employer's Agent, except when such non-standard lengths are required in terms of the Contract and have been specifically manufactured or cut as such by the pipe manufacturer or supplier."

#### **PSL 3.3 CI PIPES, FITTINGS AND SPECIALS**

*Add the following to this Sub-Clause:*

All cast iron pipes and fittings shall comply with the requirements of BS 2035 and unless otherwise specified, pressure class K9 and shall be of class D quality for straight pipes and of class CD quality for fittings. Materials used shall comply with the requirements of SANS 1034 grade 300 for "Grey Iron Castings".

#### **PSL 3.7 Other types of pipes (Sub-Clause 3.7)**

##### **PSL 3.7.1 uPVC Water Pipes**

Water pipes that have to be supplied shall be Class 16 uPVC spigot and socket or similar approved pipes unless otherwise specified, complying with SANS 996-1-2010 and diameters as set out in the Schedule of Quantities.

##### **PSL 3.7.2 Galvanised Pipes**

Galvanised steel pipes shall be supplied for inside isolation valve and bulk water meter boxes (diameters as indicated), unless otherwise indicated on drawings. Materials to be in accordance of SANS 62.

##### **PSL 3.7.3 Steel (ERW) Pipes**

Steel (ERW) pipes with a wall thickness 4.5mm shall be supplied for all above ground applications. Pipe material to be in accordance of SANS 719 / SANS 62.

### **PSL 3.8.3 Flanges and Accessories**

*Add the following to this sub clause:*

The dimensions and drilling of standard flanges shall comply with the requirements of SANS 1123 table 16 for pipes and fittings with a diameter of 150 mm and smaller and in accordance with table 10 for diameters exceeding 150 mm unless stated otherwise. Flanges shall be machined flat, i.e. without a raised joint face. Puddle flanges shall have the same dimensions as standard flanges but shall be undrilled.

Faces of flanges which will be in contact with jointing gaskets shall receive a protective coating similar to the corrosion protection specified for the internal surface of the pipes and fittings of such thickness and consistency as will not impair the air/gas/water tightness of the joint.

The jointing gaskets shall comply with the requirements of BS 3063 and shall be cut to the full width of the flange and holed for bolts.

### **PSL 3.9 CORROSION PROTECTION**

#### **PSL 3.9.2.2 Steel pipes of nominal bore over and including 100 mm**

Grit blasting finish to comply with a SA3 finish. Protection of steel pipes to be specified by Contractor and approved by the Employer's Agent. A two-pack epoxy coating is preferred. Refer to specification PQ for guidance.

#### **PSL 3.9.5 Joints, Bolts, Nuts and Washers**

*Add the following to this sub clause:*

Bolts and nuts for standard flanges shall comply with the requirements of SANS 1123 for a working pressure as specified for the flanges in conjunction with which they are to be used.

The jointing gaskets shall comply with the requirements of BS 3063 and shall be cut to the full width of the flange and holed bolts.

All other bolts and nuts shall comply with the requirements of SANS 136 and shall be of grade 4,6 steel. Washers shall be provided at each nut and shall be of the same material (or coating where applicable) to match the bolt and nut.

Bolts shall project not less than 3 mm and not more than 10 mm from the heads of the nuts after tightening.

Bolts to be installed above ground level directly above and under water shall all be of stainless steel grade 304. Bolts for flexible couplings and flanges for underground installation shall be hot-dip galvanized in accordance with the requirements of SANS 763. All other bolts shall be hot-dip galvanized in accordance with the requirements of SANS 763 and afterwards painted with the pipework and fittings as specified in Clause 3.9.

Suitable plastic sleeves and/or washers shall be used for protection against corrosion by metallic action.

### **PSL 3.10.1 Gate Valves**

All gate valves shall be standard waterworks pattern comply with the requirements of SANS 664 and shall be suitable for a working pressure of 1.6 MPa (Class 16) as specified. All gate valves must be supplied with a square spindle nut, suitable to be used with a valve key. One valve key per nut size must be provided and will be included in the rate for valves.

Gate valves shall be clockwise closing. The direction for opening and closing shall be permanently displayed on the valves. Valves shall have non-rising spindles.

Compression shut-off valves with rubber protected gate and smooth finish without recess inside, may be used. The body and bonnet shall be epoxy coated internally and externally.

The spindle seal shall consist of at least two O-rings located in a corrosion resistant housing. A wiper ring to prevent ingress of dirt shall be provided. The spindle nut may be loose or fixed in the gate.

The valves shall be provided with a straight, unobstructed body passage without any pocket and the gate shall be completely clear of the waterway in the fully open position. The sealing and gate guide areas shall be designed to eliminate deposits in the valve body. The gate guide areas shall be designed to eliminate deposits in the valve body. The gate guides shall be of substantial design to support the gate until the point of closure.

All components shall be interchangeable between valves of one size. The rated working pressure shall be 16 or 25 bar as specified. The valve shall be capable of being opened and closed under an unbalanced pressure equal to the rated working pressure.

All flanged gate valves shall be drilled according to SANS 1123 Table 1600/3 or 2500/3.

Pipes shall not be tested against a closed valve. Thrust blocks for test sections shall be approved by the Employer's Agent prior to testing of pipes.

### **PSL 3.10.2 Air Valve**

Air valve for potable water shall have a pressure rating as specified on the drawings. All air valves shall be double action air valves of Vent-o-mat RBX, or similar approved.

The branch of the tee on the main pipe shall be minimum 0.67 (2/3) of the diameter of the main pipe.

Double-acting air valves shall have large as well as small orifices. The large orifice shall have a rubber bed, and the small orifice a brass bed on which the balls can shut. Double-acting air valves shall be flanged and supplied with flanged isolating valves. Air valves shall be designed into remain open until all the air has escaped and shall not close due to the speed of the escaping air.

The valve shall incorporate an integral "Anti-Shock" orifice mechanism which, during the pipeline filling operation and when a separated water column proceeds to re-join, shall operate automatically to limit transient pressure, rise induced by large orifice closure to a maximum of 2 x valve rated working pressure



### PSL 3.10.4 Reflux Valves (Non-Return)

Reflux valves shall have a class 16 pressure rating as specified and, unless otherwise indicated, shall be flanged, drilled to SANS 1123, Table 1600/3 or 2500/3. The casing and flap shall be manufactured from close-grained cast iron with a brass face on the flap that close onto a corresponding brass plane in the casing.

The hinge pin shall swivel freely in bearings on both sides of the casing. Cone-shaped rubber-seal reflux valves with stainless steel may be used if approved by the Employer's Agent.

### PSL 3.10.5 Bulk Water Meter

#### Mechanical Flow Meters

New Mechanical bulk water meters shall be installed as shown on drawings.

#### Functional Requirement of Bulk Water Meters

DESCRIPTION	METER
1. Detail of pipeline	Varies
2. End connections	Flanged, SANS 1123 (Class 1600/3)
3. Permanent flow rate	Varies m <sup>3</sup> /h
4. Size of meter	Varies

#### Technical Requirements for the Meters

The bulk water meters shall be combination cold water meters (type C3200 by ABB, Kent or similar as approved by Employer's Agent) and flanged on both sides. A distance of 5 times the diameter of the pipe before and 3 times the diameter after the water meter must be kept free of any obstructions such as bends, reducers, etc. unless it is approved by the Supplier that above conditions is not required, to be approved by Employer's Agent.

The flow reading shall be given on a dial face and totalizing shall occur by means of a roller counter and shall be accurate within  $\pm 2\%$ . The body shall be manufactured from spheroidal graphite iron.

The meter shall be manufactured in such a way that all moving parts can be removed and replaced from the top without removing the whole meter. Replacement parts should be freely available. Each water meter installation shall be supplied with a gate valve on the upstream side of the water meter. This gate valve shall be provided for under the relevant item in the schedule of quantities. The water meter shall have provision to log the records manually and electronically (Data Logging).

#### Installation of Meter

The meter shall be installed by a person approved by the supplier in order to validate the guarantee.

All accessories for the complete installation shall be supplied by the Contractor.

All metal work shall be painted according to specifications after the testing and completion of the installation. Each meter must be supplied with a blind flange. The meter mechanism may only be installed after the pipeline has been completely constructed, flushed and tested.

#### **Electromagnetic Flow Meters**

New Electromagnetic bulk water meters shall be installed as shown on drawings.

#### **Technical Requirements for the Meters**

The bulk water meters shall be of the magnetic flow type cold water meters (ISOMAG or similar as approved by Employer's Agent) and flanged on both sides. A distance of 3 times the diameter of the pipe before and 2 times the diameter after the water meter must be kept free of any obstructions such as bends, reducers, etc. unless it is approved by the Supplier that above conditions is not required, to be approved by Employer's Agent.

The flow reading shall be given on a digital transmitter face indicating the instantaneous flow and totalized volume and shall be accurate within  $\pm 2\%$ .

The meter shall be manufactured in such a way that all moving parts can be removed and replaced from the top without removing the whole meter. Replacement parts should be freely available. Each water meter installation shall be supplied with a gate valve on the upstream side of the water meter. This gate valve shall be provided for under the relevant item in the schedule of quantities. The water meter shall have provision to log the records manually and electronically (Data Logging).

#### **Installation of Meter**

The meter shall be installed by a person approved by the supplier in order to validate the guarantee.

All accessories for the complete installation shall be supplied by the Contractor.

All metal work shall be painted according to specifications after the testing and completion of the installation.

The meter mechanism may only be installed after the pipeline has been completely constructed, flushed and tested.

### **PSL 3.10.6 Control Valves**

Surge Anticipating Valves shall open to a high and low pre-set pressure regardless of fluctuating demand or varying upstream pressure.

Level control valves shall be hydraulically controlled by modulating vertical float, diaphragm actuated control valve controlling reservoir filling to maintain a constant water level regardless of fluctuating demand.

Flow control valves shall maintain a pre-set maximum flow, regardless of fluctuating demand or varying system pressure.

Main Valves: The main valve shall be a centre guided, diaphragm actuated globe valve of either oblique (Y) or angle pattern design. The body shall have a replaceable, raised, stainless steel seat ring. The valve shall have an unobstructed flow path, with no stem guides, bearings, or supporting ribs. The body and cover shall be ductile iron.

All external bolts, nuts, and studs shall be Duplex® coated. All valve components shall be accessible and serviceable without removing the valve from the pipeline.

Actuators: The actuator assembly shall be double chambered with an inherent separating partition between the lower surface of the diaphragm and the main valve. The entire actuator assembly (seal disk to top cover) shall be removable from the valve as an integral unit.

The stainless-steel valve shaft shall be centre guided by a bearing in the separating partition. The replaceable radial seal disk shall include a resilient seal and shall be capable of accepting a V-Port Throttling Plug by bolting.

Control System (Surge Anticipation): The control system shall consist of two 2-Way adjustable, direct acting, pressure reducing pilot valves, needle valves, isolating cock valves and filters. All fittings shall be forged brass or stainless steel. The assembled valve shall be hydraulically tested and factory adjusted to customer requirements.

Control System (level control): The control system shall consist of a 4-way adjustable, last position bi-level vertical float and sensing line (extended rod to be balanced by counterweights installed on the lever system according to rod length and system pressure and to be installed in a stilling basin), needle valves, isolating cock valves, and strainers. All fittings shall be forged brass or stainless steel. The assembled valve shall be hydraulically tested and factory adjusted to customer requirements.

Quality Assurance: The valve manufacturer shall be certified according to the ISO 9001 Quality Assurance Standard. The main valve shall be certified as a complete drinking water valve according to NSF, WRAS, and other recognized standards.

## **PSL 5 CONSTRUCTION**

### **PSL 5.1.4 Covering Required**

The minimum covering measuring from the soffit of the pipe to the final prepared ground level shall not be less than 1000mm. Where applicable (Road Crossings etc.) the Employer's Agent may order pipe encasing to protect shallow pipelines.

## **PSL 7 TESTING**

### **PSL 7.3.1.2 Test Pressure**

The test pressure shall be 1,5 times the maximum allowable working pressure for the class of pipe being tested.

## **PSL 8 MEASUREMENTS AND PAYMENT**

### **PSL 8.2 SCHEDULED ITEMS**

#### **PSL 8.2.16 Marker blocks.....Unit: No.**

The markers will consist of 900mm height with a painted undercoat and two layers of yellow paint 20MPa concrete marker with a clear marked symbol 5mm deep in the concrete face as per drawing named "Detail of concrete marker block"

The tendered rate shall include full compensation for all excavation and backfill, labour, equipment and materials to manufacture supply and install the blocks as shown on the Drawings.

**PSL 8.2.17 Refurbish / Repair or Replace Existing Interconnecting Pipework .....Unit: No.**

The contractor's rate shall cover all associated costs which includes and is not limited to all material, equipment, labour, transport costs for the refurbishment / repair or replacement of existing interconnecting pipework items as listed in the bill of quantities.

It will remain the contractor's responsibility to inspect the existing interconnecting pipework items for any leaks, coating damage and / or operational defects (affecting effective operation) which may be refurbished / repaired. In the event of interconnecting pipework items being beyond repair the contractor will inform the Employer's Agent in writing of the item in need of replacement as well as providing the Employer's Agent with an inspection certificate indicating the reason and / or need for potential replacement as well as a separate method statement for each replacement.

Interconnecting pipework item will only be replaced upon written approval of the inspection certificate and relevant method statement as well as instruction by the Employer's Agent

Interconnecting pipework as listed:

a) Isolation Valves

Refer to project specification PSL3.10.1 Gate Valves.

b) Non-return / Check Valves

To match existing and in accordance with project specification PSL3.10.4

c) Control Valves

To match existing and in accordance with manufacturer specification as well as project specification PSL3.10.6.

**PSLB BEDDING (PIPES)**

**PSLB 3 MATERIALS**

**PSLB 3.1 SELECTED GRANULAR MATERIAL**

*REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:*

"Selected granular material shall have a PI not exceeding 10 and shall be free from sharp-ended particles or particles exceeding 19 mm in size."

"Selected fill material shall have a PI not exceeding 15 and shall be free from sharp-ended particles or particles exceeding 19 mm in size."

**PSLB 3.3 BEDDING**

*ADD THE FOLLOWING:*

"uPVC and HDPE pipes are deemed to be flexible pipes for the purposes of this subclause."

**PSLB 3.4 SELECTION**

**PSLB 3.4.1 Suitable material available from trench excavation**

*REPLACE THE WORDS "(but is not required)" IN THE FIFTH LINE WITH THE WORDS "(at his own cost)".*

**PSLB 7 TESTING**

**PSLB 7.1 DENSITY**

*REPLACE THE SECOND SENTENCE IN THE FIRST PARAGRAPH WITH "The test will be carried out using the Troxler method."*

*ADD THE FOLLOWING SUB-CLAUSE*

**PSLB 7.1.1 Submission of bedding compaction test results**

The Contractor will be required to submit to the Employer's Agent four (4) compaction test results of bedding for every 100metres. Bedding compaction to be 90% MOD AASTHO density. The compaction tests to be performed by the Troxler method.

**PSLB 8 MEASUREMENT AND PAYMENT**

**PSLB 8.1 PRINCIPLES**

*ADD THE FOLLOWING TO THIS SUB-CLAUSE*

**PSLB 8.1.3 Volume of bedding materials**

The volume of bedding material shall be measured net i.e. the volume of the pipe is to be deducted.

**PSLB 8.1.5 Disposal of displaced material**

*DELETE THIS SUB-CLAUSE AND REFER TO CLAUSE PSDB 5.6.3:*

**PSLB 8.1.6 Free-haul**

*DELETE THE WORDS "of 0,5 km" IN THE FIRST LINE OF THIS SUBCLAUSE.*

**PSLB 8.2 SCHEDULED ITEMS**

**PSLB 8.2.1 Provision of bedding from trench excavations**

*DELETE THIS SUB-CLAUSE AND REPLACE WITH THE FOLLOWING:*

Without the need for screening or other treatments:

- a) Selected granular material .....Unit: m3
- b) Selected fill material .....Unit: m3

The rates shall cover the cost of acquiring, from any point along the trench excavation as be Selected by the Employer's Agent within 5,0 km, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of displaced material within a free haul distance 5,0 km.

Including for screening and/or other treatment:

- a) Selected granular material .....Unit: m3
- b) Selected fill material .....Unit: m3

The rates shall cover the cost of screening by means of mesh sieves or otherwise treating excavated material, at any point along the trench excavation as may be selected by the Employer's Agent, in order to produce bedding that complies with the relevant specification, delivering it to points along the trench, within 5,0 km, spaced to suit the Contractor's methods of working, of making good any backfill deficiency there may be from points where screened backfill material has been acquired, and of disposing of displace material within a free haul distance of 5,0 km.

**PSLB 8.2.2 Supply only of bedding by importation**

**PSLB 8.2.2.3 From commercial sources (Provisional)**

*ADD THE FOLLOWING SUB-SUBITEM TO THIS CLAUSE:*

- "(c) Special bedding material
  - 1) Description of material..... Unit: m3
  - 2) Etc for other items

The unit of measurement shall be the cubic metre of material as specified. The rate shall cover the cost as specified for (a) and (b)." The rate shall include the cost of acquiring from commercial sources, transporting regardless of distance, off loading and placing in the trench bottom clean where ordered by the Employer's Agent.

*ADD THE FOLLOWING SUB-SUBCLAUSE:*

**PSLB 8.2.6 Compaction Test**

Compaction testing using the troxler method .....Unit: No

**PSVA: ANCILLARY WORK - LANDSCAPING AND GRASSING**

**PSVA 1 SCOPE**

This section covers the landscaping and/or the establishing of vegetation in such areas as indicated on the Drawings or ordered by the Employer's Agent, in writing.

**PSVA 2 INTERPRETATIONS**

**PSVA 2.1 SUPPORTING SPECIFICATIONS**

The following specifications shall, inter alia, form part of the Contract Document:

- (a) SABS 1200A
- (b) SABS 1200D

**PSVA 3 MATERIALS**

**PSVA 3.1 FERTILIZER**

The type of fertilizer to be used shall be as specified or ordered by the Employer's Agent or scheduled.

**PSVA 3.2 GRASS CUTTINGS**

Grass cuttings shall be fresh and in a good condition for planting, with sufficient root material to ensure good growth. Species to be planted shall be as specified or scheduled.

**PSVA 3.3 GRASS SEED**

Only good-quality fresh seed shall be used. The types of seed in the mixture and the pure live-seed content shall be as specified or scheduled.

**PSVA 3.5 GRASS SODS**

Grass sods shall be nursery grown and shall be harvested, delivered and planted within 36 hours, unless otherwise authorized by the Employer's Agent. Grass sods shall be free from noxious weeds and diseases and shall contain a minimum of 30 mm of soil.

Sods shall be of the variety of grass specified or scheduled. The grass shall have been grown specifically for sod purposes, mown regularly and maintained to provide an approved quality of uniformity. It shall be harvested by special machines manufactured for this purpose to ensure an even depth of cut with sufficient root material and soil.

**PSVA 3.7 ANTI-EROSION COMPOUNDS**

Anti-erosion compounds shall consist of a plastic material in dispersion, such as Verdyol or a similar approved compound, which can be sprayed onto the soil to bind and protect it against erosion.

**PSVA 3.8 TOPSOIL**

Topsoil shall consist of fertile loamy soil selected from areas showing a good coverage of natural vegetation, preferably grasses. It shall be free from deleterious matter such as large roots, stones, refuse, stiff or heavy clays and noxious weeds, which would adversely affect its suitability for the planting of grass.

Topsoil shall be obtained wherever suitable material occurs, either from the Site or from borrow areas to be cleared, as described in Sub-Clause 5.2.1.2 of SABS 1200D. The Employer's Agent shall indicate his requirements to the Contractor regarding the quantity of topsoil required and the areas at which it shall be selected and when it shall be removed. Unless otherwise specified or as instructed by the Employer's Agent, topsoil shall not be taken from more than 400 mm below the original undisturbed surface. If the Contractor fails to conserve topsoil as instructed, he shall obtain suitable substitute material from other sources at no extra cost to the Employer.

Where so specified, the Contractor shall procure and supply topsoil from his own sources outside the Site. Such sources shall be subject to the approval of the Employer's Agent.

Topsoil shall be stockpiled in separate loose heaps as tipped from the trucks and shall not be stockpiled higher than 2,0 m.



### **PSVA 3.9 MANURE**

Manure shall, unless another type is approved by the Employer's Agent, be pure "kraal" manure, free from soil, weed seed or other objectionable material. It shall not contain any particles that will not pass through a 50 mm screen. Only manure which has been approved by the Employer's Agent shall be delivered to the Site.

### **PSVA 3.10 COMPOST**

Compost shall be well-decayed, friable and free from weed seed, dust and other objectionable materials.

### **PSVA 4 PLANT**

Not applicable to this Section.

### **PSVA 5 CONSTRUCTION**

#### **PSVA 5.1 LANDSCAPING OF AREAS**

##### **PSVA 5.1.1 Shaping**

Areas that require shaping which involves bulk earthworks, such as contoured areas, shall be excavated, filled, compacted when required, and shaped to the correct contours to within a tolerance of plus or minus 150 mm. Such work shall be considered as earthworks and measurement and payment shall be made under SABS 1200D, except that quantities may be measured by means of a grid of levels taken at 10 m intervals before and after shaping, or by means of leveled cross-sections.

##### **PSVA 5.1.2 Trimming**

Trimming shall consist of bringing the existing or previously shaped ground to an even surface with the final levels generally following the original surface. Trimming shall normally be done by grader, or, in more confined or steep areas, by bulldozer. Where machine operations are not practicable because of confined spaces or steep slopes, trimming shall be done using hand tools.

All trimming alongside roads and streets shall be completed before construction of the sub-base layer commences. Such trimming shall be carried out on both sides of the road or street up to the boundaries of the road reserve unless otherwise specified or instructed by the Employer's Agent.

Where applicable, trimmed surfaces shall be left slightly rough to facilitate binding with topsoil or the natural establishing of vegetation. When subsequent grassing is required or when instructed by the Employer's Agent, areas previously shaped shall be trimmed as described above to within a tolerance of plus or minus 25 mm, with all undulations following a smooth curve. The above tolerance shall apply only to areas where the final contours are given in the Drawings.

During trimming, all stones in excess of 50 mm in size and all excess material shall be removed. The trimming of any areas requiring grass shall be done in such a way that, after cultivation and application of any topsoil, the finished surface of the area shall be approximately 25 mm below the top of adjacent kerbing, channeling or pavement.

### **PSVA 5.1.3 Plant rates**

The Employer's Agent shall be entitled to pay for shaping and trimming as described above on the basis of the hourly rates for motor graders and bulldozers. The motor grader and bulldozer to be provided shall each have a fly-wheel power of not less than 93 kW. Any labour or other plant ordered shall be paid for as "extra work" as specified in clause 40 of the General Conditions of Contract.

### **PSVA 5.2 PREPARATION OF AREAS FOR GRASSING**

The various areas to be grassed shall be prepared as follows:

#### **PSVA 5.2.1 Areas not requiring topsoil**

Where the areas to be grassed consist of organically suitable material, they shall be scarified to a minimum depth of 150 mm. All loose stones larger than 30 mm on areas to be mowed by machine shall be removed.

#### **PSVA 5.2.2 Areas requiring topsoil**

Where areas to be grassed consist of organically unsuitable material, the surface shall be roughened to ensure a proper bonding between the topsoil and the subsoil. If required, the area shall be scarified as described in Sub-Clause PSVA 5.2.1 above.

Topsoil shall be placed on the prepared surfaces and trimmed to the uniform thickness required. The topsoil shall be prepared by means of hand rakes or light rotavators to obtain a smooth surface. All stones shall be removed as specified for areas not requiring topsoil in Sub-Clause PSVA 5.2.1 above.

#### **PSVA 5.2.3 Fertilizing**

The Contractor shall have the top 150 mm of the prepared surfaces tested to determine the amount and type of fertilizer required for establishing proper growing conditions for the grass. The fertilizer shall be evenly applied over all surfaces where grass is to be planted and shall then be thoroughly mixed with the soil, either mechanically or manually, to a depth of 150 mm. Where hydro seeding is to be performed, the fertilizer may be mixed with the cellulose pulp and water used in hydro seeding.

### **PSVA 5.3 GRASSING**

The method of establishing grass shall depend on the circumstances relating to each case. The method to be used in each case shall be agreed on by the Employer's Agent and the Contractor.

#### **PSVA 5.3.1 Planting of grass cuttings**

The areas to be planted shall, unless they are wet, be thoroughly watered before planting to ensure that soil will be uniformly wet over a depth of at least 150 mm during planting.

The Contractor shall plant an approved variety of grass cuttings, using his own method, in such a way as to obtain a sufficient number of live and actively growing plants per square meter to provide an acceptable cover as defined in Sub-Clause PSVA 5.4.2 of this section. At least 70 grain bags of cuttings shall be planted per hectare. Only fresh cuttings shall be used. Grass cuttings that have been allowed to dry out shall not be used. Immediately after planting the grass cuttings shall be given a copious watering and when sufficiently dry shall be rolled with a light agricultural roller.

### **PSVA 5.3.2 Sodding**

Areas to be grassed by sodding shall be given a layer of topsoil at least 75 mm thick unless the Employer's Agent instructs that the topsoil be omitted where suitable subsoil is present. The areas to be sodded shall be thoroughly watered beforehand so that they will be wet to a depth of at least 150 mm after sodding. The surface shall be slightly roughened to ensure a good penetration of roots into the soil. Sods shall be protected against drying out and shall be kept moist from the time of harvesting until finally placed.

Wherever possible, the first row of sods shall be laid in a straight line and, if on a slope, lying shall be started at the bottom of the slope. The sods shall be butted tightly against each other and care shall be taken not to stretch or overlap the sods. Where a good fit cannot be obtained, the intervening space shall be filled with topsoil. The next row shall similarly be placed tightly against the bottom row with the joints staggered, and so on, until the entire area is covered with sods. On the instructions of the Employer's Agent, sods shall be held in position on steep slopes by a sufficient number of robust wooden stokes approximately 300 mm in length by 20 mm in diameter. Each section of completed sodding shall be lightly rolled and thoroughly watered.

## **PSVA 5.4 ESTABLISHING AND MAINTENANCE OF GRASS**

### **PSVA 5.4.1 Watering, weeding, cutting and replanting**

All sod and planted areas shall be adequately watered at frequent and regular intervals in order to ensure proper seed germination and the growth of grass until the grass has established on acceptable cover and thereafter until the beginning of the maintenance period of the grass. The amount and frequency of watering shall be subject to the Employer's Agent's approval. Where hydro seeding is carried out, the commencement of watering may be postponed until a favourable time of the year, but watering shall in any case commence and continue as soon as the seeds have germinated and growth begins.

The Contractor shall mow the grass on all areas that have been grassed, whenever so instructed by the Employer's Agent, until the end of the maintenance period. All grass cuttings shall be collected and disposed of if so directed by the Employer's Agent. Weeds shall be controlled by means of pulling or cutting or by any other approved means. Any bare patches where the grass has not taken, or where it has been damaged or has dried out shall be re-cultivated, planted, sodded or hydro seeded at the Contractor's expense. All grassed areas shall have acceptable cover as defined below at both the beginning and end of the maintenance period.

### **PSVA 5.4.2 Acceptable cover**

An acceptable grass cover shall mean that not less than 75% of the area planted or hydro seeded shall be covered with grass and that there shall be no bare patches the maximum dimension of which shall not exceed 500 mm. In the case of sodding, acceptable cover shall mean that the full area shall be covered with live grass at the end of any period of not less than three months after sodding.

### **PSVA 5.4.3 Maintenance period**

The maintenance period of grass shall commence when an acceptable cover as defined in Sub-Clause PSVA 5.4.2 above has been established and shall be one year. This means

that the maintenance period for grass can commence earlier or later than the maintenance period for other portions of the Contract.

The maintenance period for grassing by re-vegetation cylinders shall start whenever an acceptable grass cover is obtained or when the section of the Works where grassing is done is handed over for maintenance, whichever is the earlier date, and shall be one year.

If the maintenance period for the grass expires before the end of the maintenance period for the Contract, the Contractor shall further mow the grass on such areas as instructed by the Employer's Agent up to the end of the maintenance period for the Contract.

## **PSVB ANCILLARY WORK: FENCING**

### **PSVB 1 SCOPE**

This section covers the erection of new fences, the moving of existing fences, the erection and later removal of temporary fences and the dismantling of existing fences.

#### **PSVB 1.1 TYPES OF FENCES**

The following types of fence shall be erected in accordance with the dimensions shown on the Drawings:

- a) Pedestrian fences with diamond mesh, or tension fencing to the full height of the fence.
- b) Security fences, either the veranda type with diamond mesh or tension fencing on the vertical portion and barbed wire on the overhang, or the vertical type with full height diamond mesh, tension fencing, or razor mesh, either with or without rolls of barbed-tape concertinas fitted as shown on the Drawings. The fences can also be fitted with "Flat Rap" concertinas.
- c) Stock fences, standard barbed wire type.
- d) Clear-Vu type Fence, sliding and pedestrian gates or similar approved.

### **PSVB 2 INTERPRETATIONS**

The following Specifications shall, inter alia, form part of the Contract Document:

- a) SANS 1200A
- b) SANS 1200C
- c) SANS 1200G
- d) The Standardized Specification for Corrosion Protection and Painting for Civil Engineering Work.

### **PSVB 3 MATERIALS**

#### **PSVB 3.1 POSTS, STAYS, STANDARDS AND DROPPERS**

Posts, stays, standards and droppers shall be of the type and size indicated on the Drawings. Posts shall include gate posts, straining posts and corner posts. Metal posts, stays, standards and droppers shall comply with the requirements of CKS 82 and SANS 280. "Acceptable" in CKS 82 means "acceptable to the Employer's Agent".

Tubular posts shall be sealed at the top with caps and shall be fitted with base plated as shown on the Drawings. Tubular posts, standards and stays shall be galvanized in accordance with SANS 763

Table 1 for type B1 articles. All rail sections, Y-sections and metal droppers shall be provided with a protective coating of tar or other approval material.

Timber posts, stays standards and droppers shall comply with the requirements of SANS 457 and shall be creosote impregnated in accordance with SANS 05, with creosote complying with SANS 538 or SANS 539. All timber shall be straight and free from unsightly knots, splits and other imperfections. Corner, gate and staining posts shall be suitably drilled for stay bolts or gate fittings as indicated on the Drawings.

### **PSVB 3.2 BOLTS FOR STAYS**

Bolts shall be of mild steel and galvanized in accordance with SANS 763 Table 1 for type C articles. The length and diameter of the bolts shall be as shown on the Drawings. All the necessary bolts, together with nuts and washers, shall be supplied with each post.

### **PSVB 3.3 WIRE**

All wire shall conform to the requirements of SANS 675 and shall be Class B galvanized, except where otherwise specified below:

a) Barbed wire

Barbed wire shall be one of the following types:

- (i) High-tensile grade, oval shapes, single-strand wire,
- (ii) Mild-steel grade, double strand, uni-directional twist wire, each strand 2.50mm in diameter.

Barbs shall be spaced at not more than 150mm intervals.

b) Smooth wire

Smooth wire shall be of the types specified below:

- (i) Straining wire shall be mild-steel wire, 4.0mm in diameter.
- (ii) Fencing wire shall be high-tensile-grade 2.24mm diameter wire.
- (iii) Tying wire or binding wire shall be 2.50mm diameter mild-steel Class C galvanized wire for tying fencing wire to standards and droppers, and
- (iv) 1.60mm diameter, mild-steel Class C galvanized wire for tying wire mesh to fencing wire.

c) Barbed-tape concertinas and "Flat Rap"

Barbed-tape concertinas and "Flat Rap" shall comply with the requirements for type A in CKS Specifications 592 and shall consist of close-coiled high-tensile wire with a continuous strip of flat steel barbs (barbed tape) crimped to the wire along the entire length of the wire. The coils shall further be attached together by clips to give a concertina configuration when pulled apart. The coils shall be of the diameter as shown on the Drawings. Each concertina shall have a minimum of 55 coils, and the maximum effective length of open concertina, when pulled apart, shall depend on the diameter of the roll but shall not exceed 12m.

The high-tensile wire shall be Class B galvanized. The barbed tape shall be made of cold-rolled carbon steel galvanized to Class Z450. The concertina clips shall be manufactured from steel strip galvanized to Class Z450.

d) Diamond mesh

Diamond mesh (chain-link fencing) shall comply with the requirements of SANS 1373. The width shall be shown on the Drawings, and both edges shall be clinched.

The diameter of the wire shall be 2.5mm and the mesh size shall be as shown on the Drawings.

The wire shall be Class B galvanized.

e) Razor mesh

Razor mesh shall comply to the youngest applicable SANS Specifications. The width shall be as shown on the drawing and the mesh shall be joined and fixed as specified by the manufacturer. The diameter of the wire shall be not less than 2.5mm and the razor barbs shall be needle sharp and approximately 23 x 19mm in size. It shall be a welded mesh with diamond sharp apertures, 150mm wide by 300mm high. The mesh shall be heavy duty galvanized.

f) Tension fencing

Pre-assembled (welded) tension fencing shall be manufactured from wires complying with the requirements of SANS 675. The width shall be as shown on the Drawings with the wires having a minimum diameter of 2.24mm and apertures between them both exceeding 0.01m<sup>2</sup>. All wires shall be of a high-tensile grade and shall be Class B1 galvanized.

### PSVB 3.4 GATES

Gates shall comply with the requirements of CKS 146 and shall be manufactured to the dimensions shown on the Drawings. Gates shall be complete in every respect, and shall include hinges, bolts with nuts and washers, barrel bolts with tubular receivers in both closed and open positions, suitable and effective catches and locking chain, which shall be attached to the gate with padlock and two keys.

### PSVB 3.5 MATERIALS FOR TEMPORARY FENCES

All new material for temporary fences shall be of the same quality as the material for new fences. Second-hand material, whether available on Site or purchased, shall be submitted to the Employer's Agent for approval before use. The protective galvanized coating on all second-hand fencing wires shall be intact but may have a rusty appearance provided that the rust is superficial and does not impair the structural strength of the items.

### PSVB 3.7 CONCRETE

Concrete used for fencing shall comply with the requirements of SANS 1200G.

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## **PSVB 5 CONSTRUCTION**

### **PSVB 5.1 CLEARING OF FENCE LINE**

Strip clearing for the fence shall be carried out and paid for in accordance with SANS 1200C.

### **PSVB 5.2 INSTALLING POSTS AND STANDARDS**

Straining posts shall be erected at all ends, corners and bends in the line of fencing and at all junctions with other fences. Straining posts shall not be spaced further apart than shown on the drawings. The height of the post above the ground shall be such that the correct clearance between the lowest wire and the ground can be obtained.

Posts shall be accurately set in holes and where indicated, shall be provided with concrete bases to the dimensions shown on the Drawings. Holes shall be dug to the full specified depth. Where, owing to the presence of rock, the holes cannot be excavated by hand or by pneumatic tools and the Contractor has to resort to the use of explosives, he will be paid separately for the drilling and blasting operations required. Corner, gate, end and straining posts shall be braced by means of stays or anchors, as shown on the Drawings. Pipe stays shall be bolted to the posts.

Standards shall be firmly planted in the ground at the spacing shown on the Drawings or as directed by the Employer's Agent. The spacing of standards between any two straining posts shall be uniform. In rock or hard material standards shall either be driven or set in holes drilled into the rock. The size of drilled holes shall be such that a tight fit is obtained. Care shall be taken not to buckle or damage the standards when driven. Where indicated, standards shall be provided with concrete bases to the dimensions shown on the Drawings.

All posts and standards shall be accurately aligned and set plumb. Where veranda-type security fencing is used, the posts and standards shall be planted with the overhang as shown on the Drawings and at right angles to the direction of the fence. After posts and standards have been firmly set in accordance with the foregoing requirements, the fencing wire shall be attached thereto as described below.

### **PSVB 5.3 INSTALLING WIRE AND TENSION FENCING**

All fencing wire shall be carefully stretched and hung without sag and with true alignment and care shall be taken not to stretch the wire so tightly as to cause breaking, to pull up straining posts, or to be easily damaged during veld fires. Each strand of fencing wire shall be securely fastened in the correct position to each standard with galvanized binding wire. The binding wire for each horizontal fence wire shall pass through a hole or notch in the standard, and the ends of the wire shall be wound at least four times around the fencing wire.

At the end, corner, straining and gate posts the fencing wire shall be securely wrapped twice around the post and secured against slipping by tying the end tightly around the wire by means of at least six snug, tight twists. In the case of high-tensile wire, two long windings must first be made before the six tight twists to prevent the wire from breaking at the first twist. Where smooth wire is used, the loose end shall be bent back and hooked into the opening between the fencing wire and the first winding.

Splices in the fencing wire will be permitted if made in the following manner with the use of a splice tool. The end of each wire at the splice shall be carried at least 75mm past the splice tool and wrapped snugly around the other wire for not less than six complete turns, after which the two separate wire ends shall be wound in opposite directions. After the splice tool has been removed, the



space left by it in the splice wire shall be closed by pulling together the wire ends. The unused ends of wire shall be cut close so as to leave a neat splice.

Tension fencing shall be installed according to the methods and with the special tools recommended by the manufacturer.

#### **PSVB 5.4 INSTALLING DROPPERS**

Droppers shall be tied to each fence wire with binding wire in the required position to prevent vertical slipping. The spacing of droppers between any two standards shall be uniform and shall be at distances as shown on the drawings. Droppers shall be suspended just clear of the ground.

#### **PSVB 5.5 INSTALLING DIAMOND MESH AND RAZOR MESH**

Where indicated on the Drawings, mesh shall be stretched against the fence and properly tied to the fencing wire. The mesh shall be secured by means of binding wire at 450mm centres along the top and bottom wires and at 1500mm centres along each of the fencing wires, unless shown otherwise on the Drawings. Recommendations by the manufacturer not mentioned here, must also be adhered to.

#### **PSVB 5.6 INSTALLING BARBED-TAPE CONCERTINAS AND "FLAT RAP"**

Barbed-tape concertinas or "Flat Rap" shall be positioned on the fence as shown on the Drawings. The concertinas shall be fastened to the appropriate fencing wires at each standard as well as at 10.m maximum intervals between standards. Rolls of barbed-tape concertinas shall be joined with binding wire at four points, spaces at equidistant intervals around the circumference of the loop. Joints shall be made to coincide with the positions of standards.

#### **PSVB 5.7 CLOSING OPENINGS UNDER FENCES**

At ditched, streams, drainage channels or other hollows where the fence cannot follow the general ground contour, the Contractor shall close the opening under the fence by means of horizontal barbed wires 150mm apart and stretched between additional standards or straining posts as shown on the Drawings. The opening shall be covered with strips of mesh, fixed to the barbed wires where applicable. In the case of larger streams, the opening below the lower fencing wire shall be closed by means of loose-hanging wire nets as shown on the Drawings. These mats shall be erected at streams only on the instructions of the Employer's Agent.

#### **PSVB 5.8 EXISTING FENCES**

Where a new fence joints and existing fence, whether in line or at an angle, the new fence shall be erected with a new straining post positioned at the junction with the existing fence. Existing fences that are required to be taken down or moved to a new location shall be dismantled and shall either be re-erected to the same design as originally constructed, with such modifications as the Employer's Agent may require, or shall be erected to one of the standards specified in PSVB 1.1 if so scheduled.

Material not required for re-erection or declared to be unsuitable for re-use shall be removed from the site in accordance with the Employer's Agent's instructions. In the case of existing fences that require moving, the Contractor shall, where possible, re-use all material found to be suitable for this purpose, and shall supply any such new materials as may be required for re-erecting the fence to the standards specified for new fences. The Contractor shall take extreme care when straining used wire to avoid unnecessary breakage.

### **PSVB 5.10 INSTALLING GATES**

Gates shall be installed at the positions indicated on the Drawings. The gates shall be hung on gate fittings in accordance with the details shown on the Drawings. Gates shall be so erected that they swing in a horizontal plane at right **angles** to the gate posts and clear of the ground in all positions. Double swing gates shall close to have gaps as shown on the drawings.

## **C4 Site Information**

C4.1 Locality Plan

C4.2 Tender Drawings

## **C4.1 Locality Plan**

## **C4.2 Tender Drawings**

The following tender drawings (Working Drawings – Not For Construction) are bound with this document for use as a base of planning the project:

### **Layout Drawings:**

MPU-RET-000	Mpumulwane Reticulation Layout
MPU-RET-001	Mpumulwane Reticulation Detailed Layout 1 of 2
MPU-RET-002	Mpumulwane Reticulation Detailed Layout 1 of 2
MPU-RES-001	Site Layout – Reservoir and WTP
MPU-RES-002	Reservoir Platform details
MPU-WTP-001	WTP Platform details

### **Details:**

MPU-RES-003	Reservoir Platform details
MPU-WTP-002	WTP Platform details

### **Standard Details:**

MPU-SDT-001	Bedding
MPU-SDT-002	Air Valve
MPU-SDT-003	Scour Valve
MPU-SDT-004	Isolation Valve
MPU-SDT-005	Thrust Block
MPU-SDT-006	Erosion Protection
MPU-SDT-007	Pipeline Marker
MPU-SDT-008	Road Crossing
MPU-SDT-009	Contract Nameboard

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**PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION**

**FOR**

**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE  
(MIG)**

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**MANAGED ON BEHALF OF**



**HARRY GWALA DISTRICT MUNICIPALITY  
(THE "CLIENT")**



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**1. LIST OF ABBREVIATIONS**

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

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**2. DEFINITIONS**

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

**Client:** Harry Gwala District Municipality

**Construction Site:**

Means a work place where construction work is being performed

**Construction Supervisor:**

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

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

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

**Hazard:** Source of or exposure to danger

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

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

**Health and Safety Agent:**

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

**Health and Safety Plan:**

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

**Induction Training:**

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

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

**Regulation/s:**

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

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**Temporary Works:**

Means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction work

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

**3. KEY REFERENCES**

The following key references apply to the specifications:

- Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)
- Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)
- SANS Code 1921-6
- SANS Code 1200

**4. INTRODUCTION**

Harry Gwala District Municipality is responsible for the provision of adequate and reliable potable water and sanitation services within the district and takes cognizance that its current scope of works pose inherent risks to the health and safety of its agents and members of the public.

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

Harry Gwala District Municipality, as the Client and where there is an appointed H&S Agent on its behalf, shall provide a project specific Health & Safety Specification (PSHSS) for the project and provide the Principal Contractor/s making a bid or appointed to perform construction work for the project, or parts thereof.

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

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

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

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

Environmental management shall receive due attention as per the requirements of the Environmental Control Officer (ECO), but will be managed by the ECO directly.

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

The project specific H&S specification (PSHSS) forms an integral part of the Contract, and PCs are required to make it an integral part of their Contracts with Contractors and Suppliers. A PSHSS will be available for each level of Contract and Contractor, and must be complied with.

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

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

No work may commence without written approval of the H&S plan by the H&S Agent, or the responsible person in the Harry Gwala District Municipality.

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

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

**4.3 Requirements at Tender Stage**

Tenderers are required to submit a pre-tender H&S plan with their Tender submission.

The documentation submitted will be used to assess the competence of the tenderer, as required in the CRs, therefore the information submitted needs to be complete and as close as possible to the final product.

Adequate pricing for H&S is required, and the appropriate section in the BoQ is to be completed. Failure to do so could result in the Tender being regarded as non-responsive.

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

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

- A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Occupational Health and Safety Act and its Regulations;
- A valid Letter of Good Standing;
- Detailed technical method statements for approval by the Designer and appropriate risk assessments and safe work procedures for approval by the H&S Agent or Client:
  - Site establishment including:
    - Clearing and grubbing;
    - Exposure of services, power, telecommunication etc.;
    - Arrangements for hoarding, traffic accommodation;
  - Excavating
  - An emergency plan indicating how and where emergencies will be handled
  - Working at heights
  - Appointments of the following: Construction Supervisor; Construction Health and Safety Officer; Risk Assessor; Fall Protection Plan Developer; First Aider.
  - An organogram of the site relationships showing at least the above appointments

Further method statements are to be submitted prior to, and during the project where changes or new work is required, and the approval of the Designer/Client is required before work on that aspect or activity can commence. The H&S Officer is to be included in production planning sessions/meetings to ensure that the appropriate risk assessments, safe work procedures and communication required are available and completed timeously. Penalties will be applied should this not be adhered to, and deemed a serious offence.

## 5. GENERAL REQUIREMENTS

### 5.1 Summary of Risks identified during Design

The intention of the summary of findings from the design risk assessment is to highlight the residual risks identified during the design phase. The summary of risks provided is to point the contractor towards some risks he may not be aware of during tendering stage and while developing his formal risk assessments for the project.

The design risks and the management thereof should be included in the Principal Contractors (PC) risk assessments. Where there are other Contractors appointed to do work, the PC is to ensure that Contractors include such information in their risk assessments.

The Contractor is herein advised that no other residual risks remain which the designers judged as significant and unusual other than those risks that a competent Contractor can reasonably be expected to know or deduce from the documents prepared for this project and supplied to them.

### 5.2 Specified Hazardous Chemical Substances

The following lists of products or substances are those which have been identified as likely to be used on the project. This list is not inclusive and other products may be considered. Where the PC

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is likely to supply the product as the product has not been specified, material safety data sheets (MSDSs) need to be considered prior to all selections.

PRODUCTS or SUBSTANCES	POTENTIAL HEALTH OR OTHER RISKS
Cement	<ul style="list-style-type: none"><li>• Hand mixing may occur, 50kg bags are an ergonomic risk from handling.</li><li>• Pumping of concrete may produce extensive vibration, extended hours of work, and potential eye, skin and respiratory irritant from dust exposure, chromates.</li></ul>
Cement/Silica dust	Caused by cutting, grinding, sanding of any concrete/granite/tiled surface/masonry resulting in occupational respiratory health illness or disease
Petrol/diesel/lubricants	Potentially a fuel bowzer on site. Fire, spillage, fumes
Adhesives	Used as a bonding agent and may result in contact Dermatitis and occupational respiratory illness or disease from prolonged exposure
Plaster/mortar/screeds	Contact with products may result in Dermatitis and occupational respiratory illness or disease from prolonged exposure
Sealants/joint fillers	Contact with products may result in Dermatitis and occupational respiratory illness or disease from prolonged exposure
Welding fumes	Inhalation of fumes may result in occupational respiratory illness or disease from prolonged exposure
Lime	The product is classified an irritant, irritating the respiratory system, skin and risk of serious damage to eyes. In contrast to the powder itself, the product, when diluted with water, can produce severe skin damage in humans, ( <i>alkaline burns</i> ), especially if prolonged skin contacts takes place.
Paints	Contact with different paints may result in Dermatitis and occupational respiratory illness or disease from prolonged exposure

## 6. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

### 6.1 Structure and Organization of H&S Responsibilities

#### 6.1.1 Notification of Commencement of Construction Work

The Client shall notify the Provincial Director of the Department of Labour (DoL) in writing, in the form of the Annexure 1 in the CRs for all projects requiring a work permit in terms of CR 3.

The PC who intends to carry out any construction work other than work noted in CR 3 shall notify the Provincial Director in writing in the form of the Annexure 2. This shall occur after the award of the contract, but before commencement of construction work. Proof of submission and/or receipt

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must be provided and kept in the H&S file. Work will not commence without the Notification being correctly completed and signed by the Client and proof of receipt by the Department of labour received. The Notification shall only be signed by the Client following the approval in writing by the H&S Agent, or the Client.

Where changes to the conditions given in the submission are required (i.e. Contractors, completion dates, increase in workers), a revised Annexure 1/2 must be submitted to the Department of Labour. The completion date is to include the defect and liability period. A copy of the notification form and any further submissions/correspondence must be kept in the H&S file.

#### **6.1.2 Health and Safety Plan Framework**

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

The current legislative requirements, SANS codes and any other standards that may guide practice are to be taken into consideration. The following aspects must be addressed in the H&S Plan as they play a role in reducing the overall risk of a particular activity, or section of the project. The H&S Agent may from time to time request additions or systems as they relate to the works or legislative requirements at the time.

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

- The positions of site offices of all Contractors, toilets, drinking water and worker rest areas;
- Indicate the positions of emergency personnel and equipment (fire, first aiders, first aid posts);
- Protection of plant and pedestrians, indicate parking, and
- Storage areas (materials and equipment, waste etc.)
- Access and egress to site for deliveries and intended temporary traffic management
- Emergency assembly point

Such layouts are to be updated regularly throughout the project.

#### **6.1.3 Appointment of Competent Site Personnel**

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

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

All construction/technical method statements are to be generated by senior site personnel, and the appropriate risk assessments developed therefrom in conjunction with the H&S Officer.

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



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#### 6.1.4 Construction Supervision

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

Curriculum Vitae (CVs) are to be submitted for approval by the Designer, and/or Client. The Supervisor will be held responsible for the safety of working teams and subordinates, housekeeping and stacking and storage of materials.

#### 6.1.5 Construction Health and Safety Officer

The PC will employ at least one competent, full-time or part time H&S Officer for the duration of the contract depending on the nature of the hazards on site and subsequent risks. The H&S Officer's CV is to be submitted for approval by the H&S Agent or the Client, at time of tender. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. mobile phone, computer and internet access, vehicle etc.) Qualifications shall include at least Grade 12, SAMTRAC/NEBOSH/Diploma in H&S qualifications or similar together with additional appropriate short courses (ie. Fall Protection Developer, Risk Assessor, Basic Firefighting and First Aider Level 1) with exposure to civil engineering and building that is appropriate given the level of project complexity and registration with SACPCMP. An in-depth knowledge of legislative requirements and the application thereof is required. The site supervisor may not act as the H&S Officer.

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

- Senior site staff and supervision, Contractors are to follow systems, instructions etc. given by the H&S Officer at all times;
- No new workers or Contractors may commence work without approval or following the H&S plan as submitted, and
- No inductions of Contractor staff until the H&S documentation is approved by the H&S Officer.
- The H&S Officer/s may not be removed or replaced without the approval of the H&S Agent, nor may the site be left unattended for more than 1 day without adequate, competent cover.

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

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

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

#### 6.1.6 Traffic Safety

The H&S Officer will be responsible for ensuring that daily traffic management is adequately managed and additional care must be taken where workers and public interface.

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

Tenderers must indicate in their OHS plans what type of transport is envisaged and how this will be managed.

Penalties will be issued for non-compliances noted.

**6.1.7 Health and Safety Representatives and H&S meetings**

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

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

Minutes are to be kept for all H&S interventions and meetings. Failure to do so will be deemed to be a moderate offence.

**6.1.8 Appointment of Competent Contractors**

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

The following minimum aspects are applicable to any Contractor appointed:

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

The following aspects are applicable to Suppliers or short-term works (surveying, repairs, servicing, deliveries etc). Cognisance is to be taken of the level of risk involved and the H&S Officer is to ensure the level of H&S documentation is appropriate:

- Mandatary agreements in place
- Letter of Good Standing
- Method statements and risk assessments
- Available information relative to:
  - Load testing and registers for cranes or lifting devices
  - Medical certificates of fitness
  - Material Safety data sheets (MSDSs)

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

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**7. GENERAL RISK MANAGEMENT**

**7.1 Health Risks and Medical Surveillance**

The appropriate MSDSs are to be obtained for all products and used to develop the H&S documentation as they relate to the works. Many of the processes may be labour intensive and ergonomic risks are to be noted. All workers (including Contractors) are to be included in the medical surveillance programme.

Workers will be exposed to noise, dust, and physical risks from extended periods of work of a repetitive nature, materials specified and the general nature of the works.

All workers (including those of Contractors) are required to be in possession of a medical certificate of fitness prior to commencing work.

Full medical records are not to be placed in the H&S file. Given the potential health risks the following aspects are to be included in each medical surveillance intervention:

- Full medical, surgical and occupational history;
- Full physical examination of all systems; and
- Referral if required for the management of identified health issues that may affect the worker.

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

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

Failure to do so will be considered a serious offence.

**7.2 Noise Risks**

All plant from plant hire companies (suppliers) or that of the PC is to be compliant with the Noise Induced Hearing Loss Regulations. Plant identified that has not been tested and marked for noise emissions will result in having to be tested at the Contractors or PCs expense. Failure to do so within a reasonable time period will result in such plant being removed from site.

Audiometric testing of all workers is noted as required in the medical surveillance programme for all permanent workers prior to work commencing. Temporary labour working in identified noise areas will require testing if the noise levels are indicated on plant or through processes as greater than 85dB. Audiometry records are to be available in the H&S file.

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

Failure to do so will be considered a serious offence.

**7.3 Emergency Procedures**

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

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

- Appointment of a competent emergency response co-ordinator
  - Site Camp Fire;
  - Public injury, Motor vehicle accidents;
  - Falls from heights;
  - Serious injury to workers (medical or work-related); and
  - Any other major risks identified during risk assessments

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

#### 7.4 First Aiders and First Aid Equipment

At least 1 first aider will be trained to Level 3. First aiders shall be available and accessible on site at all times, and be able to work as a team when responding to any emergency on the project.

Contractors are expected to ensure compliance and provide/manage their own first aiders and equipment. The number of First aiders will be determined by the complexity and exposed risks of the project, not numbers of workers

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

#### 7.5 Fires and Emergency Management

The emergency plan is to include the risk of fire on site and related to any specific activities where gas, welding, cutting etc. occur.

Fire extinguishers will be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. All mobile plant is to have fire extinguishers. Hot work permits are required for any such activities.

#### 7.6 Incident Management and Compensation Claims

All incidents and accidents are to be investigated. All serious incidents involving any form of disabling injury or fatality are to be reported to the Designer /Client /H&S Agent immediately. This shall be confirmed in writing following the incident. Full details are to be included in each site meeting or when the Client visits site. A summary of incidents is to be included in the monthly report.

Failure to comply with emergency provisions will be considered a serious offence, and the operation or project may be stopped if deemed inadequate for the work at the time of assessment or site inspection.

#### 7.7 Personal Protective Equipment (PPE) and Clothing

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

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

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- Hard hats;
- Protective footwear;
- Overalls that ensure worker visibility;
- Eye protection;
- Hearing protection;
- Reflective jackets (no bibs)
- Respiratory protection (minimum of FF2), and
- Any other necessary PPE identified from MSDSs and/or risk assessments.

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

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

Failure to comply will result in penalties being applied.

#### 7.8 Occupational Health and Safety Signage

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

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

- 'Report to site office' 'Warning: Construction Site – Keep out' or similar;
- 'Site office' (if relevant);
- 'hard hat area' or other PPE requirements noted;
- First aid box positions (*including vehicles*); and
- Fire extinguishers.

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

Failure to comply will result in penalties being applied.

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

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

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

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

#### 7.10 Management of Plant and Equipment

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

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

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

Failure to do so will be considered a serious offence.

#### 7.11 Excavations

A procedure for managing excavations is to be provided as an addendum to the H&S plan describing how excavations are to be managed.

Excavation method statements are to be approved by the Designer and associated risk assessments are required. Designs by competent persons are required where ground conditions are deemed to require shoring.

A competent person is to be appointed for managing all excavations. A permit system is to be available and used for all excavations. All equipment and ground conditions are to be checked daily and prior to work commencing.

Excavations should preferably not be open beyond what can be closed daily. Where excavations need to remain open, all excavations are to be properly protected. Adequate stakes with 1m high demarcation and berms/spoil are required to be a safe distance from the edge of the angle of repose. Danger tape may not be used to demarcate excavations. Cognisance is required of the surrounding area and increased levels of protection are required where work is in the vicinity of members of the public.

Work will be stopped and penalties applied to any work in excavations that is not compliant.

#### 7.12 Working at heights

A Fall Protection Plan (FPP) is to be available and supplied as an addendum to the H&S plan. The FPP must be appropriate for the project. Method statements, appropriate risk assessments, safe work procedures and training are to be available prior to work commencing.

Construction drawings shall be required for all temporary structures as they relate to the project. The drawings shall be accompanied by full calculations, design loads and any relevant test results as required by the SANS code, and ensure adequate allowance for the development of appropriate documentation and training. All drawings are to be checked and signed by a competent structural engineer (registered with ECSA).

The focus for working at height shall include fall restraint systems where possible except during assembling or dismantling top components or where it is not deemed safe. The relevant SANS codes are to be applied as they apply to the works and the project, such as:

- SANS 10085
- SANS 50355
- SANS 50361
- SANS 50355

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

- The public are to be protected at all times by way of hoarding, barricading or fencing
- Notices to be posted
- Restrictions or stoppage when weather conditions are deemed hazardous
- Permit system for working at heights
- Prevention of falling tools or equipment
- Link to emergency plan regarding rescue
- All workers are to be in possession of valid certificates of fitness that extend for the duration of the works. Note the requirements in the section relating to medical surveillance.
- Registers and all relevant documentation are to be placed in the H&S file.

Work will be stopped and penalties applied to any work at heights that is not compliant.

#### 7.13 Cranes and lifting equipment

Should any form of lifting device or crane (fixed or mobile) be used during the project for deliveries, moving of supplies or equipment, the appropriate documentation must be made available. Method statements, risk assessments, safe work procedures and training are to be available prior to work commencing. A procedure for managing loads and lifting must be made available as an addendum to the H&S Plan.

#### 7.14 Temporary Works (Scaffolding, support work, formwork)

Temporary works must be properly designed and signed off by a competent person who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Engineer and H&S Agent. Records and registers are to be properly completed and kept in the H&S file. If temporary works are to be erected by a Contractor, this must be notified to the Designer/H&S Agent.

Failure to do so will be considered a serious offence.

#### 7.15 Auditing

Frequency of external auditing by the H&S Agent or Client will be as agreed with the Client and Designer but will at least conform to the requirements of the Construction Regulations. The site will be inspected and the documentation audited relative to the activities and H&S plan. The H&S Officer of the PC must accompany the Client, or the H&S Agent, on all audits and inspections. Not all audits will be, or need be announced.

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

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

The PC will be audited using a template as supplied in the tender document. The audit template will be adjusted from time to time relative to the activities on site. A similar process is to be used by the PC when auditing their Contractors on site. Compliance with legislative requirements and the systems provided by the PC to manage the H&S on site will be measured. Full compliance is required. Time limits for corrective actions will be set and must be adhered to.

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

**7.16 Mechanical installations**

All mechanical installations are to be carried out in conformity with the manufacturer's instructions. Method statements and risk analyses must be compiled for each type of installation. A competent person must be designated to supervise the work.

**7.17 Communication on Site**

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

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

**7.18 Care of Workers on Site (Welfare)**

Adequate toilets, clean, safe drinking water and decent shelter will be afforded workers at all times. Toilets will be within reasonable distance of workers, or placed with each working team in safe, with reasonable privacy. Hand washing facilities will be provided. Arrangements made where existing facilities are shared with existing users must be made in writing and placed in the H&S file.

Failure to ensure compliance will be considered a serious offence.

**7.19 Discipline, Alcohol and Substance Abuse**

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

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

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

**7.20 Electrical Equipment**

In addition to the requirements of the Electrical Machinery Regulations and the General Machinery Regulations any electrical distribution board used for construction work shall be fitted with suitable earth leakage protection. Leads must be properly and firmly connected. Plugs and sockets shall be in good and safe condition.



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All electrical apparatus, other than electrical hand tools, shall have a physical "lock out" system which will prevent any operation other than that authorized by a supervisor. A "lock out" sign shall be displayed when the apparatus is not in use. Method statements and safe work procedures will be required for all work involving electrical apparatus.

**7.21 HIV and AIDS Programme**

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

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

**7.22 Safety Conflict**

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

The PC is legally responsible for ensuring that he conforms to all applicable aspects of the Occupational Health and Safety Act 85/1993 and Regulations (OH&S Act) and other relevant Acts and Regulations. If in dispute with the PSHSS and other legislation the most stringent requirement must apply.

**8. HEALTH AND SAFETY FILE**

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

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

- The PSHSS;
- The H&S Plan and the approval by Client;
- Appointment by Client;
- Mandatary agreement with Client;
- Notification of construction work;
- A record of all working drawings, calculations and design where applicable;
- Detailed list of Contractors with contact details, appointments, Mandatories etc., H&S specifications issued;
- Record of Competencies (CVs) and appointments;
- Training Records;
- Permits;

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- Method statements;
- Risk assessments;
- Safe work procedures;
- Emergency and injury management;
- Material Safety data sheets
- Medical surveillance records;
- Registers; and
- Records of audits, minutes etc.
- Plant lists
- Temporary electrical installations
- Employee records (*who is on site*)

**9. NON-CONFORMANCES**

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

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

<b>Minor: Penalty: R50/count</b>	<b>Medium: Penalty: R500/count and a non-conformance</b>	<b>Severe Penalty: R5000/count, a non-conformance and/or activity stoppage</b>
Non-use of PPE supplied	Toilets not supplied or regularly serviced; lack of drinking water	Contractors working without Health and Safety Plan approval
Non completion of registers for plant and equipment on site	Contractors not audited	Workers transported in contravention of the OHS plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate, approved H&S method statements	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Non-compliance with traffic accommodation requirements: layout or physical conditions
	No monthly OHS report at site meeting to report on	Any serious breach of legal requirements
	No certificates of fitness for workers as required	
	Working without approved method statements	

**9.1 Failure to Comply with Provisions**

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

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

**10. MEASUREMENT AND PAYMENT**

The payment items for Occupational Health & Safety are contained in the Bill of Quantities. The same rules are applicable in respect of the pricing of these items as for every other payment item. Attention is drawn to the Pricing Instructions in this document.

**Item and Unit**

**C.01 Preparation of Contractor's Project Specific Health and Safety Plan. (Lump Sum (L.S))**

The rate for this item must cover all expenses incurred in preparing the Contractor's project specific Health and Safety Plan as required by the Client's project specific Health and Safety Specification in this document.

**C.02 Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Lump Sum (L.S))**

The full amount will be paid in one instalment only when the Client's Agent has verified and approved the following

- (a) The Principal Contractor has notified the Provincial Director of the Department of Labour in writing of the project, Annexure 2 to the Regulations.
- (b) The Principal Contractor has made the required initial Appointments of Employees and Contractors.
- (c) The Client has approved the Principal Contractor's project Health and Safety Plan.
- (d) The Principal Contractor has set up his Health and Safety File.

**C.03 Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Month (Mth))**

The amount shall represent full compensation for that part of the Principal Contractor's general obligations in terms of the Occupational Health and Safety Act and Regulations which are mainly a function of time. Payment will be made when the Client's Agent has verified the Principle Contractor's compliance as part of the audit. This will include the updating and administration of the Health and Safety file.

**C.04 Provision of Personal Protective Equipment (PPE) as listed in the Bill of Quantities. (Number (No))**

The rates for these items shall include for the procurement, delivery, storage, distribution and all other actions required for the supply of PPE to the employees of the Principle Contractor, full or part time, requiring them. Sub-Contractors are responsible for their own costs in this regard. Any items of PPE not included on the list will be paid for only after the PA has agreed to their acquisition.

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Items listed will include, among others which may be noted, are: hard hats, reflective vests, high visibility overalls, protective foot wear, fall arrestor harness, gloves, ear muffs, earplugs and dust masks of appropriate type. Normal items such as standard overalls, waterproof clothing, gum boots and standard workshop safety equipment such as welding masks and goggles will not be paid for.

Payment will be based on the issues register for PPE as kept by the Construction Health and Safety Officer, backed up by paid invoices if requested.

**C.05 Provision of a Full/Part Time Construction Health and Safety Officer (Month)**

The Tender sum shall include for the cost of a Construction Health and Safety Officer on a fulltime or part time basis.

**C.06 Costs of Medical Surveillance (Unit (No))**

This item shall covers all costs in involved in the obtaining of baseline medical examinations of temporary labour, including operators for mobile plant as contemplated in CR 23(d) (ii); for temporary workers and workers exposed to noises at or above the limits given in the Noise-induced Hearing Loss regulations, as stipulated.

Workers in the permanent employ of the Contractor will only be paid for if their certificates require updating.

**C.06 a) Initial (baseline) medical examinations, including audiometric and lung function testing.**

**C.07 Induction Training (Unit (No))**

This item shall cover all costs incurred for the health and safety inductions as set out in Regulation 7 of the Construction regulations and the proof of induction required. Payment will be made on the figures contained in the induction section of the Health and Safety File.

**C.08 Provision of First Aid Boxes. (Unit (No))**

The rate for this item shall cover all costs incurred in the provision and maintaining of first aid boxes.

**C.09 Establishment of noise levels (Unit (No))**

This item shall cover all costs involved in the establishment of noise zones in terms of Regulation 9 of the Noise-induced Hearing Loss Regulations. Where a zone has previously been established for a particular item of plant within the last two years, the test need not be repeated but must be kept valid for the duration of the Contract.

**C.10 Submission of the Health and Safety File. (Lump Sum)**

Expenditure under this item shall be made in accordance with the general conditions of contract.

This amount will be paid only once the Principal Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction. This must be done prior to the issue of a Certificate of Completion

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## ANNEXURE A

### H&S AGENT AUDIT SHEET EXAMPLE OCCUPATIONAL HEALTH AND SAFETY AUDIT DOCUMENT

PROJECT NAME:	
CONTRACT NUMBER:	
HEALTH AND SAFETY AUDIT No:	
CONDUCTED BY :	
DATE :	

#### EXECUTIVE SUMMARY

#### INTRODUCTION AND OVERVIEW

##### Scoring:

The audit has a scoring schedule, which will be used to deem compliance to what is available on site, and what the appropriate systems need to be to match them. The contractor should aim for a score of 3 on each aspect included in the audit. A low score could result in part or all of the work being stopped until compliance is reached.

Scoring schedule	
If the answer is "No" the rating will be 0	
If the answer is 'not applicable' it will be noted as n/a	
If the answer is "Yes" the following ratings are applicable	
1	Requirements partially met and no implementation.
2	Requirements partially met and partially implemented
3	Requirements fully met and partially implemented
4	Requirements fully met and fully implemented
5	Requirements and implementation exceeds expectation

#### Key Abbreviations:

Health and Safety	H&S	Driven Machinery Regulations	DMRs
Occupational Health	OH	Regulations for Hazardous Chemical Substances	RHCSs
Construction Regulations	CRs	Pressure Equipment Regulations	PERs
General Safety Regulations	GSRs	General Administration Regulations	GARs
Explosive Regulations	ERs	South African National Standards	SANS
Noise Induced Hearing Loss Regulations	NIHLs	South African Road Traffic Safety Manual	SARTSM
Facilities Regulations	FRs		

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South African Bureau of Standards	SABS		
Occupational Health and Safety Act	OHSA		

Provide a summary of site inspection, significant findings of the site inspection and the audit.

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CORE LEGAL RECORDS ON SITE:

This list is not conclusive – to be updated monthly relative to works in progress. However the H&S Officer is to be pro-active and pre-empt requirements with the Construction Supervisor (Site Agent). The content will be linked to the physical conditions, processes and activities noted on site, or programme.

ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
1.		Updated project H&S Organogram					
2.	OHSA S. 16 (1) and (2)	CEO and subordinate (if required) • Proof of Competency provided					
3.	CR 8 (1) and (2)	Designation of Construction Manager and Subordinate Person(s) • Proof of Competency provided					
4.	OHSA S. 17; GAR 7	• H&S Representatives appointed • Monthly inspections completed • Representation from Contractors					
5.	OHSA S. 18; GAR 5	• H&S Committee appointed • Minutes on file • H&S representatives reports discussed • Incidents discussed • Signed by Chair • Evidence of minutes noted					
6.	GAR 4	Copy of OH&S Act (Act 85 of 1993) available on site					

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ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
7.	CR 5(U); 7(c)(iv)	Written proof of registration / <b>Letters of good standing</b> available on Site					
8.	OHSA S.37.2	<b>Copy of the Mandatory (S37.2) agreement between the PC and Client</b>					
9.	OHSA S.37.2	<b>Mandatory agreements between PC and contractors</b>					
10.	CR 3(1); 4(1)	<b>Notification to Provincial Director – Annexure 1/2 Available on site</b>					
11.	CR 5(1)(m)  7(1)(b)	<ul style="list-style-type: none"> <li>• Copy of Principal Contractor's Health &amp; Safety Plan Available on request.</li> <li>• Letter of approval from Agent.</li> <li>• Health &amp; Safety File opened and kept on site (including all documentation-required in respect of the OHSA &amp; Regulations)</li> <li>• Available at all times</li> </ul>					
12.	CR 7(1)(b)	<b>Copy of Principal Contractor's Health &amp; Safety File provided to Contractors</b> <ul style="list-style-type: none"> <li>• Letters of approval for each contractor on file</li> <li>• List of Contractors on site</li> <li>• Verified monthly by Agent</li> </ul>					



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ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
13		<p>Copies of technical method statements approved by Designer</p> <ul style="list-style-type: none"> <li>Register available, signed by Designer</li> </ul>					
14	CR 9(1)  OHSA CR 9(3)	<p><b>Risk Assessments:</b></p> <ul style="list-style-type: none"> <li>Up to date and available on site for inspection</li> <li>Review and monitoring programme adhered to</li> <li>Workers trained in risk assessments</li> </ul>					
15	CR9(1)(c)	<p><b>Safe work procedures Procedure</b></p> <ul style="list-style-type: none"> <li>List of available SWPs</li> <li>Workers trained in SWPs</li> <li>Proof of training verified</li> </ul>					
16	OHSA S. 13 CR 7(5)(6)	<p><b>Induction programme available</b></p> <ul style="list-style-type: none"> <li>Proof of induction training available</li> </ul>					
17	CR 6(1)(2)	<p><b>Structural information from Designer:</b></p> <ul style="list-style-type: none"> <li>Geo-science technical report</li> <li>Design loading of the structure</li> <li>Methods &amp; sequence of construction</li> <li>Design risk assessment</li> <li>Amended H&amp;S Specification</li> </ul>					

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ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
		<ul style="list-style-type: none"> <li>Temporary Works Design</li> </ul>					
18	CR 12(1)(3)	<b>Temporary Works</b> <ul style="list-style-type: none"> <li>Appointment of temporary works designer</li> <li>Proof of Competency provided</li> <li>Approved temporary works drawings</li> <li>Temporary work inspection register</li> <li>Competencies of erectors of temporary works</li> <li>Construction method statements</li> </ul>					
19	CR 13(1)(2)	<b>Excavations:</b> <ul style="list-style-type: none"> <li>Competent persons appointed</li> <li>CVs available</li> <li>Depth of excavations on site</li> <li>Shoring in use</li> <li>Registers in line with open excavations noted at site inspection</li> </ul>					
20	CR 13(f) GSR 13A	<b>Ladders:</b> <ul style="list-style-type: none"> <li>Competent person appointed</li> <li>Registers kept</li> <li>Registers for ladders noted on site</li> </ul>					
21	CR 16(1)	<b>Scaffolding: SANS 10085</b> <ul style="list-style-type: none"> <li>Competent Erector(s) and Inspector appointed</li> <li>Proof of Competency provided</li> </ul>					

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ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
22	CR 23	<ul style="list-style-type: none"> <li>• Registers in place</li> </ul> <b>Construction Vehicles:</b> <ul style="list-style-type: none"> <li>• Appointment of competent operators</li> <li>• Plant Management:</li> <li>• Registers on file noting daily inspections</li> <li>• Plant and machine lists available</li> <li>• Inadequacies noted on site</li> <li>• Transportation of workers</li> <li>• Registers for sample of vehicles noted on site</li> </ul>					
23	CR 24	<b>Temporary Electrical Installations and Machinery</b> <ul style="list-style-type: none"> <li>• Competent Person appointed</li> <li>• Proof of Competency provided</li> <li>• Updated weekly installation inspection registers in place</li> <li>• Updated daily inspection registers in place</li> </ul>					
24	CR 25	<b>Flammable Liquids:</b> <ul style="list-style-type: none"> <li>• Competent Person appointed for inspections</li> <li>• Proof of Competency provided</li> <li>• Inspection registers in place</li> </ul>					
25	CR 27, ER 6 GSR 8	<b>Housekeeping, Stacking &amp; Storage Supervisor:</b> <ul style="list-style-type: none"> <li>• Appointed per work area</li> <li>• Proof of Competency provided</li> </ul>					

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ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
26	GSR 2	<ul style="list-style-type: none"> <li>• Include site conditions</li> <li>• Spoil areas</li> <li>• Register available per area</li> </ul> <p><b>PPE:</b></p> <ul style="list-style-type: none"> <li>• included in Risk Assessment</li> <li>• PPE used and enforced</li> <li>• Records of Issue kept</li> <li>• Training to use (Induction)</li> <li>• Registers for condition checks</li> </ul>					
27	RHCSS CR 7; 23 GSR 4	<p><b>Hazardous Chemical Use and Storage</b></p> <ul style="list-style-type: none"> <li>• Competent Person/s appointed</li> <li>• Proof of Competency provided</li> <li>• Risk Assessments include use of HCSs</li> <li>• Register of HCS kept/used on Site</li> <li>• Flammable Store</li> <li>• Bulk diesel storage</li> <li>• Material Safety Data Sheets on file and utilised</li> <li>• Other</li> </ul>					
28	GSR 3	<p><b>Emergency management:</b></p> <ul style="list-style-type: none"> <li>• First aiders available through project</li> <li>• Level 1</li> <li>• First aid boxes through site</li> <li>• Evacuation procedures</li> <li>• Registers available (noted on site)</li> </ul>					

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ITEM	Legal /SPEC Ref	RECORDS TO BE KEPT	SCORE	COMMENTS	By whom	Completion Date	Contractor Close out
29	GAR	<b>Incident Management:</b> <ul style="list-style-type: none"> <li>Emergency co-ordinator appointed</li> <li>Proof of Competency provided</li> <li>Emergency plan appropriate</li> <li>Emergency level included in Risk Assessments</li> <li>Workers trained</li> <li>Incident reports available and complete</li> </ul>					
30	CR 1 (g), 7(B)	<b>Medical Surveillance Programme</b> <ul style="list-style-type: none"> <li>All employee records</li> </ul>					
31	CR 30/ FRs	<b>Welfare Facilities:</b> <ul style="list-style-type: none"> <li>Toilets available where crews are working/clean</li> <li>Clean potable water available</li> <li>Adequate eating facilities</li> </ul>					
32	SANS 1921-6	<b>HIV AND AIDS PROGRAMME</b> <ul style="list-style-type: none"> <li>HIV and AIDS Policy and plan available</li> <li>Condoms available</li> <li>Peer review programme available</li> <li>Ongoing training of workers</li> </ul>					
29.		Other					

RESPONSIBILITY \_\_\_\_\_ SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

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<b>H&amp;S AGENT SIGNATURE:</b>		
<b>PC SIGNATURE:</b>		
<b>DESIGNER SIGNATURE:</b>		
<b>CLIENT SIGNATURE:</b>		

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## ANNEXURE B

### CLOSE OUT REQUIREMENTS

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

Health and Safety close out file requirements include:

- a) Client H&S Specification
- b) Principal Contractor's OHS Plan(s)
- c) Organograms
- d) Legal Appointments
- e) List of all employees employed on a permanent or contractual basis over the duration of the contract
- f) Notification to Department of Labour of commencement of work
- g) Letters of Good Standing for the Project
- h) Full files for all Contractors as well as their close out reports
  - List of Contractors
  - All employees employed on a permanent or contractual basis over the duration of the contract
  - Letters of Approval of Contractors
  - Mandatary Agreements
  - Letters of Good Standing
  - Appointments
- i) Incident Records
- j) Non- Conformance records
- k) Agent's Audits
- l) Method Statements
- m) Risk assessments
- n) Safe work procedures
- o) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended
- p) All drawings for temporary structures (suspended beams/scaffolds etc)
- q) All operating manuals for any systems that require ongoing maintenance
- r) Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)

#### Defect and Liability Period

The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OH&S Agent prior to any work commencing. A copy drawing records for the as-builts are to be placed on file by the Designers once complete.

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## ANNEXURE C

### NON CONFORMANCES

HEALTH AND SAFETY SITE INSPECTION NON CONFORMANCE NO		
<b>AGENT:</b>		<b>PROJECT:</b>
<b>Consultant:</b>		<b>Date and time:</b>
<b>Client</b>		<b>Area:</b>
<b>Contractor:</b>		
ASPECTS NOTED:	COMMENTS:	COMPLETION REQUIRED BY (DATE):
	•	
	•	
	•	
	•	
	•	
<b>PHOTOGRAPHIC EVIDENCE (if available):</b>		
<b>OTHER:</b>		
The following penalties are to be applied:		
<b>Signature of Designer</b>		
<b>Signature of H&amp;S Officer/Site Agent</b>		
<b>Signature: of H&amp;S Agent</b>		



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**ANNEXURE D:**

**CONTRACTORS MONTHLY HEALTH AND SAFETY REPORT**  
(To be submitted by the end of the first week of each month and be available with each audit)

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

H&S Officer

Signature

Date:

Site Agent

Signature

Date:

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**ANNEXURE E**  
RISK ASSESSMENT FORMAT

ACTIVITY	RA No.	Rev No.
CONTRACT	DATE WRITTEN	REVIEW DATE
NAME	WRITTEN BY	REVIEWED BY
SIGNATURE		APPROVED BY

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	S	H	E	RISK EVALUATION	PURE RISK	CONTROLS MITIGATION	EFFECTIVENESS OF CONTROLS	RESIDUAL RISK	RESIDUAL RISK RANKING
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**Severity Criteria**

Weight No	Hazard Description	Environment	Safety/Health
16	Catastrophic	Irreversible ecological damage	Multiple fatalities due to injury or occupational disease
8	Major	Reversible ecological damage with potential long term impact	Fatality or number of disabilities/disabling diseases
4	Moderate	Ecological disturbance, can be rehabilitated	Disabling injury or occupational illness
2	Minor	Short-term ecological impact. Requires intervention	Minor injuries or exposure requiring medical attention
1	Insignificant	Low impact, natural rehabilitation	First Aid treatment required

**Frequency Criteria**

Weight No	Hazard Description	Frequency
1	Rare	Less than once every 2 years
2	Infrequent	Every 15 years
3	Frequent	Multiple times per year
4	Often	Monthly
5	Consistent	Weekly/Daily

**Exposure Criteria**

Weight No	Hazard Description	Environmental Exposure	Safety/Health Exposure
1	Minimal	Incident site	A few of the workforce minimal time
2	Restricted	Localised	A few of the workforce, some of the time/some of the workforce minimal time
3	Local	Construction Site Wide	Some of the workforce, some of the time
4	Widespread	Immediate neighbours	Most of the workforce, some of the time/some of the workforce most of the time
5	Extensive	Community exposure	Most of the workforce, most of the time

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**ANNEXURE F:**

**TYPICAL BILL OF QUANTITIES FOR OCCUPATIONAL HEALTH AND SAFETY**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
C.01	Preparation of the Contractor's site specific Health and Safety Plan	lump sum			
C.02	Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	lump sum			
C.03	Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	month			
C.04	Provision of Personal Protective Equipment (PPE)				
	(a) Reflective vests	No			
	(b) Hard hats	No			
	(c) Protective foot wear	No			
	(d) Earplugs	No			
	(e) Dust masks	No			
	(f) Gloves				
	(h) Ear Defenders SABS approved	No			
C.05	Provision of a full time Construction Health and Safety Officer	month			
C.06	Cost of medical certificates and medical surveillance				

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	(a) Initial (baseline) medical examinations	prime cost (PC) sum		
	(b) Periodic and exit examinations	prime cost (PC) sum		
	(c) Contractor's charges to allow for handling costs and profit in respect of sub items 13/X.06 (a) and (b)	%		
C.07	Induction training	No		
C.08	Provision of First Aid Boxes to GSR requirements	No		
C.09	Noise monitoring			
	(a) Establishment of noise zones (plant)	No		
	(b) Audiograms (personnel)	No		
C.10	Submission of a Health and Safety File	lump sum		

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**ANNEXURE G**

**HARRY GWALA DISTRICT MUNICIPALITY**

**HEALTH AND SAFETY (H&S) PRE-TENDER REPORT**

Tenderers are required to submit a pre-tender H&S plan with their Tender submission.

The following requirements were set in the tender documentation and have been utilized to assess the completeness of the documentation presented with the submission of tenders. These requirements fulfil the requirements of the Client in terms of the Construction Regulations, Regulation 5(1)(h). They are to be read in addition to the Act and Regulations but are not a substitute for them.

The documentation submitted will be used to assess the competence of the tenderer, as required in the CRs, therefore the information submitted needs to be complete and as close as possible to the final product.

The following scores have been used to determine compliance with the pre-tender requirements:  
Scoring as follows:

**Not supplied or not adequate                    0**  
**Supplied and complete                            1**

If the tenderer has not completed any projects then Items 4 and 5 need not be supplied. A letter to this effect must be attached.

***Tenderers are required to achieve a minimum of 10 out of a total of 17 for their tenders to be considered.***

<b>Legal or Specification Reference</b>	<b>Pre-Tender Requirement H&amp;S</b>	<b>Tenderers Response</b>	<b>Max Score</b>	<b>Actual Score</b>
Construction Regulations (CRs) 7(1)	1. A project specific H&S Plan in line with this project specification which will support the CRs, therefore the information submitted needs to be complete and as close as possible to the final product. See check sheet		1	
CRs 5(1)(g)	2. Adequate pricing for H&S is also required, and the appropriate section in the BoQ is to be completed. Failure to do so could result in the Tender being regarded as non-responsive.		1	
CRs 5(1)(h)	3. A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Construction Regulations 2014;		1	

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	4. At least one copy of minutes of previous Occupational Health and Safety Committee meetings;		1	
	5. Incident Investigation Reports for other projects of a similar nature undertaken by the tenderer		1	
CRs 9(1)(b)	6. Detailed technical method statements for approval by the ER and for approval by the H&S Agent:  a. Site establishment; b. Clearing and grubbing; c. Construction of offices and accommodation, and d. Proposed site layouts		1 1 1 1	
CRs 9(1)	7. Appropriate risk assessments:  a. Site establishment; b. Clearing and grubbing; c. Construction of offices and accommodation, and d. Proposed site layout		1 1 1 1	
CR 9(1)	8. Appropriate safe work procedures a. Site establishment; b. Clearing and grubbing; c. Construction of offices and accommodation, and d. Proposed site layouts		1 1 1 1	
	<b>FINAL SCORE</b>		<b>17</b>	

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE

CONTRACT No: HGDM 774/HGDM/2021

**ANNEXURE H**

**TENDER STAGE OHS PLAN EVALUATION**

Tenderers will be scored on their response to various facets of the Health and Safety Specification in the Tender Document. Failure to achieve a score of 60 % will render the tender non-responsive				
Proof of the evaluation must be given under the remarks column				
1	<b>General</b>	Is the Specification Project Specific? If not then score is 0.		
	<b>Scoring</b>	Response present and satisfactory	1	
		Not present	0	
OHS Act/regulation	Specification Section	Description	Max Score	Score
8(1)	6.1.4	Construction supervisor	1	
8(6)	6.1.5	Construction Health and Safety Officer	1	
	7.1	Health Risks and Medical Surveillance		
NIHLR	7.2	Noise Risks	1	
	7.3	Emergency Procedures		
GSR 3	7.4	First Aiders and First Aid Equipment	1	
CR 27	8	Fires and Emergency Management	1	
GAR 8	7.6	Incident Management and Compensation Claims	1	
GSR 2	7.7	Personal Protective Equipment (PPE) and clothing	1	
GSR 2B	7.8	Occupational Health and Safety Signage	1	
CR 7 (5)(6)	7.9	Induction of Employees and Visitors, General H&S Training	1	
CR 23	7.10	Management of plant and equipment	1	
CR13	7.11	Excavations	1	
CR 10	7.12	Working at Heights	1	
CR 8	7.12	Fall protection plan	1	
CR 24	7.13	Cranes and lifting equipment	1	
CR 12	7.15	Temporary works	1	
CR5(1)(0)	7.18	Auditing	1	
DMR/GMR	7.19	Mechanical installations	1	
OHSA 8(2)(j)	7.20	Communication on Site	1	
CR 30	7.21	Care of Workers on Site (Welfare)	1	
	<b>Additional requirements</b>			
	6.1.3	Declaration of competency	1	
Cr 9 (1)		Method statements (SWPs)		
		a) Site Establishment	1	
CR5(1)(g)		Has pricing for OHS been allowed for?	1	
		<b>TOTAL SCORE</b>	24	
		<b>TOTAL PERCENTAGE</b>		

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
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If a section is not applicable then it must be deleted from the score sheet and the total score reduced.



**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**CONTRACT No: HGDM 774/HGDM/2021**

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**ANNEXURE I**

**AGREEMENT IN TERMS SECTION 37.2 OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993 (ACT NO. 85 OF 1993)**

THIS AGREEMENT is made at \_\_\_\_\_ on this the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ between HARRY GWALA DISTRICT MUNICIPALITY (*hereinafter called "the Client"*) of the one part, herein represented by \_\_\_\_\_ in his capacity as \_\_\_\_\_ and delegate of the Client in terms of the Client's standard powers of delegation.

and

---

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

\_\_\_\_\_ in his capacity as \_\_\_\_\_

and being duly authorised by virtue of a resolution appended hereto as Annexure A.

WHEREAS the Client is desirous that certain works be constructed, viz **CONTRACT NO.** \_\_\_\_\_, and has accepted a tender by the Mandatary for the construction, completion & maintenance of such works and whereas the Client 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 as updated);

**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 determined in terms of the Form of Offer and Acceptance, or other date decided upon, in the Contract Data, to either:
  - a) The date of the final certificate issued or as contained in this Volume \_\_\_\_\_ of the contract documents pertaining to this Contract, or
  - b) The date of termination of the Contract;
- 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 as updated), 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 clients to their employees;
    - ii. Section 9: General duties of clients and self-employed persons to persons other than employees;

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**CONTRACT No: HGDM 774/HGDM/2021**

- iii. Section 10: General duties of manufacturers and others regarding articles and substances for use at work;
  - iv. Section 37: Acts or omissions by employees or Mandatories, and
  - v. Sub-section 37(2) relating to the purpose and meaning of this Agreement.
- b) The Contractor shall ensure that he familiarises himself with the requirements of the Clients health and safety specification developed for the project, and that he, his employees and any other Contractors employed during the project comply with them. The Contractor shall ensure that all health and safety documentation required as part of the health and safety plan is maintained for the duration of the project.
- 4 In addition to the requirements of conditions of contract (as amended by the Contract Data of the contract documents pertaining to this Contract), the Mandatary agrees to execute all the works forming part of this Contract and to operate and utilize all machinery, plant and equipment in accordance with The Act.
- 5 The Mandatary is responsible for the compliance with the Act by all his Contractors, whether or not selected and/or approved by the Client.
6. The Mandatary warrants that all his own and his Contractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 as amended, 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 Client upon signature of the agreement.
7. The Mandatary undertakes to ensure that he and/or subcontractors and/or their respective clients 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 Client. 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 Client.
  - 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 Client. The Client must further be provided with copies of all written documentation relating to any incident.
  - c) The Client hereby obtains an interest in the issue of any formal enquiry 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 Contractors.
  - d) The Mandatary shall conduct such risk assessments, method statements and safe work practices as may be necessary during the course of the contract and shall ensure that all staff are informed of these. Proof of this shall be placed in the project Health and Safety file.
  - e) Adherence to the Contractor's Health and Safety plan must be enforced including the application of penalties for non-conformance as set out in the Client's Health and Safety Specification.

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE**

**CONTRACT No: HGDM 774/HGDM/2021**

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 CLIENT: - \_\_\_\_\_**

**WITNESS SIGNED: - 1. \_\_\_\_\_ 2. \_\_\_\_\_**

**NAME (IN CAPITALS) 1. \_\_\_\_\_ 2. \_\_\_\_\_**

**SIGNED FOR AND ON BEHALF OF THE MANDATARY: - \_\_\_\_\_**

**WITNESS SIGNED: - 1. \_\_\_\_\_ 2. \_\_\_\_\_**

**NAME (IN CAPITALS) 1. \_\_\_\_\_ 2. \_\_\_\_\_**

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 600KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**HGDM 774/HGDM/2021**

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**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)**

**CONTRACT No: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RECTICULATION AT MPUMULWANE VILLAGE**

**PART C4: SITE INFORMATION**

**INDEX**

<b>PART C4: SITE INFORMATION .....</b>	<b>SI 2</b>
1.1 <b>Locality Plan .....</b>	<b>SI 2</b>
1.2 <b>Conditions on Site: Geotechnical Report .....</b>	<b>SI 2</b>

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RECTIFICATION  
AT MPUMULWANE VILLAGE**

HGDM 774/HGDM/2021

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**PART C4: SITE INFORMATION**

**1.1 Locality Plan**

A locality plan is included as part of the pack of drawings in Part C5: Site Drawings to this tender document.

**1.2 Conditions on Site: Geotechnical Report**

Subsoil investigations on the reservoir site have been conducted.

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE**

**HGDM 774/HGDM/2021**

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**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)**

**CONTRACT No: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND  
RETICULATION AT MPUMULWANE VILLAGE**

**PART C5: DRAWINGS**

**INDEX**

**PART C5: DRAWINGS..... D1**

**SEE SEPARATE BOOK OF DRAWINGS**

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT  
MPUMULWANE VILLAGE**

**HGDM 774/HGDM/2021**

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**PART C5: DRAWINGS**

The drawings issued to tenders as part of the tender documents must be regarded as provisional and preliminary for the tenderer's benefit to generally assess the scope of work. The drawings are issued as a separate book of drawings.

The work shall be carried out in accordance with the latest available revision of the drawings approved for construction (AFC)

At commencement of the contract, the Engineer shall deliver to the Contractor copies of the AFC drawings and any instructions required for the commencement of the works. From time to time thereafter during the progress of the works, the Engineer may issue further drawings for construction purposes as may be necessary for adequate construction, completion, and defects correction of the works.

All drawings and specifications and copies thereof remain the property of the Employer, and the Contractor shall return all drawings and copies thereof to the Employer at the completion of the contract.

**Tender drawings are issued separately.**

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RETICULATION AT MPUMULWANE VILLAGE**

**HGDM 774/HGDM/2021**

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**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO – MPUMULWANE VILLAGE (MIG)**

**CONTRACT No: HGDM 774/HGDM/2021**

**CONSTRUCTION OF 500KL STEEL TANK RESERVOIR, TREATMENT PACKAGE PLANT, AND RECTICULATION AT MPUMULWANE VILLAGE**

**PART C4: SITE INFORMATION**

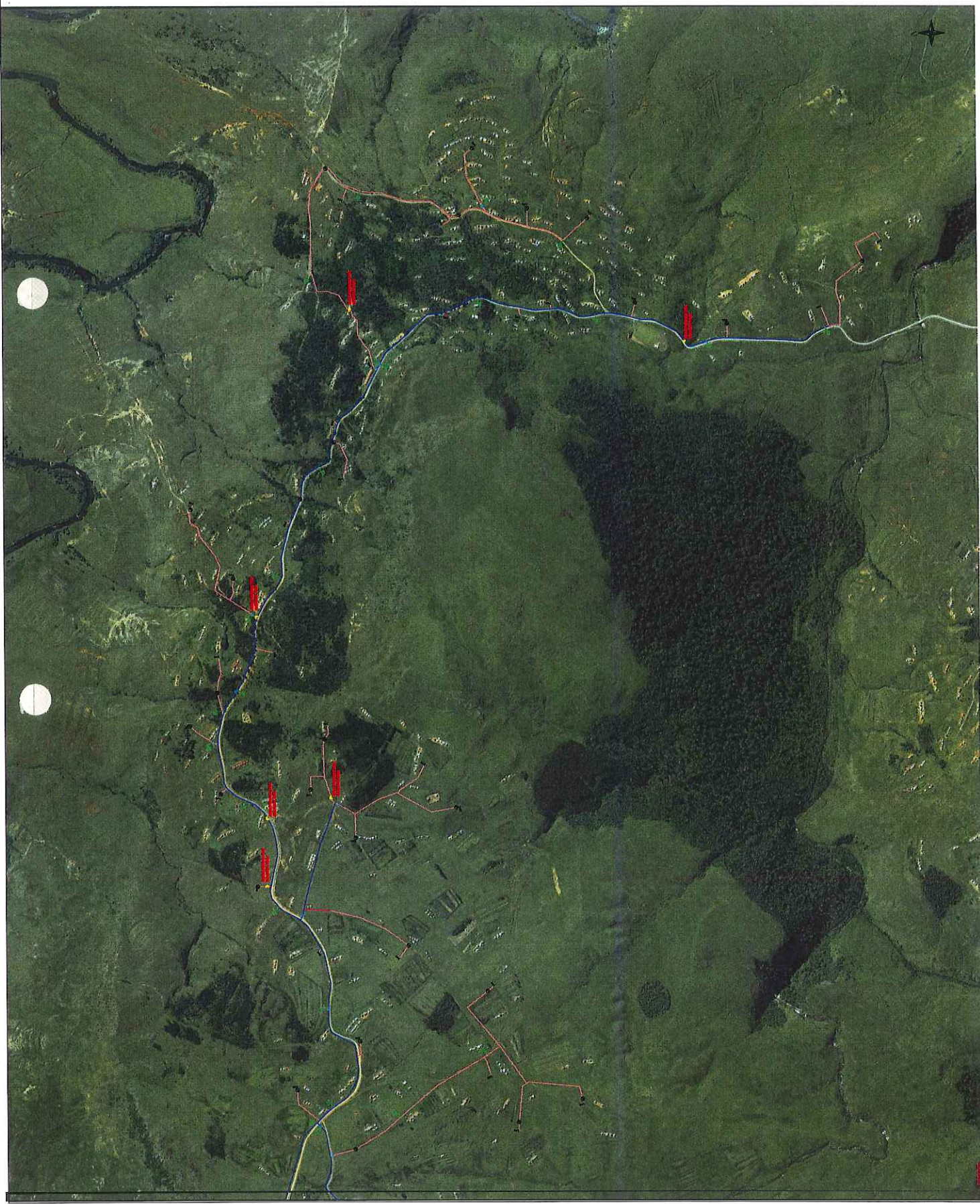
**INDEX**

<b>PART C4: SITE INFORMATION .....</b>	<b>SI 2</b>
1.1 Locality Plan .....	SI 2
1.2 Conditions on Site: Geotechnical Report.....	SI 2









DRAWING ISSUED FOR

**REVISIONS**

NO.	DATE	DESCRIPTION
1	2023/07/21	1. ISSUED FOR TENDER

**LEGEND**

- SCOUR VALVE
- AIR VALVE
- STAND PIPE
- ISOLATION VALVE
- BREAK PRESSURE TANK
- STORAGE RESERVOIR
- 110mm aPVC PN 12
- 90mm aPVC PN 12
- 63mm aPVC PN 12
- 40mm HDPE PN 12

**CONSULTANT**

**MUTEO CONSULTING**

101 B. B. BOTSWANA ROAD, SUITE 101, BATHAMBA, EAST LUNDA, NORTH WEST PROVINCE, SOUTH AFRICA  
 TEL: 053 932 0202  
 Email: info@muteo.co.za  
 Website: www.muteo.co.za

**CLIENT**

**MAMETSI LOCAL MUNICIPALITY**

**Revision Schedule**

No.	Date	Description
1	2023/07/21	1. ISSUED FOR TENDER

**Discipline**

CIVIL ENGINEERING

**Project**

KHUKHULELA WATER SUPPLY SCHEME - MPUMULWANE RETICULATION

**Description**

MPUMULWANE RETICULATION NETWORK - LAYOUT SHEET 2 OF 2

DESIGNED BY	ENGINEER	DATE	SCALE	PROJECT NO.	ASSEMBLY NO.	REVISED BY	DATE



CLIENT

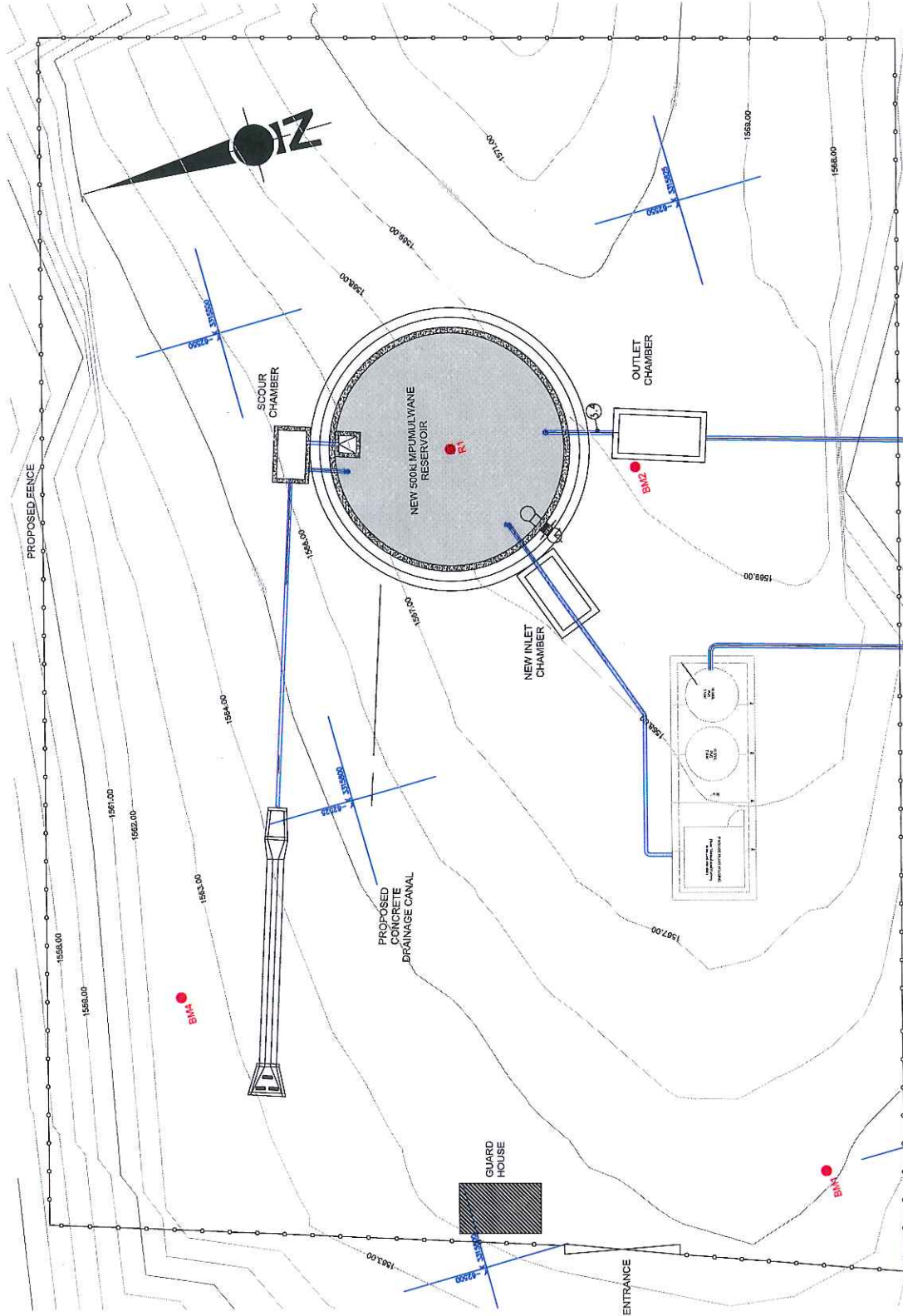
Rev.	Date	By	Description
1	2023/08/11	SALETHI/ST/THORPE	ISSUED FOR TENDER

Discipline  
 CIVIL ENGINEERING

Project  
 KHUKHULELA WATER SUPPLY  
 SCHEME - MPUMULWANE  
 RESERVOIR & WTP

Description  
 GENERAL LAYOUT OF NEW  
 500 KL RESERVOIR & WATER  
 TREATMENT PLANT

COORDINATE	SPACING	CONTRACT
EASTING	1:1000	100000
NORTHING	1:1000	100000
DATE	SCALE	PROJECT NO.
2023/08/11	A4	100000
DRAWING NUMBER	REVISED BY	DATE
100000	SALETHI/ST/THORPE	2023/08/11



BENCHMARKS AND SETTING OUT DATA (Lo29)

NAME	YLo	XLo	Elevation
BM1	62499.937	3315816.545	1565.130
BM2	62535.239	3315826.822	1569.500
BM3	62563.673	3315820.116	1571.690
BM4	62538.764	3315817.753	1562.540
R1	62538.764	3315817.753	—



No.	Date	Description
1	2018.05.11	ISSUED FOR TENDER

CLIENT

Project: **CIVIL ENGINEERING**

Project: **KHUKHULELA WATER SUPPLY SCHEME**

Description: **RESERVOIR PLATFORM DETAILS**

DESIGNER	DRAWN	CHECKED	DATE
DATE	SCALE	PROJECT FILE	REVISION
DESIGNED DRAWN	APPROVED	DATE	NO.

PROPERTY

COPY RIGHT RESERVED

**1. GENERAL NOTES**

- 1.1. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 1.2. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 1.3. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 1.4. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 1.5. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

**2. F.C. CONSTRUCTION**

- 2.1. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.2. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.3. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.4. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.5. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.6. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.7. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.8. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.9. The concrete shall be cast in accordance with the approved concrete mix design.
- 2.10. The concrete shall be cast in accordance with the approved concrete mix design.

**3. FOUNDING**

- 3.1. Foundations shall be cast in accordance with the approved foundation design.
- 3.2. Foundations shall be cast in accordance with the approved foundation design.
- 3.3. Foundations shall be cast in accordance with the approved foundation design.
- 3.4. Foundations shall be cast in accordance with the approved foundation design.
- 3.5. Foundations shall be cast in accordance with the approved foundation design.
- 3.6. Foundations shall be cast in accordance with the approved foundation design.
- 3.7. Foundations shall be cast in accordance with the approved foundation design.
- 3.8. Foundations shall be cast in accordance with the approved foundation design.
- 3.9. Foundations shall be cast in accordance with the approved foundation design.
- 3.10. Foundations shall be cast in accordance with the approved foundation design.

**4. ADDITIONAL NOTES**

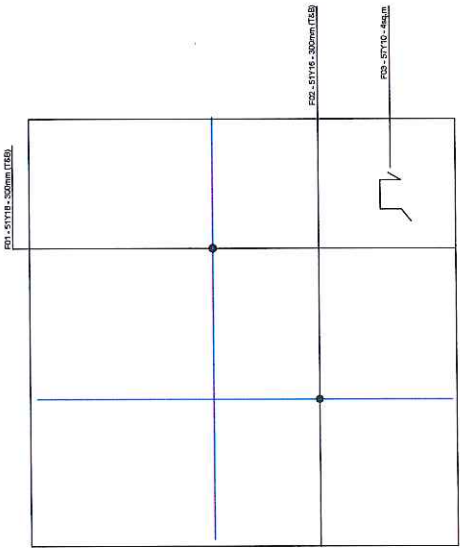
- 4.1. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 4.2. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 4.3. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 4.4. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- 4.5. All work shall be in accordance with the latest edition of the SANS 10400 Part 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

**5. STRUCTURAL STEEL**

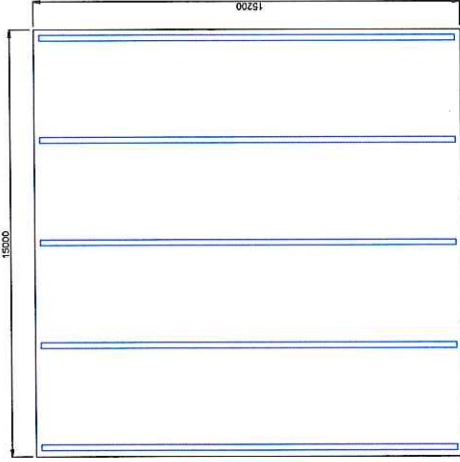
- 5.1. Structural steel shall be in accordance with the approved structural steel design.
- 5.2. Structural steel shall be in accordance with the approved structural steel design.
- 5.3. Structural steel shall be in accordance with the approved structural steel design.
- 5.4. Structural steel shall be in accordance with the approved structural steel design.
- 5.5. Structural steel shall be in accordance with the approved structural steel design.
- 5.6. Structural steel shall be in accordance with the approved structural steel design.
- 5.7. Structural steel shall be in accordance with the approved structural steel design.
- 5.8. Structural steel shall be in accordance with the approved structural steel design.
- 5.9. Structural steel shall be in accordance with the approved structural steel design.
- 5.10. Structural steel shall be in accordance with the approved structural steel design.

**6. COMPLETION CERTIFICATE**

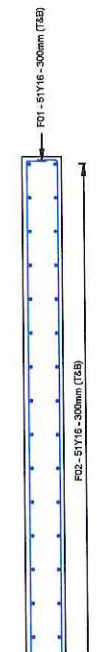
- 6.1. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.2. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.3. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.4. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.5. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.6. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.7. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.8. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.9. The contractor shall submit a completion certificate to the engineer upon completion of the work.
- 6.10. The contractor shall submit a completion certificate to the engineer upon completion of the work.



REINFORCEMENT SLAB BASE - PLAN



CONCRETE SLAB BASE - PLAN



REINFORCEMENT DETAILS - SECTION



FOUNDING DETAILS - SECTION



CLIENT

Rev	Chg	By	On	Description
1			10/07/2010	ISSUED FOR TENDER

Discipline  
**CIVIL ENGINEERING**

Project  
**KHUKHULELA WATER SUPPLY SCHEME**

Description  
**WTP PLATFORM DETAILS**

DATE	BY	FOR	DESCRIPTION
10/07/2010			

CONTRACT NUMBER  
 CONTRACT NUMBER  
 PROJECT NAME  
 PROJECT NAME

COPY RIGHT RESERVED

**1. GENERAL NOTES**

- 1.1. All drawings to be made in accordance with the National Building Regulations and the relevant building codes of practice.
- 1.2. All drawings to be made in accordance with Australian Standards and any discrepancies.
- 1.3. All structural alterations are to be made without amended drawings.
- 1.4. All drawings shall be prepared in accordance with the relevant work instructions.
- 1.5. All workmanship and detailing to be in accordance with the Architect's details and standards.
- 1.6. Construction to ensure that stability of tanks and restrooms are continuously maintained throughout the construction period.

**2. R.C. CONSTRUCTION**

- 2.1. All concrete to be in general in accordance with the Engineer's specifications and approved by the Engineer.
- 2.2. Formwork and construction joints are to be made only with the Engineer's approval.
- 2.3. Reinforcing and supporting to be done only after the blocks of the following times (in days):  
 2.3.1. Formwork: 7 days  
 2.3.2. Reinforcing: 7 days  
 2.3.3. Concrete: 7 days  
 2.3.4. Maximum concrete cover to reinforcement (in mm):  
 Slabs: 25  
 Columns: 30  
 Foundations: 50  
 Retaining walls (earth back): 25  
 Retaining walls (upside down): 25  
 Retaining walls (earth front): 25  
 Retaining walls (upside down): 25
- 2.4. Concrete cover strength <math>f\_{ck}</math> shall be 20MPa.  
 Slabs: 15  
 Columns: 30  
 Foundations: 25  
 Retaining walls: 25
- 2.5. Concrete cover to reinforcement to be provided by the use of other plastic spacers or other approved devices.
- 2.6. All floor levels, unless otherwise indicated, are standard slab levels.

**3. FOUNDING**

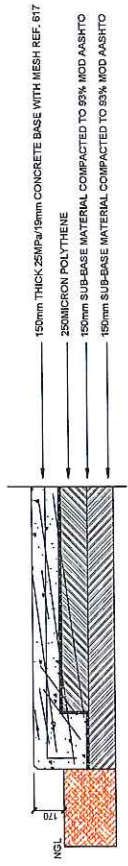
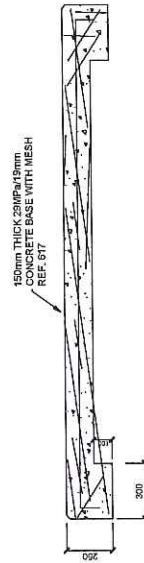
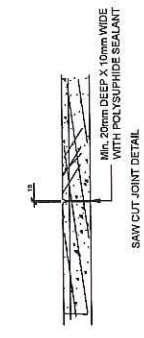
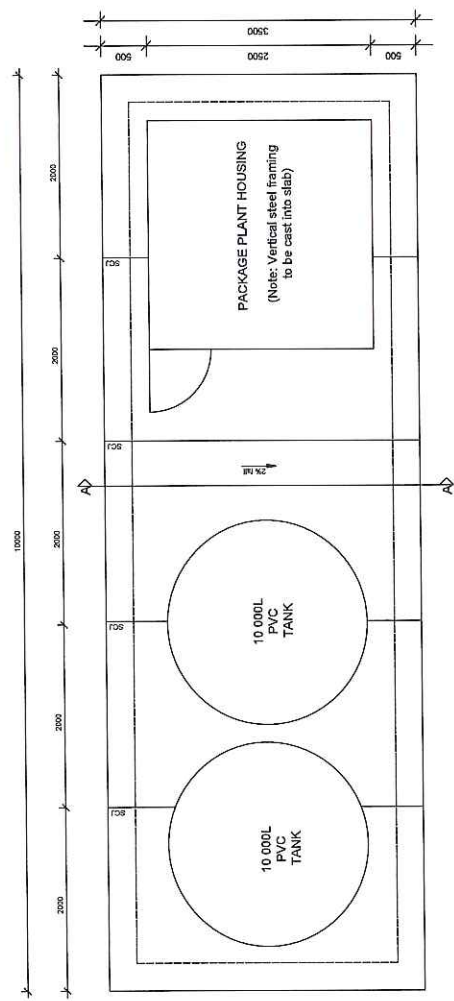
- 3.1. Foundations are to be in accordance with the Engineer's specifications.
- 3.2. Foundations are to be in accordance with the Engineer's specifications and approved by the Engineer.
- 3.3. All foundations are to be in accordance with the Engineer's specifications and approved by the Engineer.
- 3.4. All foundations are to be in accordance with the Engineer's specifications and approved by the Engineer.
- 3.5. All foundations are to be in accordance with the Engineer's specifications and approved by the Engineer.

**4. ADDITIONAL NOTES**

- 4.1. Special attention is to be given to survey of structures. Exact details to be discussed with the Engineer and the project engineer to be confirmed by you in construction.
- 4.2. All work to be carried out in accordance with the National Building Regulations, Environmental and Occupational Health and Safety Act, (and previous acts) and the Building Act, 1993 and the Environmental Protection Act, 1997.
- 4.3. All work to be carried out in accordance with the National Building Regulations, Environmental and Occupational Health and Safety Act, (and previous acts) and the Building Act, 1993 and the Environmental Protection Act, 1997.
- 4.4. All work to be carried out in accordance with the National Building Regulations, Environmental and Occupational Health and Safety Act, (and previous acts) and the Building Act, 1993 and the Environmental Protection Act, 1997.
- 4.5. All work to be carried out in accordance with the National Building Regulations, Environmental and Occupational Health and Safety Act, (and previous acts) and the Building Act, 1993 and the Environmental Protection Act, 1997.
- 4.6. This work will be expected from time to time by the supervising engineer to inspect the site and to ensure that the work is in accordance with the specifications and approved by the Engineer. All work to be carried out in accordance with the specifications and approved by the Engineer.
- 4.7. All work to be carried out in accordance with the National Building Regulations, Environmental and Occupational Health and Safety Act, (and previous acts) and the Building Act, 1993 and the Environmental Protection Act, 1997.
- 4.8. This work will be expected from time to time by the supervising engineer to inspect the site and to ensure that the work is in accordance with the specifications and approved by the Engineer. All work to be carried out in accordance with the specifications and approved by the Engineer.

**5. COMPLETION CERTIFICATE**

- 5.1. No completion certificate shall be issued if all material and construction test results are not submitted to the Engineer.









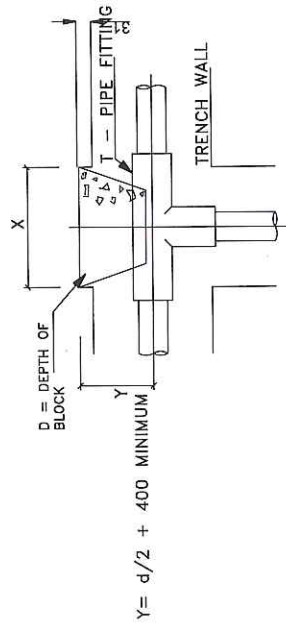




DRAWING ISSUED FOR

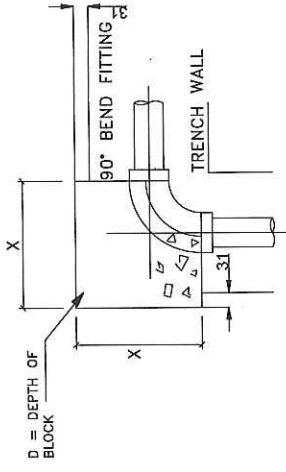
**REDUCER**

1. PURPOSE OF THRUST BLOCK TO BE ON UNDISTURBED GROUND.
2. CONCRETE GRADE 15/18 FOR ALL THRUST BLOCKS.
3.  $d = \text{PIPE } \phi$



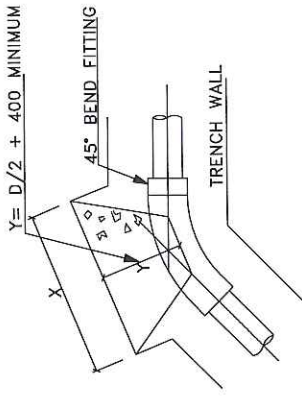
TEE CONNECTION THRUST BLOCK FOR PRESSURE PIPELINE

PIPE $\phi$ (mm)	$D$ (mm)
50	300
75	300
90	300
110	300
160	300



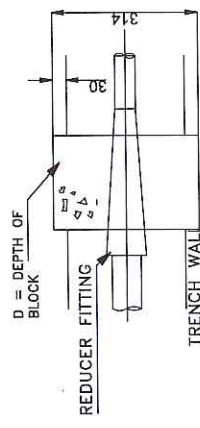
90° BEND THRUST BLOCK FOR PRESSURE PIPELINE

PIPE $\phi$ (mm)	$D$ (mm)
50	560
75	560
90	650
110	730
160	825



45°/22.5° BEND THRUST BLOCK FOR PRESSURE PIPELINE

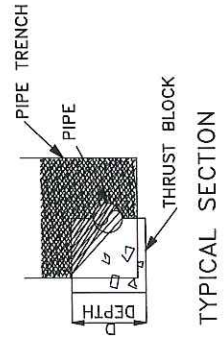
PIPE $\phi$ (mm)	$D$ (mm)
50	300
75	300
90	400
110	500
160	600



REDUCER CONNECTION THRUST BLOCK FOR PRESSURE PIPELINE

PIPE $\phi$ (mm)	$D$ (mm)
90	700
110	700
160	700

THRUST BLOCKS SUITABLE FOR A MAXIMUM INTERNAL PIPE PRESSURE OF 900 kPa



TYPICAL SECTION

**MUTEO CONSULTING**

111, 113 & 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391, 393, 395, 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 445, 447, 449, 451, 453, 455, 457, 459, 461, 463, 465, 467, 469, 471, 473, 475, 477, 479, 481, 483, 485, 487, 489, 491, 493, 495, 497, 499, 501, 503, 505, 507, 509, 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DRIVING ISSUED FOR

TECHNICAL

1. ALL DIMENSIONS IN MILLIMETRES
2. CONCRETE TO BE CLASS 15/19 UNLESS SPECIFIED OTHERWISE
3. COVER TO REINFORCEMENT TO BE 50mm
4. TO SUIT PIPE CLASS 4 600 kPa OR TO SUIT PIPE CLASS 8 1200 kPa
5. ALL THREADS TO ISO STANDARDS
6. ALL BUSHES FITTINGS AND UNIONS TO BE WRAPPED IN "DENSOL MASTIC BLANKET" TAPE
7. ALL STEEL COMPONENTS INCLUDING BOLTS GALVANIZED TO ISO 1461 7 200
8. ENGINEERING DRAWINGS TO BE IN ACCORDANCE WITH THE SOUTH AFRICAN STANDARDS FOR PIPE PRESSURE OVER CLASS 15
9. ALL WELDS TO BE FULL PENETRATION TO SUIT CLASS 15 UNLESS OTHERWISE SPECIFIED. WALL THICKNESS OR WITH A MINIMUM OF 8mm

**MUTEO CONSULTING**

101-103 BENTLEY ROAD  
 101-103 BENTLEY ROAD  
 101-103 BENTLEY ROAD  
 101-103 BENTLEY ROAD

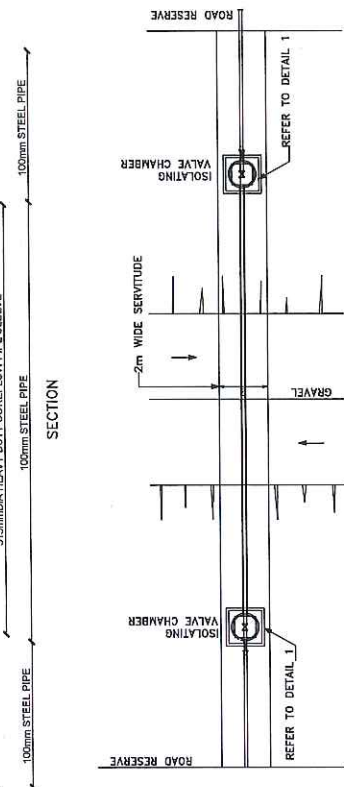
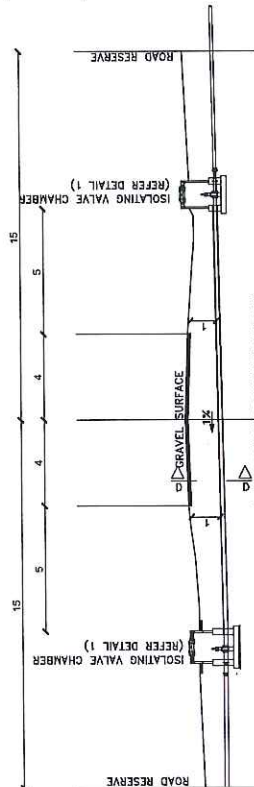
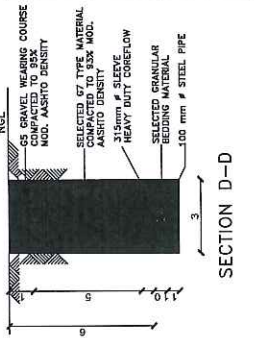


Rev	Date	Description
1	10/01/2019	ISSUED FOR TENDER
2		
3		
4		
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9		
10		

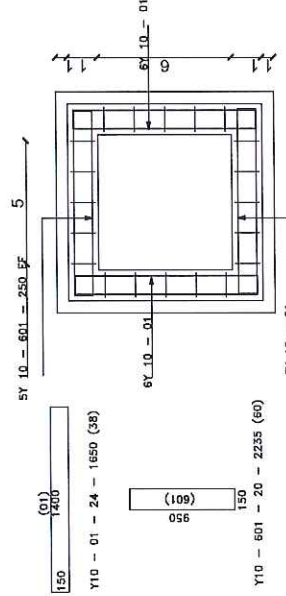
Discipline		CIVIL ENGINEERING
Project		KHUKHULELA WATER SUPPLY SCHEME - MUKULUMANE RETICULATION
Description		ROAD CROSSING DETAILS
DESIGNED BY	APPROVED BY	
DRAWN BY	CHECKED BY	
DATE	SCALE	
PROJECT NO.	PROJECT NAME	
CLIENT	PROJECT	

(ALL SPECIALS TO BE SUITABLE FOR 4 MPa WORKING PRESSURE.)

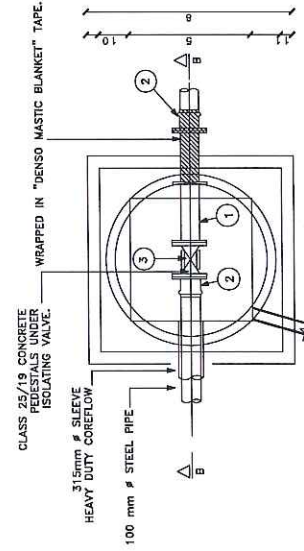
ITEM	Di. (mm)	DESCRIPTIONS	SKETCH OF FITTINGS	No. OF OFF
1	100	GMS PIPE FLANGED BOTH ENDS WITH PUDDLE FLANGE		1
2	100	FLANGED TO GROOVED ADAPTOR		2
3	100	RESILIENT SEAL GATE VALVE CLASS 4D		1



PLAN OF PIPE SLEEVE CROSSING UNDER ROAD



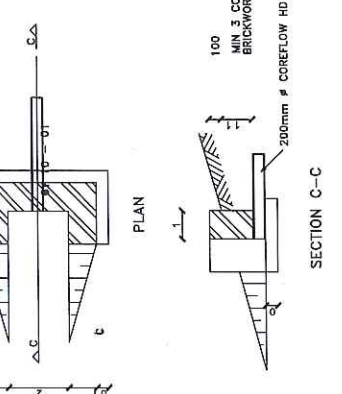
PLAN OF REINFORCING TO CHAMBER BASE



DETAIL 1



SECTION B-B



SECTION C-C

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