

# HARRY GWALA DISTRICT MUNICIPALITY



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

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC  
PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

CONTRACT NO: HGDM 744/HGDM/2021  
TENDER DOCUMENT

**CIDB CONTRACTOR GRADING  
5CE OR HIGHER**

**COMPILED BY:**

Phakathi and Shabane Consulting Engineers  
55 Tunbridge Drive  
Cowies Hill  
3610  
Telephone: 081 726 5913  
Fax: 086 571 1422  
Email: [phakathi.shabane@gmail.com](mailto:phakathi.shabane@gmail.com)

**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

OCTOBER 2021

NAME OF TENDERER	
ADDRESS OF TENDERER	
TELEPHONE	
FAX	
TENDER SUM	

**TENDER CLOSING DATE: 29 October 2021, 12h00**



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

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

HGDM 744/HGDM/2021

**TENDER DOCUMENT CHECKLIST**

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

	<b>ITEMS</b>	<b>CHECKED Tenderer</b>
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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MPUMULWANE VILLAGE (MIG)**

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PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

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T1.1.	Tender Notice and Invitation To Tender	White	TD 2
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>
C1.1	Form Offer and Acceptance	Yellow	CD2
C1.2	Contract Data	Yellow	CD7
C1.3	Form of Guarantee	Yellow	CD11
C1.4	Disclosure Statement	Yellow	CD13
C1.5	Agreement in terms of the Occupational Health and Safety Act No. 85 of 1993	Yellow	CD15
C1.6	Adjudicator's Agreement	Yellow	CD19
<b>PART C2: PRICING DATA</b>			<b>PD1</b>
C2.1	Pricing Instructions	Yellow	PD2
C2.2	Schedule of Quantities	Yellow	PD5
<b>PART C3: SCOPE OF WORK</b>			<b>SW 1</b>
	Scope of Work	Blue	SW 2
<b>PART C4: SITE INFORMATION</b>			<b>SI 1</b>
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<b>PART C5: DRAWINGS</b>			<b>D1</b>

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**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

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	Drawings	Green	D2
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**KHUKHULELA WATER SUPPLY PROJECT PHASE TWO –  
MPUMULWANE VILLAGE (MIG)**

CONTRACT No: HGDM 744/HGDM/2021

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC  
PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**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 744/HGDM/2021

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

#### ADVERTISEMENT

#### BID NOTICE

Bids are hereby invited from qualified and experienced Bidders for the construction of the following Water services project within the Harry Gwala District municipality.

PROJECT NAME	CIDB GRADING	COMPULSORY BRIEFING DATE	TENDER NUMBER	CLOSING DATE
KHUKHULELA WATER SUPPLY PROJECTS PHASE 2- MPUMULWANE: CONSTRUCTION OF 4.65KM RISING MAIN 160-90MM DIAMETER DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES IN MPUMULWANE VILLAGE	5CE OR HIGHER	06 October 2021 at 10:30am Bidders are to meet in municipal Council Chamber then proceed to site	Contract No. HGDM 744/HGDM/2021	29 October 2021 @ 12h00

Only Bidders that have the required CIDB Grading listed on the table above will be considered. Joint Ventures are also eligible to submit Bids provided that every member of the Joint Venture is registered with the 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 immediate disqualification.**

- Central Supplier database registration
- JV Agreement (if applicable);
- A signed MBD4 form must be submitted with all bids ( available on our website or at reception)

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

- Valid tax certificate or 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.

**COLLECTION OF BID DOCUMENTS**

Bid documents may be collected from the **04 October 2021** 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 3939

**Mrs AN Dlamini**  
**Municipal Manager**  
**MUNICIPAL MANAGER**

**HARRY GWALA DISTRICT MUNICIPALITY**

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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.

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



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CONSTRUCTION OF 4.85KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

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	<p>C1.5 Agreement in terms of the Occupational Health and Safety Act No.85 of 1993 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>
<b>F1.3</b>	<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>
<b>F.1.4</b>	<p><b>The Employer's Representative is:</b></p> <p><b>Mr. T Mtshali</b></p> <p>Infrastructure Manager: Water Services Department Harry Gwala District Municipality Tel: +27 39 834 2485 Fax: +27 39 834 2462 Email: mtshalit@harrygwaladm.gov.za</p> <p><b><u>The Employers Agent (also referred to as the Engineer)</u></b> Phakathi and Shabane Consulting Engineers 55 Tunbridge Drive Cowies Hill 3610 Contact Person: Vusi Phakathi</p> <p>Tel: (081) 726 5913 Fax: (086) 571 1422 E-mail: <a href="mailto:phakathi.shabane@gmail.com">phakathi.shabane@gmail.com</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. 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>
<b>F1.5. 1</b>	<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>

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<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>5CEPE 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>5CEPE</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>06 October 2021 <b>Time:</b>10h00</p> </td> <td> <p><b>Location:</b> municipal Council Chamber then proceed to site</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</p>	<p><b>The arrangements for a compulsory briefing/clarification meeting are:</b></p>		<p><b>Date:</b>06 October 2021 <b>Time:</b>10h00</p>	<p><b>Location:</b> municipal Council Chamber then proceed to site</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>	
<p><b>The arrangements for a compulsory briefing/clarification meeting are:</b></p>							
<p><b>Date:</b>06 October 2021 <b>Time:</b>10h00</p>	<p><b>Location:</b> municipal Council Chamber then proceed to site</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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	issued to and tenders will be received only from those tendering entities appearing on the 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>F2.1 2</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>F2.1 3.2</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>F2.1 3.3</b>	The returnable part of the tender offer communicated on paper shall be submitted as an original.
<b>F2.1 3.5</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/744/HGDM/2020</b></p>
<b>F2.1 3.6</b>	A two-envelope system will not be followed.
<b>F2.1</b>	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to

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<b>5</b>	Tender.														
<b>F2.1 6</b>	<b>Tender offer validity</b> The tender offer validity period is <b>twelve (12) weeks (90 days)</b> from the tender closing date														
<b>F2.2 3</b>	<b>Certificates</b> All certificates as listed under Part T2: Returnable Documents														
<b>F3.2</b>	<b>Issue Addenda</b> Change "seven days" to "seven working days".														
<b>F3.4</b>	<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.  The time and location for opening of the tender offers are:  Time: 12H00 Date: 29/10/ 2021  Location: <b>Tender Box, Foyer of Harry Gwala District Municipality Offices, 40 Main Street, IXOPO, 3276</b>														
<b>F3.5</b>	<b>Two-envelope system</b> A two-envelope system will <b>not</b> be followed.														
<b>F3.1 1</b>	<b>Evaluation of tender offers</b>  <b><u>Stage 1 – Price and Preferential Points</u></b>  The tender will be evaluated on the 80/20 Preferential Point System based on an estimated total annual cost of under R 50 million incl. VAT for this project  (a) Price : 80 points (b) B-BBEE status level of contribution : 20 points  <b><u>TOTAL 100 points</u></b>  Proof of a certified B-BBEE certificate must be attached with the tender document to claim the above B-BBEE points.  The quality will comprise scores for the following based on criteria indicated in the respective tender returnable and summarised as follows:  <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>20</td> </tr> <tr> <td>Experience of Key Personnel (Site Agent)</td> <td>15</td> </tr> <tr> <td>Experience of Key Personnel (Foreman)</td> <td>10</td> </tr> <tr> <td>Experience of Bidder with respect to similar projects</td> <td>45</td> </tr> <tr> <td>Financial Capacity</td> <td>10</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)	20	Experience of Key Personnel (Site Agent)	15	Experience of Key Personnel (Foreman)	10	Experience of Bidder with respect to similar projects	45	Financial Capacity	10	<b>TOTAL MAXIMUM POINTS</b>	<b>100</b>
Description	Maximum Allocated Points														
Experience of Key Personnel (Contracts Manager)	20														
Experience of Key Personnel (Site Agent)	15														
Experience of Key Personnel (Foreman)	10														
Experience of Bidder with respect to similar projects	45														
Financial Capacity	10														
<b>TOTAL MAXIMUM POINTS</b>	<b>100</b>														

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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		20	Certified Qualification certificates and Curriculum Vita to be attached with traceable references. Experience must be of water projects
	Less than 4 years' experience	8		
	Between 4-7 years relevant experience in the position.	10		
	8-10 and above years' relevant experience in the position	20		
	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		15	Certified Qualification certificates and Curriculum Vita to be attached with traceable references. Experience must be of water projects
	Less than 4 years' experience	7		
	Between 4-9 years relevant experience in the position.	10		
	10 and above years' relevant experience in the position	15		
	No qualification with minimum of 5 years' experience in the position	7		
	6 and above years' relevant experience in the position	10		
Experience of Key Personnel (Foreman)	1- 3 years' experience in the position	4	10	Curriculum Vita to be attached with traceable references. Experience must be only of civil engineering projects specifically water.
	4-6 years' experience in the position	6		
	7-9 years' experience in the position	8		
	10 and above years' experience in the position	10		
Experience of Tenderer in completed similar projects	0-1 Project	10	45	Appointment letters and Completion Certificates (if subcontracting attach also appointment letter of main contractor).
	2-3 projects	15		
	4-5 projects	20		
	6-7 projects	35		
	More than 8-10	45		
Financial Capacity	Undoubted for the amount of your enquiry	A = 10	10	Rating by bank where account is held
	Good for tender amount quoted	B = 7		
	Average too good for the amount of tender enquiry, if strictly in the way of business	C = 5		

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	Rating below good (D )	E-F = 2		
<p><b><u>Tenderers that score less than 60% of the total score allowed for quality will not be considered further.</u></b></p> <p>The objective of the Harry Gwala District Municipality's B-BBEE policy is to bring about meaningful transformation in the built environment industry through the following:</p> <ul style="list-style-type: none"><li>• Meaningful Economic Participation;</li><li>• Transfer of Technical, Management and Entrepreneurial Skills; and</li><li>• Creation of sustainable Black Enterprises</li></ul> <p><b>Evaluation Criteria</b></p> <p>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.</p> <ol style="list-style-type: none"><li>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.</li><li>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.</li><li>3) Score Bid evaluation points for price and preference points.</li><li>4) Calculate total Bid evaluation points, to two decimal places.</li><li>5) Rank Bid offers from the highest number of Bid evaluation points to the lowest.</li><li>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.</li></ol>				

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<b>F3.1 3.1</b>	<b>Acceptance of tender offer</b> <b>Tender offers will only be accepted if:</b> <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 tenderer has not<ul style="list-style-type: none"><li>i) abused the Employer's Supply Chain Management System; or</li><li>ii) failed to perform on any previous contract and has been given a written notice to this effect; and</li></ul></li><li>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.</li><li>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;</li><li>h) the tender offer is signed by a person authorized to sign on behalf of the Tenderer;</li><li>i) a Tenderer who submitted a tender as a Joint Venture has included an acceptable Joint Venture Agreement with his tender.</li></ul>
<b>F3.1 7</b>	<b>Provide copies of the contracts</b> The number of paper copies of the signed contract to be provided by the Employer is: <b>one (1)</b> .
<b>F3.1 8</b>	The number of paper copies of the signed contract to be provided by the Employer is one original plus one original duplicate.  The additional conditions of tender are as follows:  1. The BBBEE Certificate from an accredited organisation will be used to award preference points.

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### 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

**F1.1.1.** 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.

**F1.1.2.** 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



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- 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 F3.4, the Employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the

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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.

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**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.

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**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.

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- 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.

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**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.

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**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

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- 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:



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- 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

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there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

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

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

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

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

where:  $N_{FO}$  is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;  
 $N_P$  is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.  
 $N_Q$  is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

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

**F.3.11.6 Decimal Places**

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

**F.3.11.7 Scoring Financial Offers**

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

$$N_{FO} = W_1 \times A$$

where:

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

Formula	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:

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

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### 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.

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**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.

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**PART T2: RETURNABLE DOCUMENTS AND SCHEDULES**

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**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
- Tax Clearance Certificate
- 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 OHS Act No 85 of 1993 (Part C1)
- Bill of Materials (Part C2)
- Scope of Work (Part C3)
- Site information (Part C4)
- Drawings (Part C5)

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

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**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES 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 .....

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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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**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 744/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 744/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.*



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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 744/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 744/HGDM/2021** and any contract resulting from it on our behalf.

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<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: .....

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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: .....

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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: .....



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**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>

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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)

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**FORM G: Tenderer's Tax Clearance Certificate**

The Tenderer is to attach his original Tax Clearance Certificate on this page. In the case of a Joint Venture, original copies of Tax Clearance Certificates 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.**



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**FORM H: Tenderer's Financial Standing**

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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°: .....

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

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	enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
iii)	confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
iv)	confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;
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?

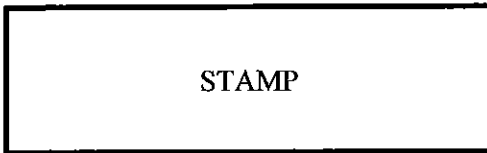
.....  
.....

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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**Stage 1 – Price and Preferential Points**

The tender will be evaluated on the 80/20 Preferential Point System based on an estimated total annual cost of under R 50 million incl. VAT for this project

- (a) Price : 80 points
- (b) B-BBEE status level of contribution : 20 points

**TOTAL 100 points**

Proof of a certified B-BBEE certificate must be attached with the tender document to claim the above B-BBEE points.

The quality will comprise scores for the following based on criteria indicated in the respective tender returnable and summarised as follows:

Description	Maximum Allocated Points
Experience of Key Personnel (Contracts Manager)	20
Experience of Key Personnel (Site Agent)	15
Experience of Key Personnel (Foreman)	10
Experience of Bidder with respect to similar projects	45
Financial Capacity	10
<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		20	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.	10		
	8-10 and above years' relevant experience in the position	20		
	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		15	Certified Qualification certificates and Curriculum Vitae to be attached with traceable references. Experience must
	Less than 4 years' experience	7		
	Between 4-9 years relevant experience in the position.	10		
	10 and above years' relevant experience in the position	15		

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				be on water projects
	No qualification with minimum of 5 years' experience in the position	7		
	6 and above years' relevant experience in the position	10		
Experience of Key Personnel (Foreman)	1- 3 years' experience in the position	4	10	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	6		
	7-9 years' experience in the position	8		
	10 and above years' experience in the position	10		
Experience of Tenderer in completed similar projects	0-1 Project	10	45	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 8-10	45		
Financial Capacity	Undoubted for the amount of your enquiry	A = 10	10	Rating by bank where account is held
	Good for tender amount quoted	B = 7		
	Average too good for the amount of tender enquiry, if strictly in the way of business	C = 5		
	Rating below good (D )	E-F = 2		

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

The objective of the Harry Gwala District Municipality's B-BBEE policy is to bring about meaningful transformation in the built environment industry through the following:

- Meaningful Economic Participation;
  - Transfer of Technical, Management and Entrepreneurial Skills; and
- Creation of sustainable Black Enterprises

**(b) Financial Offer**

The financial offer will be scored using the following formula

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Price Points: 80 Points Maximum

The following formula will be used to calculate the points 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.

<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

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- 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.

#### 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.

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**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.

**NATIONAL TREASURY  
NO. R. 32**

**JANUARY 2017**

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**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;

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



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**“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);

**“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;

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“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.

**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.

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- (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
5	8
6	6
7	4

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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:

<b>BBBEE Status Level Contributor</b>	<b>Number of Points</b>
1	10
2	9
3	6
4	5
5	4
6	3
7	2
8	1
Non-Compliant Contributor	0

(3) A tenderer must submit proof of its B-BBEE status level of contributor.

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(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 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.

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.

(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.

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#### 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-
    - (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.

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**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. ....

**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



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constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);

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

<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: BBBEE Certificate, Company Registration Documents and Other Documents**

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

- BBBEE 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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**CONTRACT No.: HGDM 744/HGDM/2021**

**FORM P: Joint Venture Disclosure Form**

**EMPLOYER** : Harry Gwala District Municipality

**CONTRACT DESCRIPTION** : CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

**CONTRACT NUMBER** : HGDM 744/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 : \_\_\_\_\_

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Postal address : \_\_\_\_\_  
 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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**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 : \_\_\_\_\_



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**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.**

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

**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**

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

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

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

DATE: .....

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**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:** .....

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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:

	<b>Date</b>	<b>Title or Details</b>
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)

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**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>

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---

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

DATE: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/HGDM/2021**

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

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

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/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.

<b>SPECIAL MATERIAL</b>	<b>UNIT*</b>	<b>Rate or Price for the Base Month</b>

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

**DATE:** .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/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 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/HGDM/2021**

**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**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/HGDM/2021**

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**FORM W: UIF Registration Certificate**

*Tenderers to attach copy of UIF Registration Certificate*

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/HGDM/2021**

**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 744/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**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**CONTRACT No.: HGDM 744/HGDM/2021**

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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***

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

**CONTRACT NO: HGDM 744/HGDM/2021**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE  
IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT  
MPUMULWANE VILLAGE**

**PART C1: AGREEMENTS AND CONTRACT DATA**

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**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 744/HGDM/2021**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES 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 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

**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 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

**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.



**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

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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**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

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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**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

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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

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

HGDM 744/HGDM/2021

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

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

	GCC 2015 Clause	
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	Phakathi and Shabane Consulting Engineers
Name of Employers Agent	1.1.1.16	Phakathi and Shabane Consultant Engineers represented by Vusi Phakathi
Address of the Employers Agent	1.2.1.2	Phakathi and Shabane Consulting Engineers 55 Tunbridge Drive Cowies Hill 3610 Email: <a href="mailto:phakathi.shabane@gmail.com">phakathi.shabane@gmail.com</a> Tel: 081 726 5913
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
Special Nonworking	5.8.1	1. Public Holidays

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

HGDM 744/HGDM/2021

	GCC 2015 Clause	
days		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. 3. Sundays
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 R1000.00 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	$x = 0,15$ $a = 0,20$ $b = 0,20$ $c = 0,50$ $d = 0,10$  'L' shall be the "Weighted Average" index , P0141, Table A 'F' shall be the "Fuel (Diesel)" index given in P0142.1 Table 12 for KwaZulu Natal
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	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  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.
Liability of	7	The Contractor shall submit within seven (7) days from date of receipt of the Provisional Letter of Acceptance, to the Head: Supply

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

HGDM 744/HGDM/2021

	<b>GCC 2015 Clause</b>	
Guarantee		<p>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: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

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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

<b>Type of Security</b>	<b>Contractor's Choice</b> (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
.....	

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.85KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

HGDM 744/HGDM/2021

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: .....



**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

**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:

**HARRY GWALA DISTRICT MUNICIPALITY**

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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 the 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: .....

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION AND REFURBISHMENT OF BULK AND RETICULATION PIPELINES AND WATER STORAGE FOR WILLOWDALE AND EKUTHULENI VILLAGES**

**HGDM 710/HGDM/2020**

**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.

**HARRY GWALA DISTRICT MUNICIPALITY**

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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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CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

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

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE  
IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT  
MPUMULWANE VILLAGE**

**CONTRACT NO: HGDM 744/HGDM/2021**

**PART C2: PRICING DATA**

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**PART C2: PRICING DATA**

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**HARRY GWALA DISTRICT MUNICIPALITY**

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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

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### CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

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determine payments to the Contractor. The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities and the quantities certified for payment.

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

#### 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**

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 1 : PRELIMINARY AND GENERAL

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
1,1	SABS 1200 A	<b>SECTION 1 : PRELIMINARY AND GENERAL</b>					
		<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	<b>SCHEDULED FIXED-CHARGE AND VALUE RELATED ITEMS</b>					
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		
	<b>8.3.2.2</b>	<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		
		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		
1.2.14				Sum	1		
		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		
1.2.15				Sum	1		
1.2.16	8.3.4	Removal of Site Establishment		Sum	1		
1,3	8,4	<b>SCHEDULED TIME-RELATED ITEMS</b>					
1.3.1	8.4.1	Contractual Requirements		Month	6		
	8.4.2	Operation and Maintenance of Facilities on Site, for Duration of Construction, except where otherwise stated.					
	<b>8.4.2.1</b>	<b>Facilities for Engineer</b>					
1.3.2		Nameboards (2 No.)		No.			
<b>TOTAL CARRIED FORWARD</b>							



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 CONTRACT No: HGDM 744/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			
1.3.16		Environmental Management Plan Audits.		Prov Sum	1	25 000,00	25 000,00	
	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>						
1.4.1		a) Unskilled Labour		hr	100			
1.4.2		b) Semi-skilled Labour		hr	75			
1.4.3		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	50 000,00	50 000,00	
1.5.2		Percentage adjustment to item 1.5.1 for materials		%		10%	5 000,00	
<b>TOTAL CARRIED FORWARD</b>								

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/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		
1.6.7		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	50 000,00	50 000,00
		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				%		10%	5 000,00
1,8		<b>MASTER LOCKS</b>					
1.8.1		Allowance for the purchase of master locks (invoices to be supplied)		Prov Sum	1	5 000,00	5 000,00
1.8.2		Contractor's markup to item 1.8.1		%		10%	500,00
1,9		<b>SURVEY</b>					
1.9.1		Allowance for any As-Built" survey"		Prov Sum	1	20 000,00	20 000,00
1.9.2		Contractor's markup to item 1.9.1		%		10%	2 000,00
1,10		<b>COMMUNITY LIASON OFFICER</b>					
1.10.1		Allowance for payment of a CLO		Month	4	4 500,00	18 000,00
1.10.2		Contractor's markup to item 1.10.1		%		10%	450,00
1,11	D	<b>BULK EARTHWORKS</b>					
		<b>SCHEDULED EARTHWORKS ITEMS</b>					
1.11.1		Geotechnical investigation as when required or as per the Engineer's instruction		Prov Sum	1	50 000,00	50 000,00
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/PVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 2 : EARTHWORKS SECONDARY BULK (PIPE TRENCHES)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 DB	<b>SECTION 2 : EARTHWORKS SECONDARY BULK (PIPE TRENCHES)</b>					
2,1	8.3.1	<b>SITE CLEARANCE</b>					
2.1.1		Compensation for crops (Provisional)		Prov Sum	1	50 000,00	50 000,00
2.1.2		Percentage adjustment to item 2.1.1.		%		10%	5 000,00
2.1.3	8.2.1	Clear and grub 6.0 width along centre of pipeline route		m	4650		
2.1.4	8.2.3 (a)	Remove 150mm thick topsoil along 2m width, stockpile, maintain and reinstate		m <sup>2</sup>	9300		
2,2	8.3.2	<b>EXCAVATION</b>					
		Excavate in all materials for trenches, backfill, compact and dispose of surplus material, for pipe diameters up to 160mm in the following depth categories :-					
	PSD.1.1						
2.2.1		(a) 0,0 - 1,0 m. (LI)		m <sup>3</sup>	497		
2.2.2		(b) 1,0 - 2,0 m. (machine and including shoring)		m <sup>3</sup>	5420		
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>	379		
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>	402		
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>	398		
2,3	8.3.3	<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>	320		
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>	210		
2,4		<b>EROSION CONTROL BERMS</b>					
2.4.1	PSD.3.1	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)		m	200		
<b>TOTAL CARRIED FORWARD</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.66KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/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>	12		
2.5.2		3m x 1m x 0.3m reno mattress	LI	m <sup>2</sup>	6		
2.5.3	8.2.3	Extra-over Item 2.5.1 for packing selected stone to exposed face. (Where instructed by the Engineer)		m <sup>2</sup>	24		
	8.2.5	<b>CONCRETE ENCASEMENT</b>					
2.5.4		a) 30 Mpa Concrete encasement of pipes below rivers and streams complete including formwork		m <sup>3</sup>	3		
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>	90		
2.6.2		b) Selected fill material		m <sup>3</sup>	645		
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>	90		
2.7.2		b) Selected fill material		m <sup>3</sup>	645		
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>	885		
2.8.2		b) Selected fill material		m <sup>3</sup>	65		
2.8.3		c) 13.2mm stone		m <sup>3</sup>	200		
	1200LB	<b>BACKFILL FROM TRENCH EXCAVATION</b>					
	5.1.4	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					
2.8.4		Backfilling of all secondary bulk pipes		m <sup>3</sup>	2900		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 3 :PRESSURE PIPELINES (RISING MAIN)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
3	SABS 1200 L	<b>SECTION 3 :PRESSURE PIPELINES (RISING MAIN)</b>					
		<b>PIPEWORK</b>					
	8.2.1	Supply, lay and bed pipes complete with couplings - test and disinfect					
3,1		<b>RISING MAIN</b>					
3.1.1		i) 160mm diameter uPVC PN 20		m	1450		
3.1.2		ii) 90mm diameter uPVC PN 16		m	2700		
3.1.3		iii) 150mm diameter steel pipe		m	350		
3.1.4		iv) 100mm diameter steel pipe		m	150		
3,2		<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					
3,3		<b>REDUCERS</b>					
3.3.1		i) 100mm/90mm cast iron reducer		No	1		
3.3.1		ii) 160mm/150mm cast iron reducer		No	1		
3,4		<b>uPVC BENDS</b>					
3.4.1		i) 160mm Ø 45° bend		No	4		
3.4.2		ii) 160mm Ø 22.5° bend		No	10		
3.4.3		iii) 160mm Ø 11.25° bend		No	26		
3.4.4		iv) 90mm Ø 90° bend		No	1		
3.4.5		v) 90mm Ø 45° bend		No	2		
3.4.6		vi) 90mm Ø 22.5° bend		No	4		
3.4.7		vii) 90mm Ø 11.25° bend		No	12		
3.4.8		viii) 150mm Ø 45° bend		No	1		
<b>TOTAL CARRIED FORWARD</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 3 :PRESSURE PIPELINES (RISING MAIN)

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
3.4.9		ix) 150mm Ø 22.5° bend		No	1		
3.4.10		x) 100mm Ø 90° bend		No	1		
3,5	SABS 1200 GA	<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					
3.5.1				m <sup>2</sup>	150		
3,6	8,6	<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' (L).					
3.6.1				No	50		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 4 : AIR VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
4,1	SABS 1200 L	<b>SECTION 4 : AIR VALVES</b> a) 25mm Diameter AV for 90mm to 160mm 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) 80mm diameter GMS pipe 310mm long (Confirm length on site) - flanged both ends (Item 4)		No	10		
4.1.5		v) 90mm Cast iron hydrant tee, flanged all ends (Item 5)		No	5		
4.1.6		vi) 160mm Cast iron hydrant tee, flanged all ends (Item 5)		No	5		
4,2		<b>AIR VALVE CHAMBERS</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
4.2.1		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	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					
4.3.1		<b>TEES</b> 90/160mm diameter		No	10		
4,4		<b>CAST IRON FLANGE ADAPTORS</b>					
4.4.1		90/160mm diameter		No	10		
4,5	8,6	<b>CONCRETE (SMALL WORKS)</b> <b>VALVE MARKERS</b>					
4.5.1		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	10		
<b>TOTAL CARRIED FORWARD FORWARD TO SUMMARY</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 5 : SCOUR VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
	SABS 1200 L	<b>SECTION 5 : SCOUR VALVES</b>					
5,1		a) 80mm Diameter SV for 90mm to 160mm diameter pipe(As per standard drawing)					
5.1.1		i) 80mm diameter Jet disperser (Item 1)		No	7		
5.1.2		ii) 80mm diameter GMS straight pipe flanged one end 1500mm (confirm length on site) (item 2)		No	7		
5.1.3		iii) 45 degree GMS elbow flanged both ends (Item 3)		No	7		
5.1.4		iv) 80mm dia. GMS straight, flanged both ends 1000mm (confirm length on site)(Item 4)		No	7		
5.1.5		v) 80mm diameter Waterworks Gate Valve to SABS 664, class 16 (Item 5)		No	7		
5.1.6		vi) 90mm diameter Cast Iron Hydrant Tee (Item 6)		No	3		
5.1.7		vii) 160mm diameter Cast Iron Hydrant Tee (Item 6)		No	4		
5,2		<b>SCOUR VALVE CHAMBER</b>					
	8.2.13	Valve and Hydrant Chambers, etc					
5.2.1		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	7		
<b>TOTAL CARRIED FORWARD</b>							



HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 5 : SCOUR VALVES

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
<b>BALANCE BROUGHT FORWARD</b>							
5,3	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."					
5,4		<b>ELBOWS</b>					
5.4.1		90mm diameter		No	7		
5,6		<b>GMS PIPES</b>					
5.5.1		90mm diameter		m	21		
5,6		<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, backfill and place markers. All work, including the manufacture of the markers, is to take place on site using labour intensive methods (LI)					
5.6.1				No	7		
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND BOREHOLE INSTALLATIONS AT MPUMULWANE VILLAGE  
 CONTRACT No: HGDM 744/HGDM/2021  
 SECTION 6: BOREHOLES INSTALLATION

ITEM	REF	DESCRIPTION	LIC	UNIT	QTY	RATE	AMOUNT
6,1	9,6	<b>SECTION 6: BOREHOLES INSTALLATION</b> Chlorination					
6.1.1	9.6.1	Line chlorination unit as per the suppliers specification		Prov Sum	1	50 000,00	50 000,00
6,2		<b>Boreholes</b>					
6.2.1		Supply, install, equip 2x Borehole Pumps per specification with manhole(6.5l/s @ 215m & 2.5l/s @ 135m), control panel, electrical connection and all applicable valves for pressure control, including isolation, non-return, scour and all other recommended fittings.		No	2		
6.2.2		Supply and installation of borehole hand pump and stand pipe as instructed by engineer on site		No	1		
6,3		<b>Ancillary Works</b>					
6.3.1		Refurbishment of Existing Infrastructure as per Engineers Instruction		Prov Sum	1	2 500 000,00	2 500 000,00
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>							

**HARRY GWALA DISTRICT MUNICIPALITY; CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE  
CONTRACT No: HGDM 744/HGDM/2021**

**SUMMARY OF BILL OF QUANTITIES**

<b>SECTION 1 PRELIMINARY &amp; GENERAL</b>	<b>R</b>
<b>SECTION 2 EARTHWORKS (SECONDARY BULK PIPE TRENCHES)</b>	<b>R</b>
<b>SECTION 3 MEDIUM PRESSURE PIPELINES (RETICULATION)</b>	<b>R</b>
<b>SECTION 4 AIR VALVES</b>	<b>R</b>
<b>SECTION 5 SCOUR VALVES</b>	<b>R</b>
<b>SECTION 6 BOREHOLES INSTALLATION</b>	<b>R</b>
<b>SUBTOTAL</b>	<b>R</b>
<b>ADD CONTINGENCIES 10%</b>	<b>R</b>
<b>SUBTOTAL</b>	<b>R</b>
<b>VALUE ADDED TAX</b>	
<b>ADD 15%</b>	<b>R</b>
<b>TOTAL CARRIED FORWARD TO FORM OF TENDER ON PAGE C2</b>	<b>R</b>

**SIGNED ON BEHALF OF TENDERER:** \_\_\_\_\_

**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

**SUMMARY OF SCHEDULE OF QUANTITIES**

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>AMOUNT R-c</b>
1	PRELIMINARY AND GENERAL	
2	EARTHWORKS (SECONDARY BULK PIPE TRENCHES)	
3	MEDIUM PRESSURE PIPELINES (RISING MAIN)	
4	AIR VALVES	
5	SCOUR VALVES	
6	BOREHOLES INSTALLATION	
<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: .....

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

HGDM 744/HGDM/2021

**SUMMARY OF SCHEDULE OF QUANTITIES**

SECTION	DESCRIPTION	AMOUNT R-c
1	PRELIMINARY AND GENERAL	
2	EARTHWORKS (SECONDARY BULK PIPE TRENCHES)	
3	MEDIUM PRESSURE PIPELINES (RISING MAIN)	
4	AIR VALVES	
5	SCOUR VALVES	
6	BOREHOLES INSTALLATION	
<b>SUBTOTAL 1</b>		
Add: 10% Contingencies [Use of Contingencies will be approved by Executive Director Infrastructure Services		
Add: 0% Escalation		
<b>SUBTOTAL 2</b>		
Add: 15% VAT		
<b>TOTAL CARRIED TO FORM OF OFFER (Form C1.1 )</b>		

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

HARRY GWALA DISTRICT MUNICIPALITY

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

HGDM 744/HGDM/2021

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

CONTRACT NO: HGDM 744/HGDM/2021

CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC  
PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

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**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

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## HARRY GWALA DISTRICT MUNICIPALITY

### CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE

HGDM 744/HGDM/2021

## 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:

AA	1986	:	GENERAL
AB	1986	:	ENGINEER'S OFFICE
C	1980	:	SITE CLEARANCE (As amended 1982)
DA	1988	:	EARTHWORKS (Small Works)
DB	1989	:	EARTHWORKS (Pipe trenches)
DK	1984	:	GABIONS AND PITCHING
DM	1981	:	EARTHWORKS (Roads and Subgrade)
GA	1982	:	CONCRETE (Small Works)
HA	1990	:	STRUCTURAL STEELWORKS
HC	1988	:	CORROSION PROTECTION FOR STRUCTURAL STEELWORKS
LE	1982	:	STORMWATER DRAINAGE
M	1996	:	ROADS (General)

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

SANS 1921 (2004): Construction and Management Requirements for Works Contracts

- Part 1: General Engineering and Construction Works; and
- Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.



**C3.2 PROJECT SPECIFICATIONS**

The project specification is covered in the following sections:

<b>ITEM</b>	<b>DESCRIPTION</b>
	STATUS
	PROJECT SPECIFICATION PORTION 1: GENERAL
PS-1	Project Description
PS-2	Extent of the Works
PS-3	Description of the Site and Access
PS-4	Nature of Ground and Subsoil Conditions
PS-5	Construction and Management Requirements
PS-6	Construction Programme
PS-7	Site Facilities Available
PS-8	Site Facilities Required
PS-9	Existing Services
PS-10	Requirements for Accommodation of Traffic
PS-11	Occupational Health and Safety
PS-12	Adverse Weather Conditions
PS-13	Site Meetings & Reporting
PS-14	Preferential Procurement
	PROJECT SPECIFICATION PORTION 2
PSA	General
PSD	Earthworks
PSDB	Earthworks (Pipe Trenches)
PSG/PSGA	Concrete (Small Works)
PSLB	Bedding (Pipes)
PSLD	Sewers
PSLE	Stormwater Drainage
	PARTICULAR SPECIFICATIONS
PA	Brickwork and Plaster
PB	Carpentry, Joinery and Ironmongery
PC	Painting
PF	Valves
PES	Environmental Specification
PE	Project Specification Occupational Health & Safety Specification

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**STATUS**

The Project Specification, consisting of two parts, forms an integral part of the contract and supplements the Standard Specifications.

Part A contains a general description of the works, the site and the requirements to be met.

Part B contains variations, amendments and additions to the Standardized Specifications and, if applicable, the Particular Specifications.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

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**PROJECT SPECIFICATION: PORTION 1**

**SABS 1200 PS: GENERAL**

**PS-1 PROJECT DESCRIPTION**

**PS-1.1 Employer's Objective**

The Harry Gwala District Municipality is responsible for the provision of safe and reliable potable water supplies to the communities falling under its entire area of jurisdiction. The Harry Gwala District Municipality in its capacity as WSA now intends to provide potable water supplies to Mpumulwane Village, one of Khukhulela Villages under the Umbrella of Khukhulela Water Supply Project through it's own Water Source in order to improve the health and hygiene standard within the community.

**PS-1.2 Overview of the Works**

The Khukhulela Water Supply Project was previously implemented where Portion of Ndodeni, Emnameneni and Gxalingene was supplied with water through Springs Protection within the villages. The other Khukhulela nearby villages were not catered for namely: Mpumulwane and Dazini. The Harry Gwala District Municipality took an initiative to assist these villages while they're all waiting for Long Term Plan.

To address the issue of these villages (Mpumulwane and Dazini) the following measures will be implemented:

- From Boreholes that were drilled to confirm water source availability, boreholes will be fully equipped to secure water source for Mpumulwane and Dazini village;
- Rising Mains which will be pumping water to Mpumulwane Storage Reservoir will be constructed;
- Bulk Gravity Mains and Reticulation Network with Standpipes will also be constructed to distribute water to the Community of Mpumulwane and Dazini.

**Rising Main:**

- Construction of 4.65 km Rising Main 160-90mm dia. Ductile Iron/uPVC Pipeline and Installation of Boreholes at Mpumulwane Village

**Gravity Main:**

- Construction of 8.47 km of 200-50mm dia. uPVC/HDPE Gravity Main Pipeline from Mpumulwane Reservoir to Mpumulwane Village;

**Reticulation Pipeline:**

- Construction of 18.93 km 90-22mm dia. uPVC/HDPE Reticulation Pipeline Infrastructure and Installation of 58 Communal Standpipes in Mpumulwane Village

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#### PS-2 EXTENT OF THE WORKS

Under this contract, the successful contractor will be required to construct Rising Main Ductile Iron/uPVC pipelines and Equipping of Boreholes and the works will comprise the following:

- Site establishment;
- Site clearance;
- Excavation for pipe trenches;
- Pipe bedding, laying and backfilling;
- Installation of Standpipes;
- Testing of pipelines;
- Equipping Of 2 No. of Boreholes for Mpumulwane and Dazini Village;
- Construction of rising mains from Boreholes;
- Reinstating all areas affected by works to condition initially found at from the commencement of work;
- Supply and construct concrete palisade fencing for all boreholes with locked gates;
- Refurbishment of Existing Infrastructure as per Engineers Instruction;
- Provide security of the project site during the construction until site hand over;
- Provide supervision and commission the project to client, and site hand over.

#### PS-3 DESCRIPTION OF THE SITE AND ACCESS

##### PS-3.1 Access

Mpumulwane is situated approximately 15km southwest of the town of Creighton in KwaZulu-Natal midlands within the Harry Gwala District Municipality and the Nkosazana Dlamini Zuma Local Municipality, 29°58'0"S 29°42'0"E

The site is accessible by gravel roads and tracks. The contractor is therefore responsible for the forming and maintaining whatever tracks are required or utilised by him for gaining access to site. The contractor is also required, upon completion, to restore all areas affected by the works to the conditions found at from the commencement of the contract. No specific items have been scheduled in the schedule of quantities for this work and the tenderer be considered to have allowed for all included work.

##### PS-3.2 Limitations

The following limitations characterise the site of the pipeline construction

- The Contractor will be required to ensure that the insurances for the works cover any damage that may occur to private properties as a result of construction activities. Should there be any claims against the contractor resulting from construction activities, the Engineer will ensure that these have been addressed or the damages rectified prior to the release of the retention held on the contract.

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**PS-4 NATURE OF GROUND AND SUBSOIL INVESTIGATIONS**

No subsoil investigations have been carried out on this site. The employer will not be held accountable for any assumptions that tenderers may make in pricing based on their visual inspection of the site during the tender briefing meeting. Tenderers must satisfy themselves as to the nature of materials to be excavated under this contract.

**PS-5 ENGINEERING AND DESIGN**

**PS-5.1 Design Services and Activity Matrix**

The following matrix of responsibilities for design of permanent and temporary works will apply:

<b>Activity Work designed by, per design stage</b>	<b>Responsible Party</b>
Concept, feasibility and overall process	Employer
Basic engineering and detail layouts to tender stage	Employer
Final design approved for construction stage	Employer
Temporary works	Contractor
Permanent Works	Contractor
Preparation of as built drawings	Contractor

**PS-5.2 Employer's Design**

The Employer's design will be for all permanent works and will be detailed in drawings, site instructions the technical specifications to be issued with the tender documents and issued during construction.

**PS-5.3 Design Brief**

The contractor will be responsible for design of the following (which are all subject to approval by the Engineer):

- Site layouts for the contractor's camp and office accommodation
- Site layouts for the Engineer Representative's temporary office accommodation
- Construction Methodology
- Formwork
- All other temporary works
- Concrete Mix designs

The costs of the designs will be deemed to have been included in the scheduled items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

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**PS-5.4 Drawings**

The following drawings will be required to be prepared by the contractor as a minimum:

- Site layouts for the contractor's camp and office accommodation
- Site layouts for the Engineer Representative's temporary office accommodation

The costs of the designs will be deemed to have been included in the scheduled items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

The tender drawings applicable to the contractor are detailed in Part C5 of these documents. These drawings have been used for setting up the Bills of Quantities.

**PS-5.5 Design Procedures**

The contractor will be required to furnish the following designs for approval by the Engineer at the indicated times:

Site layouts of the Contractor's camp and office accommodation – within 14 days from commencement date of the contract and in any case prior to the erection of the contractor's camp and offices

Layouts for the Engineer's representative office – within 14 days from commencement date of the contract and in any case prior to the erection of the Engineer's Representative's temporary office premises.

Formwork design – within 14 days of commencement of work and in any case prior to the construction of permanent reinforced concrete works.

Scaffolding and all staging work – within 14 days of commencement of work and in any case prior to the construction of permanent reinforced concrete works.

Concrete Mix Designs for the all classes of concrete as measured in the Schedule of Quantities prior to the placement of any concrete work

The costs of the designs will be deemed to have been included in the scheduled items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

**PS-5.6 Interface with other Contractors**

The contractor may be required to provide access to other contractors undertaking work as per parallel contracts. The costs of this interface will be deemed to have been allowed for in the appropriate items in the Schedule of Quantities. No other additional payments will be certified to cover these activities.

**PS-6 CONSTRUCTION AND MANAGEMENT REQUIREMENTS**

**PS-6.1 General**

The Contractor is referred to SANS 1921: 2004: Construction and Management Requirements for Works Contracts, Part 1: General Engineering and Construction Works, and Part 2: Accommodation of Traffic on Public Roads. These specifications shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

**PS-6.2 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 Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (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.

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 QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

**PS-6.3 Management and disposal of water** *(Read with SANS 1921-1: 2004 clause 4.6)*

The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

**PS-6.4 Disposal of spoil or surplus material** *(Read with SANS 192-1: 2004 clause 4.10)*

The Contractor shall dispose all surplus and unsuitable material in legal spoil areas of his own choice. He shall be responsible for all arrangements necessary to obtain such spoil sites.

**PS-6.5 Testing** *(Read with SANS 1921 – 1 : 2004 clause 4.11)*

**PS-6.5.1 Process control**

The Contractor shall arrange for all tests required for process control to be done by a laboratory acceptable to and approved by the Engineer.

The Contractor may establish his own laboratory on site, or he may employ the services of an independent commercial laboratory. Whatever method is used, the Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

**PS-6.5.2 Acceptance control**

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be covered by a provisional sum provided in the schedule of quantities, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

**PS-6.6 Survey beacons** *(Read with SANS 1921 - 1: 2004 clause 4.15)*

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

**PS-6.7 Existing Services** (Read with SANS 1921 - 1: 2004 clause 4.17)

The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.

The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

**PS-6.8 Management of the environment** (Read with SANS 1921 - 1: 2004 clause 4.19)

The Contractor shall pay special attention to the following:

(a) Natural Vegetation

The Contractor shall confine his operation to as small an area of the site as may be practical for the purpose of constructing the works.

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

(b) Fires

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

**PS-6.9 Overhaul**

No payment will be made for overhaul on this contract unless provision is made thereof in specific items.

**PS-6.10 Excavations**

Due to the depths of water lines and their location nets to a water course, the Contractor is to allow in their tendered rates for excavation, for shoring and protection of trenches. No additional payment will be made for protection of excavations for whatever reason.

**PS-6.10 Security**

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.



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**PS-7 CONSTRUCTION PROGRAMME**

**PS-7.1 Preliminary programme**

The Contractor shall include with his tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

In determining his construction programme, the contractor should allow for disruptions/stoppages/requirements and intermittent "hold" of work while awaiting Engineer's inspections at the following critical stages:

<b>Stage</b>	<b>Delay</b>
Excavation works for pipelines and prior to preparation of bedding	1 day
Following preparation of bedding and laying of pipes and prior to backfilling	1 day
Prior to commencement of testing of pipelines	1 day
Prior to pouring of concrete	1 day

The contractor must take into account the above requirements when pricing and preparing the programme of works. No additional payments, other than through scheduled items, will be made for these stoppages/disruptions/constraints.

The Employer intends to award this contract for commencement of construction in XXXX 2021.

**PS-7.2 Programme in terms of Clause 5.6 of the General Conditions of Contract**

It is essential that the construction programme, which shall conform in all respects to Clause 5.6 of the General Conditions of Contract, be furnished within the time stated in the Contract Data. The preliminary programme to be submitted with the tender shall be used as basis for this programme. The Contractor's attention is also drawn to Clause 5.7.1 of the General Conditions of Contract 2015.

The Employer intends to award construction contracts by XXXX 2021.

**PS-8 SITE FACILITIES AVAILABLE**

**PS-8.1 Contractor's camp site and depot** (Read with SANS 1921 - 1 : 2004 clause 4.14)

The Contractor will be permitted to locate his offices, storage facilities, workshops, latrines, etc, on a site approved by the Engineer, in liaison with the community.

Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition. The Contractor must not cut down or damage any trees nor make any excavation without the written permission of the Engineer and will be required to restore the site to its original condition on completion of the Works.

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All buildings and latrines shall be in accordance with the Local Authority and State Health regulations and shall be kept in a clean, sanitary condition to the satisfaction of the Engineer.

#### **PS-8.2 Accommodation of Employees**

No employees except for security guards will be allowed to sleep or be accommodated on the site in urban areas.

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.

No informal housing or squatting will be allowed.

The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities must be provided.

#### **PS 8.3 Source of Water Supply**

The Contractor shall make his own arrangements for the supply of water for construction purposes. The source of water shall be subject to the approval of the Engineer.

The Water Services Authority in the area is Harry Gwala District Municipality. Should the contractor's source of water be the Harry Gwala District Municipality, the contractor will be required to ensure that the water account with the Harry Gwala District Municipality is in good standing prior to the issue of completion certificate. The Engineer will withhold any payments until arrears are cleared with The Harry Gwala District Municipality.

#### **PS 8.4 Source of Power Supply**

The power supply authority is Eskom. The Contractor will be required to make his own arrangements with, and pay all the requisite connection and consumption charges to Eskom for whatever temporary power supplies he/she may require for his use on the site and his tender will be held to include for all such costs and charges.

### **PS-9 SITE FACILITIES REQUIRED**

#### **PS-9.1 Facilities Required for the Engineer**

##### **PS 9.1.1 Temporary/Permanent Offices**

The Contractor is to provide a temporary office for use by the Engineer. The offices should be able to accommodate one full time Engineer's Representative and two assistants.

The Engineer's offices are to be equipped with the following as a minimum:

- Three desks each with lockable drawers
- Three high back swivel chairs
- Three visitor chairs
- A facility to store/hang drawings
- An electric refrigerator of at least 200 litres capacity

The Contractor should also make arrangements for covered facilities to enable the accommodation of approximately 12– 16 people during progress site meetings, to be held fortnightly or monthly.

*The facilities are to be provided, to the satisfaction of the Engineer, within 14 days of commencement date. Should the contractor fail to provide approved establishment within the stipulated 14 days, the contractor will pay a penalty calculated as follows:*

- *Mileage of the Engineer's Representative from other offices from the nearest business centre to site and back to office at R4.00/km*
- *Rented Office space equivalent to that stipulated in this contract at offices in Umzimkhulu or other place closer to the site.*

*This penalty shall be deducted from the Contractor's payment certificates and paid to the service provider providing the site office of the specification as detailed above.*

#### **PS 9.1.2 Laboratory Facilities**

The Contractor will not be required to provide a testing laboratory on site for use by the Engineer. However, the contractor will be required to provide compaction test results for all backfilling across roads from a recognised laboratory. No additional payment will be made for the compaction tests and the contractor is to allow for the costs thereof in the tendered rates.

#### **PS 9.1.3 Sanitary Facilities**

All latrines shall conform to the requirements of the Local Authority and shall be subject to approval by the Engineer. All sanitary fees and charges due under the Local Authority or State Health Regulations or bylaws shall be paid by the Contractor. Throughout the progress of the contract, all latrines shall be maintained by the Contractor in a clean, sanitary condition to the satisfaction of the Engineer.

#### **PS 9.1.4 Telephone Facilities**

The Contractor will not be required to provide a telephone for use by the Engineer. The contractor will however be required to cover cell phone costs for the engineer's site staff for airtime valued at R150/week. Appropriate items have been provided in the Schedule of Quantities to cover these costs.

#### **PS 9.1.5 Housing Facilities**

The Contractor will not be required to provide housing facilities for the Engineer's staff. However, a provisional sum has been provided in the schedule of quantities for payment through the contract for accommodation for the Engineer's staff.

#### **PS 9.1.6 Parking Facilities**

The Contractor will be required to provide one covered parking bay for the Engineer.

#### **PS 9.1.7 Engineer's Transport**

The Contractor will not be required to provide transport for the Engineer's staff.

#### **PS 9.1.8 Security**

The Contractor will be responsible for providing adequate security for the Works and for the site establishment. All costs associated with the provision of security staff shall be borne by the Contractor and should be allowed for in the rates tendered for items in the Schedule of Quantities. No additional payments will be made for security measures taken during the contract period, other than through the schedule items in the Schedule of Quantities.

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#### PS 9.1.9 Contract staff to assist the Engineer

The following staff will be recruited by the contractor to assist the Engineer in carrying out his services:

Description of Staff	Nº Required	Remarks
Environmental Monitoring	One	Provisional sum provided for appointment as directed by the Engineer. Personnel directed by and report to Engineer
Occupational Health & Safety Monitoring	One	
Community Liaison Officer	One	

The required personnel will be identified by the Engineer and will report to the Engineer. Provisional Sums and the relevant mark-up Items are provided for in the Schedule of Quantities to cover these costs.

#### PS 9.1.10 Survey Equipment

The contractor shall provide the following survey equipment, in good condition, for use by the Engineer throughout the duration of the contract:

- A dumpy level
- Measuring tape
- An assistant, when required, to assist the Engineer to operate survey equipment, when provided.

## PS 10. EXISTING SERVICES

#### PS 10.1 Care, Damage and Protection

Known services will be indicated in the tender and contract documents. The Contractor will be responsible for identifying all services with the relevant Service Providers.

The Contractor shall familiarize himself with all services and expose them at the start of the Contract to verify their position and establish their depths.

No additional payment will be made to the Contractor for identifying and locating services. Therefore, the Contractor will have to include the costs thereof in the scheduled items in the Schedule of Quantities.

Any information regarding existing services is given in good faith and without guarantee.

#### PS 10.2 Blasting

No blasting will be permitted unless the Contractor can satisfy the Engineer that his proposed blasting methods and controls are such that no damage will be caused to the adjoining building structures, pipelines or services. In any event the Engineer will require the Contractor to plan and execute each blast in such a manner as to ensure that no damage will be caused to any structure, pipeline or service. In addition, the Engineer will require vibro-recordings to be taken at no additional cost to the Employer. No blasting is to be carried out in Eskom servitudes or wayleaves unless the Eskom authorities have been advised in writing three weeks prior to blasting. Where blasting is done adjacent to Eskom power lines, the Contractor shall arrange for a representative of Eskom to be present prior to and during any blast.

### PS 10.3 Environmental Aspects

The Contractor will be required to plan and undertake his work in a manner that minimises its impact on the natural environment. Trees and other vegetation shall, wherever possible, be left undisturbed. Trees that are marked by the Engineer shall not be damaged and in the event of the Contractor doing so, a penalty will be deducted from monies due to the Contractor.

Every effort shall be made by the Contractor to prevent pollution of the adjacent areas and river and to reduce the noise, dust and fumes emanating from his construction activities.

### PS 10.4 Dealing with Water

Where necessary, the Contractor shall construct temporary drainage channels to divert ground water from his excavation and excess water must be pumped out.

No compensation for any variation of the actual conditions during construction from the data given will be considered. Neither will additional compensation be considered for data omitted or inaccurately given.

The rates tendered shall allow for the requirements of this clause and all incidentals.

The Contractor shall include with his tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

In drawing up his programme, the tenderer is to take into account the following:

- i) Permissible period of downtime of the existing water pipeline to allow the contractor to make the necessary interconnections: 09:00 up to 16:00, i.e. 7 hours, during the day.
- ii) The water pipelines must be operational every day except for the period mentioned above.
- iii) The water pipelines are currently in use.
- iv) The Employer shall be responsible for the operation of all valves and its water supply system.

The Contractor shall not operate any valve unless the Contractor has received from the Engineer prior written permission to do so which permission shall be limited to a specific time and operation in each case unless expressly stated to the contrary in writing by the Engineer.

It shall be the responsibility of the Contractor to give prior written notice timeously (min 2 working days) to the Engineer in every case in which the Contractor may request valve operation or prevention of valve operation by the Employer.

The Employer cannot guarantee watertight closing of valves; it shall be the responsibility of the Contractor to do and provide everything necessary for the timeous, efficient and safe disposal of all water which may leak through closed isolating valves and thence into places from which, in the opinion of the Engineer, the leaking water has to be removed for good reason. (The Engineer shall certify extra payment in respect of the costs of such valve-leakage-water disposal measures as in his opinion could not reasonably have been avoided or reduced.)

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The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Project Specifications and in the Contract Data.

Where necessary, the Contractor shall construct temporary drainage channels to divert ground water or leakage from non closing valves and fire hydrants from his excavation and excess water must be pumped out.

No compensation for any variation of the actual conditions during construction from the data given will be considered. Neither will additional compensation be considered for data omitted or inaccurately given.

#### **PS 10.5 Servitudes and Rights of Way**

The Employer will, where necessary, obtain permanent servitudes and rights of way along the road routes indicated on the tender drawings. New servitudes will only be registered after completion of the Works.

#### **PS 10.6 Dealing with Damaged Services**

In the event of any service being damaged or accidentally disconnected for any reason, the Contractor shall immediately contact the relevant authority for instruction and shall report the occurrence of the incident. The damage is to be repaired as soon as possible to the approval of the Engineer and the authority. The Contractor will be held responsible for paying all costs incurred by the authority or himself as a result of each such incident, where relevant.

#### **PS 10.7 Accommodation of Traffic**

The Contractor shall always ensure the safe and expeditious passage of traffic and shall provide all necessary temporary road traffic signs, barricades, flagmen, etc to safeguard the travelling public. Any detours or bypasses constructed by the Contractor shall be adequately signposted, as per the South African Road Traffic Signs Manual, and maintained in such a manner as to provide safe and easy passage of traffic.

#### **PS 10.8 Spoil Material**

No indiscriminate spoiling of material will be allowed. All surplus or unsuitable material shall be spoiled, levelled and spread in designated areas as directed by the Engineer. All haul will be regarded as freehaul.

#### **PS 10.9 Finishing and Tidying and Defects Liability Period**

On no account must rubble and spoil materials, other materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of other Contractors or Authorities.

Finishing and tidying must not simply be left until the end of the construction period. The Contractor will be entitled, subject to prior agreement with the Engineer and within reasonable limits, to request that work in a particular area and/or work of a particular discipline, be inspected for partial completion. The specified defects liability period in respect of any specific section of the Works shall commence on the date on which the relevant section is accepted by the Engineer as being completed, i.e. fully commissioned, including finishing and tidying.

On completion of the Contract the Contractor shall ensure that all materials used in the construction of the temporary Site office, workshop and storage yard are removed from Site. Waste materials such as construction debris and soil contaminated with oil and fuel are to be disposed of at the solid waste disposal site used approved by the Engineer. Prior to the handover of the Site to the Employer, the Contractor and the Engineer will conduct a post

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construction audit to determine if any additional measures that are to be taken. The Completion Certificate will only be issued after this stage.

#### **PS 10.10 Employee Accommodation**

(See Subclause 3.2.1 of Section A of Part 2 and Subclause 1.2.1 of Section A of Part 3 of SABS 0120)

The Contractor shall conform in all respects with the provisions of any Act, Regulations or By-Law of Harry Gwala District Municipality, which may be applicable to employee accommodation. Save for a security guard on active duty, no employees may be housed on Site or the Contractor's campsite after normal working hours.

#### **PS 10.11 Employment of Local Labour**

The Employer has determined that 100% of the Contractor's unskilled labour force shall be made up from the local community. A labour sub-committee (of a Project Steering Committee) comprising representatives of the community and other stakeholders will be responsible for the recruitment of all local labour. The Contractor will be required to provide details of the numbers of semi-skilled and unskilled workers he will require, together with their anticipated starting dates. The PSC through its labour sub-committee will then make this labour available to the Contractor.

A minimum of 50% of the local labour shall comprise of women and, where appropriate, disabled labour shall be employed. It is a requirement that tenderers acquaint themselves fully with requirements for registration with Unemployment Insurance Fund.

The Employer requires that the successful contractor registers all labour with the Unemployment Insurance Fund. The local labour rate has been determined at R200.00/day per labourer. The task for excavation by hand has been agreed at 2,4 m<sup>3</sup>/day (e.g. 0,76 m x 1,0 m x 3,15 m).

During project execution, the successful contractor will be required to provide progress reports indicating to what level these requirements have been met.

#### **PS 10.12 EPWP Construction Methods**

EPWP construction methods will be utilised on this contract in order to generate employment opportunities for the local community.

#### **PS 10.13 Frequency of Labour Wages Payments**

The contractor will be required to pay labour on a fortnightly basis.

#### **PS 10.14 Training and Capacity Building**

During project execution, it is the desire of the Employer that an identified number of community members receive appropriate level of non accredited training in either pipelaying activities or construction management activities. Within 14 days of appointment, the successful contractor will be required to provide, together with his method statement, a proposal for consideration by the Project Steering Committee for activities in which the community members can receive training. This proposal will be considered by the Project Steering Committee after which the Contractor will be given an instruction on the training to provide. Training will be provided to local labour that is already in the employ of the contractors as per clause PS 10.11. It must be noted that the Contractor will be required to pay the labour based on their daily rates indicated in PS 10.11.

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Should the contractor fail to provide this training, the Employer reserves the right to seek training from alternative sources. In that case, the cost of the training sought will be deductible from any monies due to the contractor.

**PS 10.15 Contractor Participation Goal (CPG) Partner**

The Employer will require that the contractor utilise a CPG partner on the contract as part of development of emerging contractors. The CPG partner will be approved by the Employer and will be required to undertake up to 30% of the scope of work. Should the contractor be unable to provide a CPG partner, the Employer will provide one on the contract. Tenderers are also referred to Contract Data, Clause 4.4.7 in this regard.

**PS-11 REQUIREMENTS FOR ACCOMMODATION OF TRAFFIC**

**PS-11.1 General**

The Contractor will be responsible for the safe and easy passage of public traffic past and on sections of roads of which he has occupation or where work has to be done near traffic.

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

**PS-11.2 Basic Requirements**

The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

The Contractor shall ensure that all road signs, barricades, delineators, flagmen and speed controls are effective, and that courtesy is always extended to the public.

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc, have been repaired to his satisfaction.

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

The Contractor shall construct and maintain all temporary drainage works necessary for temporary deviations.

The Contractor shall provide and grant access to persons whose properties fall within or adjoin the area in which he is working.

**PS-11.3 Traffic Safety Officer**

Where warranted by traffic conditions on or near the site, the Contractor shall nominate a suitable member of his staff as traffic safety officer to be responsible for the arrangement and maintenance of all the measures for the accommodation of traffic for the duration of the project. Duties of the traffic safety officer shall be as set out in SANS 1921 Part 2 and shall also comply with the Occupational Health and Safety Act No 85 of 1993 and the Construction Regulations 2014.



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**PS-11.4 Payment**

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

Items that may be considered for payment are specified in SABS 1200 Standardized Specifications and the related project specification.

**PS-12 OCCUPATIONAL HEALTH AND SAFETY (Read with SANS 1921 - 1: 2004 clause 4.14)**

**PS-12.1 General statement**

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the OHS Act 1993 Construction Regulations 2014 issued by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act by executing the Agreement form C1.2.4 included in Section C1: Agreements and Contract Data.

**PS-12.2 Health and Safety Specifications and Plans to be submitted at tender stage**

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification will be included in the tender documents as part of the Project Specifications.

(b) Tenderer's Health and Safety Plan

The successful Tenderer shall, on receipt of notification that he has been awarded the contract, submit without delay his own documented Health and Safety Plan for the execution of the work under the contract. His Health and Safety Plan must at least cover the following:

- (i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 7 to 28;
- (ii) pro-active identification of potential hazards and unsafe working conditions;
- (iii) provision of a safe working environment and equipment;
- (iv) statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (*Regulation 5*);
- (v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
- (vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and
- (vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

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

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

#### **PS-12.3 Cost of compliance with the OHS Act Construction Regulations**

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract. Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

Items that may qualify for remuneration will be specified in the Safety Specifications included or in the Project specifications.

#### **PS-13 ADVERSE WEATHER CONDITIONS**

In terms of Clause 5.12.2 of the General Conditions of Contract, extension of time will be considered for **abnormal rainfall**. The numbers of days per month on which work is expected not to be possible as a result of **normal rainfall**, and for which the Contractor shall make provision in his tendered rates, prices and programme, are listed in Table PS-13 hereafter. Only the number of days lost as a result of adverse weather conditions, exceeding the number of days listed in Table PS-13.1, will qualify for consideration of extension of time.

During the execution of the Works, the Engineer's Representative will certify a day lost due to abnormal rainfall and adverse weather conditions only:

- if no work was possible on the relevant working day on any item which is on the critical path according to the latest approved construction programme; or
- if less than 30% of the work force and plant on site could work during that specific working day.

Extension of time as a result of abnormal rainfall and adverse weather conditions shall be calculated monthly being equal to the number of working days certified by the Engineer's Representative as lost due to rainfall and adverse weather conditions, less the number of days allowed for as in Table PS-13, which could result in a negative figure for certain months. The total extension of time as a result of abnormal climatic conditions for which the Contractor may apply, shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as nil."

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**Table PS-13: Expected N° of Working Days Lost Monthly Due to Normal Rainfall**

<b>MONTH</b>	<b>Expected number of working days lost as result of normal rainfall</b>
JANUARY	*5
FEBRUARY	5
MARCH	4
APRIL	1
MAY	1
JUNE	1
JULY	1
AUGUST	1
SEPTEMBER	2
OCTOBER	3
NOVEMBER	4
DECEMBER	5
<b>TOTAL</b>	<b>33 days</b>

*(Based on information obtained from the Weather Bureau, Department of Environment Affairs, Margate. The average monthly rainfall figures quoted, are included for information only, and shall not be taken into consideration for calculation of extension of time. The number of working days lost for December and January allows for the builders' holidays from 21 December 2015 and ending on 08 January 2016.)*

**PS-14 SITE MEETINGS AND REPORTING**

The Contractor will be required to attend site meetings organised by the Engineer. In these meetings he (the Contractor) will be required to provide progress reports and other reports to monitor the outputs of the contractor, as may be required from time to time, to be presented in a format prescribed by the Engineer. The frequency of such meetings will be monthly, as a minimum. However, the frequency can be reviewed, depending on the progress of the contract.

**PS-15 PREFERENTIAL PROCUREMENT**

For the purpose of this contract the Contractor shall comply with the preferential procurement statement provided in F.3.11 and T2.2 of the Tender Data.

**PS-16 EPWP SPECIFICATION**

**PS-16.1 Labour Intensive Competencies of Supervisory and Management Staff**

Contractors shall only engage supervisory and management staff in labour intensive works that have completed the skills programme outlined in Table 1:

**Table 1: Skills programme for supervisory and management staff**

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

**PS-16.2 Employment of Unskilled and Semi-Skilled Workers in Labour-Intensive Works**

**PS-16.2.1 Requirements for the sourcing and engagement of labour.**

- PS-16.2.1.1 Unskilled and semi-skilled labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation in accordance with the Code of Good Practice for the Expanded Public Works Programme.
- PS-16.2.1.2 The following are some of the considerations that are elaborated in the Code of Good Practice for Expanded Public Works Programmes.

**PS-16.2.2 Training of Targeted Labour**

- PS-16.2.2.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
- PS-16.2.2.2 Accredited training may be provided before the commencement of a project.
- PS-16.2.2.3 The cost of accredited training of targeted labour will be funded through various funding sources such as National Skills Fund from the Department of Higher Education and Training, funds from the Implementing Public body, funding from SETAS etc. This training should take place as close to the project site as practically possible. The Public Body implementing the project must ensure that training applications for beneficiaries are made by its relevant project manager assisted by relevant training officials from the National Department of Public Works.
- PS-16.2.2.4 The Public Body must ensure that preference of the training of beneficiaries in technical skills over life skills is made. In addition, the Public Body is required to maximize opportunities for training to beneficiaries to be carried out before the implementation of projects.
- PS-16.2.2.5 The Public body must ensure that workers who have received training will be placed on the project to work after receiving the training.

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PS-16.2.2.6 If a provisional sum for training is made in the contract the contractor shall pay an allowance equal to 100% of the daily wage rate to workers who attend accredited training.

**PS-16.3 Generic Labour-Intensive Specification**

The Generic Labour-intensive specification below (informed by SANS 1921-5, Construction and management requirements for works contracts - Part 5: Earthworks) covers activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- trenches having a depth of less than 1.5 metres
- stormwater drainage
- low-volume roads (typically less than 500 vehicles per day);
- sidewalks and non-motorised transport infrastructure
- water and sanitation

**PS-16.3.1 Precedence**

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

**PS-16.3.2 Hand excavatable material**

Hand excavatable material is:

**a) granular materials:**

- i) whose consistency when profiled may in terms of table 2 be classified as very loose, loose, medium dense, or dense; or
- ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

**b) cohesive materials:**

- i) whose consistency when profiled may in terms of table 2 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
- ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

**Note**

1. A boulder is material with a particle size greater than 200mm, a cobble and gravel is material between 60 and 200mm.
2. A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

<b>Table 2: Consistency of materials when profiled</b>			
<b>GRANULAR MATERIALS</b>		<b>COHESIVE MATERIALS</b>	
<b>CONSISTENCY</b>	<b>DESCRIPTION</b>	<b>CONSISTENCY</b>	<b>DESCRIPTION</b>
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in upto 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

**PS-16.3.3 Trench excavation**

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

**PS-16.3.4 Compaction of backfilling to trenches (areas not subject to traffic)**

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

- a) to 90% Proctor density;
- b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or
- c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

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**PS-16.3.5 Excavation**

All hand excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

**PS-16.3.6 Clearing and grubbing**

Grass and small bushes shall be cleared by hand.

**PS-16.3.7 Shaping**

All shaping shall be undertaken by hand.

**PS-16.3.8 Loading**

All loading shall be done by hand. Haulage equipment should be selected in a manner that allows loading by hand to the extent possible.

**PS-16.3.9 Haul**

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

**PS-16.3.10 Offloading**

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

**PS-16.3.11 Spreading**

All material shall be spread by hand.

**PS-16.3.12 Compaction**

Small areas may be compacted by hand provided that the specified compaction is achieved. Appropriate rollers should be used where higher (than can be achieved by hand) levels of compaction are required.

**PS-16.3.13 Grassing**

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

**PS-16.3.14 Stone pitching and rubble concrete masonry**

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

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**PS-16.3.15 Manufactured Elements**

Elements manufactured or supplied by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper hand hold on them.

**PS 17 SUBCONTRACTING OF A PROTION OF THE CONTRACT**

The successful Tenderer will be required to employ local and disabled people and moreover, subcontract up to a maximum of 30% of the project value to local contractors. The "local contractors" will be located in the Harry District Municipality area of jurisdiction and where specifically required by the Employer, the area where construction works are being undertaken.

Also refer to Contract Data.



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**PROJECT SPECIFICATION: PORTION 2**

**AMENDMENTS TO THE STANDARD AND PARTICULAR SPECIFICATIONS**

**INTRODUCTION**

In certain clauses the standard, standardized and particular specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternative or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains additional specifications required for this particular contract.

The number of each clause and each payment item in this part 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 number of a new clause or payment item, which does not form part of a clause or a payment item in the standard specifications and which is included here, is also prefixed by PS, but followed by a new number which follows on the last clause or item number used in the relevant section of the standard specifications.

**PROJECT SPECIFICATION: PORTION 2**

**SABS 1200 PSA: GENERAL**

**PSA-3 MATERIALS**

**PSA-3.1 Quality**

Where there is a standardization mark programme for any material, all such material supplied shall bear the official standardization mark.

Alternative materials or equipment proposed by the Contractor shall be tested. The test, as well as the materials or equipment, shall be approved by the Engineer prior to any such materials or equipment being built into the works and all costs involved in testing shall be deemed to be included in the rates tendered.

**PSA-3.3 Applicable Standards for Cement (*Additional Subclause*)**

The standard cement specifications SABS 471, SABS 626, SABS 831 and SABS 1466, referred to in clause 3.3, have been withdrawn and are replaced by the new SANS 50197-1 and -2: Common cements, and SANS 50413-1 and -2: Masonry cement. These specifications will be applicable to this contract, and the descriptions and types of cements specified, will be based on the designations as defined in these specifications.

**PSA-4. PLANT**

**PSA-4.2 Contractor's Office, Stores and Services**

The Contractor's camp shall be kept neat and clean at all times and all surplus or rejected material shall be removed from the site.

**PSA-5 CONSTRUCTION**

**PSA 5.1 Survey**

**PS A 5.1.1 Setting Out Of The Works**

Substitute the first sentence in A 5.1.1 with the following:

"Setting out of the works is the sole responsibility of the Contractor and shall be done from survey beacons identified by the Engineer. The Contractor shall, within two (2) weeks after the site has been handed over to him, confirm himself that the survey beacons are correct. Any discrepancy shall immediately be reported in writing to the Engineer. Any costs or subsequent costs arising from discrepancies, which had not been reported to the Engineer within the aforementioned period, shall be the sole responsibility of the Contractor. A grid of final terrace levels over the site of the works will be issued to the Contractor at the commencement of the contract and it is the Contractors responsibility to preserve all setting out pegs based on this information as given for the duration of the contract."

**PS A 5.4 Protection Of Overhead And Underground Services**

Add the following paragraph:

" The Contractor shall as soon as possible after handing over of the site, commence with the detection to existing services, continue with it without interruption, and finalise it at least 7 days before excavation starts at that particular section."

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**PSA-5.8 Ground and access to works**

Add the following:

"On completion of operations the Contractor shall restore the ground surface, wherever it may have been disturbed, to its original condition by filling in all ruts with material similar to the material within the rut and levelling the ground and, where necessary, planting grass and shrubs as may be required. Any boundary fences which have been removed or damaged by his operations and activities shall be repaired and/or reinstated at the Contractor's expense".

**PSA-5.9 Accommodation of Traffic (additional subclause)**

Where construction work has to be carried out on or near public roads, the Contractor shall deal with traffic as specified in SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor is also referred to Project Specification PS-10.

**PSA-8. MEASUREMENT AND PAYMENT**

**PSA-8.3 Scheduled fixed-charge and value-related items**

**PSA-8.3.2 Establishment of Facilities on the Site**

**PSA-8.3.2.1 Facilities for the Engineer**

Add the following additional subitems:

(d) Carports (*state number*) Unit : Sum

The tendered rate shall cover all costs as specified in Subclause 8.3.2.3 of SABS 1200 A (and 5.5 of SABS 1200 AB to provide these facilities as specified in Clauses PSAB-3.2, 3.3 and 4.2. if applicable).

**PSA-8.3.2.2 Facilities for Contractor**

For this contract the facilities for the Contractor will not be measured and paid for separately as itemised in Subclause 8.3.2.2. The subitems (a) to (j) will be consolidated into one item and payment under item PSA-8.3.2.2 shall be deemed to cover all these subitems.

**PSA-8.4 Scheduled time-related items**

**PSA-8.4.2 Operation and maintenance of Facilities on Site**

**PSA-8.4.2.1 Facilities for Engineer**

Add the following additional subitems:

(e) Carports ..... Unit : Sum  
(f) Survey instruments ..... Unit : Sum

The rates tendered shall cover all costs as specified in Subclause 8.4.2.3 of SABS 1200 A and 5.5 of SABS 1200 AB to operate and maintain these facilities as specified in Clauses PSAB-3.2, 3.3 and 4.2.

**PSA-8.4.2.2 Facilities for Contractor**

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Consolidate subitems (a) to (j) of Clause 8.4.2.2 into one item as in PSA-8.3.2.2. Payment under PSA-8.4.2.2 shall be deemed to cover subitems (a) to (j).

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**PSAB: ENGINEER'S OFFICE**

(Applicable to SABS 1200 AB - 1986)

**PSAB 2 INTERPRETATIONS**

**PSAB 2.1(b) Supporting Specifications**

Delete the Sub-Clause and substitute the following:

SABS 1200 AA

**PSAB 2.3 Definitions**

Delete the first two lines and substitute the following:

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

**PSAB 3 MATERIALS**

**PSAB 3.1 Nameboards**

In the 3<sup>rd</sup> line delete "South African Institution of Civil Engineers" and substitute with "Municipal Infrastructure Grant".

**PSAB 4 PLANT**

**PSAB 4.1 Telephone**

Delete the Sub-Clause and substitute the following:

The Contractor shall provide a portable cellular telephone (with minimum 8W output power, 18 hours standby and 3 hours talk time) on site for the sole use of the Engineer or his Representative for the duration of the Contract.

**PSAB 4.2 Survey Equipment (New Sub-Clause)**

Add new Sub-Clause:

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

- One automatic reading Engineer's level plus tripod
- One levelling staff (5 m long, 1 cm graduations)
- One staff angle bubble
- One metal change-point for levelling
- One separate plumb-bob
- One spirit level (one metre long)
- Six steel-tipped ranging rods each 2,5 m long
- One hammer (2 kg) with steel or wooden pegs as necessary
- Two canvas carry bags
- One 30 m steel tape
- One 7,5 m steel tape

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

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

**PSAB 5 CONSTRUCTION**

**PSAB 5.2 Engineer's Office**

Add to the Sub-Clause:

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

(i) PSAB 5.4 Telephone

Delete the last sentence.

**PSAB 5.5 Survey Assistants**

Delete the first sentence and substitute the following:

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

**PSAB 8 MEASUREMENT AND PAYMENT**

**PSAB 8.1 Scheduled Items**

Delete the 1<sup>st</sup> sentence and substitute the following:

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

**PSAB 8.2.1 Fixed and Time-related Charges**

Delete the 1<sup>st</sup> sentence and substitute the following:

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

Add to the Sub-Clause:

The Tenderer is to include, under the Time-Related Charges, a Prime Cost Sum of R200,00 per week for a period of time equal to the Time for Completion of the Contract (see Appendix) to cover the cost of the Engineer's telephone calls and all other costs relating to the provision of a cellular telephone for the exclusive use by the Engineer or his Representative.

The Tenderer is also to include, under this clause, a Prime Cost Sum of R70,00 per week for the same period of time, to cover the cost of fully comprehensively insuring a laptop computer provided for the sole use of the Engineer or his Representative.

**PSC: SITE CLEARANCE**

*(Applicable SABS 1200 C - 1980 As Amended 1982)*

**PSC 3 MATERIALS**

**PSC 3.1 Disposal of Material**

Add to this Sub-clause:

Material obtained from clearing must be disposed of offsite by the Contractor at his expense. Disposal of combustible material by burning will be permitted but must still be authorised at the time of burning by the Engineer. The Contractor will be held responsible for observing the by-laws and regulations of the relevant local authority and for any injury to persons and damage to property caused by any fire starting on site, in his camp or a fire started for any reason by his employees, regardless of whether such injury or damage is the direct or indirect result of such fire. The Contractor shall indemnify the Employer against all claims or damages arising from this source. Burning of combustible material shall only be carried out in areas to be covered over by permanent works.

**PSC 5 CONSTRUCTION**

**PSC 5.2.3.2 Individual Trees**

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

The amount of the penalty payable by the Contractor for the removal or damage by him of a tree designated for preservation shall be R500 for each tree having a girth of less than 1 000 mm and R1 000 for each tree having a girth of 1 000 mm or more.

**PSC 5.3 Clearing**

Add the following new Sub-Clauses:

**PSC 5.3.1 Sub-Clause 5.3.1**

Where the pipeline route crosses an existing fence, a section of fencing not exceeding 10,0 m in length may be removed temporarily during construction and thereafter reinstated to a condition not worse than the original as soon as the pipeline has been installed and backfilled in the immediate vicinity of the crossing. For the period while the existing fence is dismantled, the Contractor shall erect, at the end of each day's operations, a temporary fence to close the gap in the existing fence.

**PSC 5.4 Grubbing**

In the fourth line delete "200mm" and substitute 300mm.

**PSC 5.6 Conservation of Topsoil  
and 8.2.10**

Add to the Sub-Clause:

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

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**PSC 8 MEASUREMENT AND PAYMENT**

**PSC 8.2 Scheduled Items**

*(i).1 PSC 8.2.10 Topsoil*

Add to the Sub-Clause:

The topsoil, where approved by the Engineer, shall be conserved for later use by stockpiling clear of the working area.

**PSC 8.2.11 Fences (New Sub-Clause)**

Separate payment will be made for dealing with fences in the manner specified in PSC 5.3.1 above as scheduled.



**PROJECT SPECIFICATION: PORTION 2**

**SABS 1200 PSD: EARTHWORKS**

**PSD-1 EARTHWORKS**

*The Contractor is referred to SANS 1921 - 5: Earthworks activities which are to be performed by hand*

**PSD-3 MATERIALS**

**PSD-3.1 Classification for excavation purposes**

**PSD-3.1.2 Classes of excavation**

The classes of excavation in clause 3.1.2 shall in general apply to all excavations where use is made of conventional methods and plant and equipment.

Where labour-intensive methods applicable to targeted labour are specified, soft excavations shall be defined as follows:

"PSD-3.1.2(a) Soft excavation

Soft excavation for labour-intensive work where excavations are to be carried out by hand methods, shall be excavation in material that can be efficiently removed and loaded with picks, shovels and other hand tools by an average able-bodied person or group of persons. Soft excavation shall include small boulders that can be removed by hand methods.

Soft excavation can be further broken down by introduction of an additional class such as "Soft Excavation Class A", which is excavation defined as soft, but which can only be excavated with difficulty.

The criteria for classifying Soft Excavation Class A shall be as follows:

Granular material: -dense material with high resistance to penetration by the point of a geological pick; several blows are required for removal of material; 7 to 15 blows of the dynamic cone penetrometer are required to penetrate 100 mm; and

Cohesive materials- stiff to very stiff material requiring 6 to 8 blows of the dynamic cone penetrometer to penetrate 100 mm, where:

"stiff" material can be indented by thumbnail; slight indentation produced by pushing a geological pick point into the soil; cannot be moulded by fingers; and where:

"very stiff" material can be indented by thumbnail with difficulty; slight penetration of point produced by blow of geological pick.

Where soft excavation class A material is encountered, it shall be measured and paid for as an extra over soft excavation.

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PSD-5 CONSTRUCTION

PSD-5.1 Precautions

PSD-5.1.1 Safety

PSD-5.1.1.2 Safeguarding of excavations

- **Add the following subparagraph:**

"(g) The Contractor or his agent or his representative shall **not** require or allow any person to work under unsupported overhanging material or in an excavation which is more than 1,5 m deep, and any excavation which has not been adequately supported or braced if there is a danger of the overhanging material or the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question."

PSD-5.2.2.1 Excavations for general earthworks and for structures

- **Add the following additional subparagraph:**

"(f) The Contractor shall so plan his cut-to-fill operations that all excavated material is used in the manner that is most appropriate.

The Contractor shall conserve all suitable surplus material and he shall not borrow, spoil or waste any material unnecessarily. If excavated material designated for a particular purpose become contaminated, is incorrectly used or becomes unavailable through injudicious planning of excavation operations, the Contractor shall replace the contaminated material and make good any shortfall with material of quality at least equal to that of the said selected material.

Where selection of excavated material is required, the method of excavation shall be so arranged as to avoid double handling. Wherever possible excavated material shall be placed in its final position without being stockpiled. If stockpiling is unavoidable, materials intended for different uses shall be stockpiled separately

**PROJECT SPECIFICATION : PORTION 2**  
**SABS 1200 PSD : EARTHWORKS**

**PSD-1 EARTHWORKS**

*The Contractor is referred to SANS 1921 - 5: Earthworks activities which are to be performed by hand*

**PSD-3 MATERIALS**

**PSD-3.1 Classification for excavation purposes**

**PSD-3.1.2 Classes of excavation**

The classes of excavation in clause 3.1.2 shall in general apply to all excavations where use is made of conventional methods and plant and equipment.

Where labour-intensive methods applicable to targeted labour are specified, soft excavations shall be defined as follows:

"PSD-3.1.2(a) Soft excavation

Soft excavation for labour-intensive work where excavations are to be carried out by hand methods, shall be excavation in material that can be efficiently removed and loaded with picks, shovels and other hand tools by an average able-bodied person or group of persons. Soft excavation shall include small boulders that can be removed by hand methods.

Soft excavation can be further broken down by introduction of an additional class such as "Soft Excavation Class A", which is excavation defined as soft, but which can only be excavated with difficulty.

The criteria for classifying Soft Excavation Class A shall be as follows:

Granular material: -dense material with high resistance to penetration by the point of a geological pick; several blows are required for removal of material; 7 to 15 blows of the dynamic cone penetrometer are required to penetrate 100 mm; and

Cohesive materials - stiff to very stiff material requiring 6 to 8 blows of the dynamic cone penetrometer to penetrate 100 mm, where:

"stiff" material can be indented by thumbnail; slight indentation produced by pushing a geological pick point into the soil; cannot be moulded by fingers; and where:

"very stiff" material can be indented by thumbnail with difficulty; slight penetration of point produced by blow of geological pick.

Where soft excavation class A material is encountered, it shall be measured and paid for as an extra over soft excavation.

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**PSD-5 CONSTRUCTION**

**PSD-5.1 Precautions**

**PSD-5.1.1 Safety**

**PSD-5.1.1.2 Safeguarding of excavations**

- ***Add the following subparagraph:***

"(g) The Contractor or his agent or his representative shall **not** require or allow any person to work under unsupported overhanging material or in an excavation which is more than 1,5 m deep, and any excavation which has not been adequately supported or braced if there is a danger of the overhanging material or the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question."

**PSD-5.2.2.1 Excavations for general earthworks and for structures**

- ***Add the following additional subparagraph:***

"(f) The Contractor shall so plan his cut-to-fill operations that all excavated material is used in the manner that is most appropriate.

The Contractor shall conserve all suitable surplus material and he shall not borrow, spoil or waste any material unnecessarily. If excavated material designated for a particular purpose become contaminated, is incorrectly used or becomes unavailable through injudicious planning of excavation operations, the Contractor shall replace the contaminated material and make good any shortfall with material of quality at least equal to that of the said selected material.

Where selection of excavated material is required, the method of excavation shall be so arranged as to avoid double handling. Wherever possible excavated material shall be placed in its final position without being stockpiled. If stockpiling is unavoidable, materials intended for different uses shall be stockpiled separately

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**PROJECT SPECIFICATION: PORTION 2**

**SABS 1200 PSD: EARTHWORKS (PIPE TRENCHES)**

**PSDB-5 CONSTRUCTION**

**PSDB- 5.1 Precautions**

**PSDB-5.1.5 Trench Excavations (additional subclause)**

The precautions for excavations as specified in Clause 5.1.1 of Section 1200 D, 1200 DA, and the relevant clauses in PSD and PSDA, shall also apply to all trench excavations.

The Contractor shall take all the steps necessary to ensure that no person is required or allowed to work in a trench or any other unsupported overhanging excavation which is more than 1,5 m deep, and any excavation which has not been adequately supported, shored or braced if there is any danger whatsoever of the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question.

**PROJECT SPECIFICATION: PORTION 2**

**SABS 1200 GA: CONCRETE (SMALL WORKS)**

**PS GA-3 MATERIALS**

**PS GA-3.2 Cement**

**PS GA-3.2.1 Applicable specifications**

The standard cement specifications SABS 471, SABS 626, SABS 831, SABS 1466 and SABS 1491, have been withdrawn and are replaced by SANS 50197-1: Common cements, and SANS 50413-1: Masonry cement. These specifications will be applicable to this contract and the descriptions and types of cements, where specified, will be based on the designations as defined in these specifications.

**PS GA-5.4.1.4 Prescribed mix concrete**

Add the following:

"The structural concrete in this contract shall comply with the following specification.

- The minimum 28-day strength shall be as specified in drawings
- The maximum water/cement ration shall be 0.42
- The minimum cement content shall be 400 kg/m<sup>3</sup>
- The cement used must be extended with a minimum of 30% Fly Ash or 50% GGBS

A detailed mix design by an approved concrete testing laboratory before any concrete is poured in the works and provision shall be made by the contractor for the cost of the design in his rates.

**PS GA-8: MEASUREMENT AND PAYMENT**

**PS GA-8.1 Measurement and rates**

**PS GA-8.1.2 Reinforcement**

Replace subclause 8.1.2.2 with the following:

PSGA-8.1.2.2 Mild steel and high tensile steel will be measured by mass for the diameters or range of diameters as scheduled.

Welded mesh will be scheduled separately for each type and mass per square metre of mesh."

Replace subclause 8.1.2.3 with the following:

"PSGA-8.1.2.3 The unit rate for steel bars shall cover the cost of supply, cutting, bending, placing in position, and fixing of the reinforcing and supporting steel scheduled. The rate shall also include the provision of all spacer devices and binding wire, as well as the cost of tests in terms of SANS 920.

The unit rate for welded mesh shall cover the supply, cutting and placing of mesh, as well as the cost of all waste due to laps."

**PROJECT SPECIFICATION: PORTION 2**

**SABS 1200 LB: BEDDING (PIPES)**

**PS LB 3.3 BEDDING**

Add the following to LB 3.3:

All pipes shall be classified as rigid pipes and shall be laid on a Class C bedding except sub soil-drainage, which shall be classified as flexible pipes.

**PS LB 5 CONSTRUCTION**

**PS LB 5.1 General**

**PS LB 5.1.4 Compacting**

Substitute "90 % of mod AASHTO" in LB 5.1.4 with "93 % of mod AASHTO (100 % for sand)".

**PS LB 8 MEASUREMENT AND PAYMENT**

**PS LB 8.2 Scheduled Items**

**PS LB 8.2.2.4 From stockpile (provisional)**

- a) Selected granular material ..... Unit : m<sup>3</sup>
- b) Selected fill material ..... Unit : m<sup>3</sup>

The rate shall cover the cost of obtaining, handling and transport regardless the distance, of the required bedding material from the stockpile, the delivery thereof at positions that are spaced along the trench in such a way as suits the working method of the Contractor, as well as the removal of material displaced by this importation within the free-haul distance.

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**PROJECT SPECIFICATION: PORTION 2**

**SABS 1200 LE : STORMWATER DRAINAGE**

**PS LE 3 MATERIALS**

**PS LE 3.1.1 Material for Subsoil Drainage**

**PS LE 3.1.1.1 Pipes**

Pipes for subsoil drainage shall be uPVC pipes complying with the requirements of SABS 791, but shall be perforated or slotted.

The size of perforations in perforated pipes shall in all cases be 8 mm in diameter  $\pm 1,5$  mm and the number of perforations per metre shall be not less than 26 for 110 mm pipes and 52 for 160 mm pipes. Perforations shall be spaced in two rows for 110 mm pipes and in three rows for 160 mm pipes.

Slotted pipes shall have a slot width of 8 mm  $\pm 1,5$  mm. The arrangement of slots shall be subject to the Engineer's approval, but the total slot area shall be not less than that presented for perforations.

Pipes without slots or perforations required for conveying ground water from the subsoil drainage proper to the point of discharge, shall be uPVC pipes as specified above.

**PS LE 3.1.1.2 Crushed-stone**

Crushed-stone in subsoil drains shall be 19 mm single-sized stone complying with the grading requirements of stone for concrete in SABS 1083.

**PS LE 3.1.1.3 Geotextile Blanket**

The geotextile blanket around subsoil drains shall comply with the requirements of PS DK 3.1.4 in all respects.

**PS LE 3.1.1.4 Sand**

Sand obtained from approved commercial sources shall be clean, hard and durable and shall comply with the following grading requirements:

D15 : 0,2 mm to 0,4 mm

D85 : 1,2 mm to 4,7 mm

**PS LE 5 CONSTRUCTION**

**PS LE 5.1 Trench Bottom**

**PS LE 5.1.3 Unsuitable Founding Conditions**

Substitute "90 % of MAASHTO maximum density" in LE 5.1.3 with "90 % of MAASHTO maximum density (100 % for sand)".



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**PS LE8.2 BEDDING AND LAYING**

PS LE 8.2.14 Supply And Install Subsurface Drains According To Drawings ..... Unit : m

The length shall be measured on the centre line of the completed subsurface drain.

The rate shall cover the cost of supplying, transporting, off-loading and installing all materials as well as for cutting, wasting, overlapping and installing of the materials where applicable.

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**PARTICULAR SPECIFICATION**

**PA: BRICKWORK AND PLASTER**

**PA1 SCOPE**

**PA1.1** This specification covers the general requirements for buildings and other masonry structures, including plastering.

**PA2 INTERPRETATION**

**PA2.1 Other relevant Standards/Specification**

This specification should be read together with SABS 1200 AA.

**PA2.2 Applicable Edition of Standards**

Each standard specification referred to in this specification shall be deemed to be the latest edition, applicable on the tender closing date.

**PA2.3 Definitions and Symbols**

For purposes of this specification, the definitions and symbols given in the National Building Regulations and Building Standards Act, 1977 (referred to further on in this specification as "Building Act"), where applicable, shall apply. (Definitions: pages 5 to 14, Symbols: page 23.)

**PA3 MATERIALS**

**PA3.1 Cement**

Cement shall conform to the requirements of SABS 471.

**PS3.2 Lime**

Lime shall be of approved manufacture, well burnt and of uniform quality conforming with SABS 523.

**PA3.3 Sand**

Sand to be used for mortar and plaster shall comply with the requirements of SABS 1090.

**PA3.4 Clay Bricks**

Clay bricks must conform to SABS 247. A sample of bricks to be used for construction must be given to Engineer for approval before construction bricks are delivered to site.

The contractor will be required to carry out necessary tests and provide certificates for compliance of the bricks with SABS 247. The cost of these tests will be deemed part of the scheduled rates and no additional payment will be made, therefore.

Best quality engineering bricks shall be used for all foundation and concealed situations.

**PA3.5 Damp-Proofing**

Material used as a dampproof course shall conform to the requirements contained either in SABS 248 or in SABS 952. Type FV fibre-felt sheets or Type C polyethylene sheets shall be supplied under the contract.

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**PA3.6 Fibre Cement Sheets**

Fibre cement flat sheets, minimum 15 mm thick, shall comply with the requirements of SABS 685.

**PA3.7 Storage**

**PS3.7.1 Cement and Lime**

Cement and lime stored on the site shall be properly protected against moisture to the satisfaction of the engineer.

**PA4 CONSTRUCTION**

**PA4.1 Brickwork**

Brickwork shall be well and regularly bonded, with no false headers and none but whole bricks except where legitimately required as closers. All bricks must be thoroughly dampened before laying and each brick is to be laid with full joints and pressed into its bed so as to squeeze out superfluous mortar and give a finished joint not exceeding 8 mm thick in the case of the face work or 13 mm thick in the case of plastered walls or work not exposed to view. All joints, both horizontal and vertical, notwithstanding any grade custom to the contrary, are to be filled solid with mortar for their full width and depth, each course being flushed with mortar, worked well down into all vertical joints before the succeeding course is laid. Horizontal joints and vertical joints of face work shall be pointed flush in manholes and catch pits, but shall be pointed and finished with a tooled recessed joint elsewhere. Plastered walls shall have the joints raked out to a depth not less than 13 mm and not more than 20 mm, and subsequently refilled with mortar of the same proportions as the original bedding mortar. In no circumstances may joints be so formed as to expose any perforation in the units.

Wire ties, where required, shall be stainless steel and are to be installed at 5 per square metre.

**PA4.2 Mortar**

The mix proportions for the mortar are given below:...

Portland cement	50 kg
Lime	0-40 l
Sand*	200 l max.

\* measured loose and damp

**PA4.3 Plastering**

Plaster shall be of the same proportions as the bedding mortar. Any other plaster mixes will be subject to the approval of the Engineer.

**PA4.4 Dampproof Courses**

The areas to be covered by dampproof courses are indicated on the drawings. Dampproof shall be laid on a surface which shall not contain any sharp objects which may perforate the membrane. The full width of the wall and the whole area under the floor is to be covered by the membrane and shall overlap by not less than 100 mm under the floor, and by not less than 150 mm under the wall. All joints shall be effectively sealed. Where shown on the drawing, the dampproof course is to be stepped up one course of brickwork in the inner skin. Proper returns are to be made at all doorframes.

**PA4.5 Window Sills**

Windowsills shall be formed as shown on the drawings and as hereafter described:

Dampproof sheeting shall be provided one brick course below the sill and shall be turned upwards and terminate behind the window frame to provide an efficient weather-tight seal.

All external sills and some internal sills, where shown, shall be formed in quarry tiles and other internal sills where shown are to be of fibre cement sheet minimum thickness 15 mm to SABS 685 with approximately 20 mm projection beyond the finished face of the walls.

External sills shall be laid to a 20° weathered slope while internal sills shall be laid horizontal.

All tiles shall be bedded in 3:1 cement mortar and neatly pointed.

**PA4.6 Lintels with Brickwork Reinforcement**

Lintels over doors, windows and openings, where ordered by the Engineer, shall be reinforced with four layers of BRC brickforce, or approved equal. The latter reinforcement shall extend a minimum of 450 mm beyond any opening. All joints in the six courses of brickwork above the opening shall be fully flushed with cement mortar. Shoring to soffits of lintels shall be left in position for at least 14 days after building the lintel and the brickwork shall be kept damp with wet bags for the whole of this period.

**PA4.7 Wall Vents**

Ventilator openings shall be formed through walls where indicated and shall be provided with double brick terracotta louvred air bricks (fitted with plastic insect screens) both externally and internally (where scheduled) set flush into the work and neatly pointed. Internal wall vents are to be of an approved plaster of paris type where scheduled.

**PA4.8 Building in Frames, etc**

Door and window frames are to be set up, built into position, bedded and pointed in cement mortar, with any necessary cutting to brickwork, fitting and making good, as the brickwork is built up. In the case of doorframes, wrought iron right angled cramps are to be fixed to doorframes and built into brickwork at every eighth course.

Where pipes, frames, brackets or other such parts pass through or have to be set into brickwork, the bricks shall be carefully cut and fitted to maintain regularity of courses and uniformity of joints, the shaped bricks being embedded and pointed to conform with the surrounding brickwork. Where such parts have to be set into position after brickwork is built, holes shall be left wherever possible, in preference to cutting out bricks, and the work shall be subsequently made good in the manner described.

**PA4.9 Floor Finishes**

**PA4.9.1 Granolithic Floor Screed**

Granolithic shall consist of one part cement, one part sand and two parts 5 mm stone chips and oxide where required, thoroughly mixed as for concrete and placed in a layer not less than 20 mm thick, levelled or graded and trowelled to a smooth uniform surface. To ensure proper bond, the concrete surface to be covered shall be clean, roughened by chipping, flushed with water and coated with cement grout just before placing of the granolithic layer. Granolithic finish is to be steel floated with V joints in squares of 1,20 m to 1,80 m, the joints extending for the full depth of the granolithic. Joints are not required in the granolithic screed where it is to be overlaid by tiles or carpeting.

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**PA4.10 Chasing Walls**

Where indicated by the electrical contractor, the construction contractor shall chase brickwork and concrete work to accommodate electrical conduit - such chasing shall precede plastering or rendering and on no account shall plastering or rendering be commenced until the electrical tubing has been installed. No horizontal or diagonal chases shall be permitted.

Elsewhere, electrical conduit shall either be cast into concrete or shall be run on the surface afterwards as may be directed by the Engineer.

**PA4.11 Weather**

In any period of interruption caused by inclement weather, and at the completion of each day's bricklaying, freshly laid brickwork should be protected.

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**PARTICULAR SPECIFICATION : PC**

**PC: PAINTING**

**PC1 SCOPE**

**PC1.1** This specification covers the general requirements for painting, including methods of preparation of materials to be painted, cleaning, priming, undercoating and finishing, and also methods by which the finished work will be measured and paid for.

**PC2 INTERPRETATION**

**PC2.1 Supporting Specification**

This specification must be read together with SABS 1200 AA

**PC2.2 Applicable Edition of Standards**

Each standard specification referred to in this specification shall be deemed to be the latest edition at the tender closing date.

**PC3 MATERIALS**

**PC3.1 Emulsion Paints for Exterior Use**

Emulsion paints for exterior use shall comply with SABS 634.

**PC3.2 Calcium Plumbate Primer**

Calcium plumbate primer shall comply with SABS 912.

**PC3.3 Undercoats for Paints**

Undercoats for air-drying protective and decorative paints shall comply with SABS 681.

**PC3.4 Structural Steel Paints**

Structural steel paints shall comply with SABS 684.

**PC3.5 Colours of Paints**

Specification for colours of paints shall comply with CKS 279.

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**PARTICULAR SPECIFICATION : PD**

**PD: DISINFECTION OF PIPELINES**

**PD 1 INTRODUCTION**

The price for testing and disinfecting pipelines and fittings is included in the scheduled items for supply and installation.

On completion of construction, after pressure testing and prior to commissioning the pipeline is to be disinfected by the contractor in accordance with this specification.

**PD 1.1 Scope of the Code of Practice**

This Code of Practice relates to the disinfection of parts used for the disinfection of complete installations.

It includes the requirements for bacteriological sampling and dosage of disinfectants, dose rates of disinfectants, disposal of chlorinated water and quality standards for bacteriological samples.

**PD 1.2 Definitions**

Within this document the term HYPOCHLORITE SOLUTION means a commercial solution of sodium hypochlorite containing 10% to 15% of available chlorine. Also, 10% HYPOCHLORITE SOLUTION means hypochlorite solution diluted one part in ten which thus has approximately 1% of available chlorine.

Within this document AVAILABLE CHLORINE and all chlorine concentrations means FREE CHLORINE available to the water environment for its disinfection.

'Water Supply Personnel' means any employee or contract or casual labour whose work includes, even temporarily, the performance of work concerned with partially or fully treated water and sources of underground water and who must possess a current certificate of medical suitability signed on behalf of the Authority.

**PD 1.3 Hygiene**

Only 'Water Supply Personnel' may undertake the procedures laid out in this Code of Practice.

**PD 1.4 Safety**

This Code of Practice does not cover the safety aspects of the construction or maintenance of installations or apparatus or of disinfection procedures.

Remember always that chlorinating agents are strongly corrosive so protect EYES AND HANDS especially.

**PD 2 GENERAL REQUIREMENTS FOR DISINFECTION OF POTABLE WATER APPARATUS**

**PD 2.1 Components and Equipment**

Clean all pipework components, equipment and tools used for repair and remove all grease or scale from components and equipment before use or assembly.

Where full chlorination and bacteriological testing is impractical, then disinfect all materials, components and equipment which could transmit contamination. Use a solution containing 1% of available chlorine (e.g. 10% chlorox or other commercial hypochlorite solution or 2% solution of bleaching powder. Contact time must exceed 20 minutes. Rinse or flush the equipment with mains water to prevent excessive corrosion.

## PD 2.2 Completed Installations

*Ensure that all water used for disinfection purposes has a free chlorine residual of at least 20 mg/ℓ.* Refer to section PD 4 and Tables 1 and 2 for volumes or dose rates.

During chlorination the pipeline shall be kept full of water.

Whenever possible keep the installation at normal operating pressure or greater during the contact period.

## PD 2.3 Portable Test Equipment

Portable test equipment which may be used in contact with potable water must be kept clean. Any equipment which is in uncertain condition or which is contaminated must be cleaned and disinfected before use.

## PD 3 MAINS

### PD 3.1 New Mains

#### PD 3.1.1 Introduction

Do not connect any new main into supply until the water from designated sampling points, having stood in the main for at least 20 hours, has met the criteria specified herein.

New mains are laid with the intention of ensuring as far as possible, the exclusion of debris and contamination, but presume at the disinfection stage that debris and contamination does exist and that this debris is resistant to disinfection, e.g. compacted soil or detritus in joints.

The disinfection procedures, which should follow pressure testing, include:

- (a) swabbing and flushing of the main
- (b) soaking of the main for a minimum period of **20 hours**, using a minimum concentration of **20 mg/ℓ** of available chlorine in mains water.
- (c) removal of excess chlorine by flushing the main

#### PD 3.1.2 Pressure Testing

Only use potable quality mains water for pressure testing new mains. Pressure testing normally follows the construction of each section of the pipeline but precedes final connection to supply. Do not rely on a single sluice valve to isolate the new main from the supply network, while the main is under pressure until disinfection and approval are complete.

#### PD 3.1.3 Swabbing and flushing

Swab all new mains after pressure testing and prior to disinfection.

After insertion of a soft foam swab, which has been soaked in 10% hypochlorite solution, recharge the pipeline at a rate less than 50 mm per second (3 m per minute) to ensure that the swab is not moved.

Open the inlet valve fully and drive the swab along the pipeline, at a velocity less than 0,5 m per second (30 m per minute), by controlling the valve at the discharge end.

When the swab reaches the discharge end of the pipeline, flush the main for at least 5 minutes to remove all excess chlorine and discoloured or dirty water. Where possible open inlet and outlet valves as fully as possible.



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If the swab removes excessive amounts of debris, then re-swab the main.

#### PD 3.1.4 Chlorination

Chlorinate all new mains to a minimum of 20 mg/ℓ available chlorine and leave to soak for a minimum of 20 hours, prior to flushing with mains water to a chlorine residual equal to that of the background level in the incoming mains water.

Tables in PD 4 show the required minimum dose rates and volumes.

To chlorinate sections of distribution main, less than about 50 m long not exceeding 150 mm in diameter, use a soft swab which has been soaked in 10% hypochlorite solution and proceed as follows:-

- Pour 1 litre of hypochlorite solution for each 1 m<sup>3</sup> of pipeline, into the end of the pipe upstream of the final connection.
- Insert the swab into the end of the upstream pipe to retain the hypochlorite solution.
- Make the final connection.
- Drive the swab past the final connection and along the pipeline, but do not allow the swab to travel at a speed greater than 0,3 metres per second (20 m per minute).
- Remove the swab and flush the main for 25 minutes.
- Close up the main prior to soaking and sampling in accordance with section PB 3.1.6.

The volume of hypochlorite needed for 50 m of pipeline is:-

50 mm - 100 ml,	75 mm - 200 ml,	100 mm - 500 ml,
150 mm - 900 ml,	200 mm - 1600 ml,	250 mm - 2500 ml.

Take all necessary care with the disposal of chlorinated water; follow the procedure laid out in PB 5.

#### PD 3.1.5 Sampling for Bacteriological Analysis

Once all pressure testing; swabbing and chlorination is complete; fill the main with clean mains water free from excessive chlorine.

Flush all hydrants, washouts and other outlets until the water is clean and free from excessive chlorine. Shut the valves and leave the main to soak for a minimum period of 20 hours.

First check with the laboratory staff of the Ugu District Municipality to determine a suitable time for collection of samples and delivery of them to the laboratory for analysis.

Then pressurise the main and take samples for bacteriological analysis in accordance with the procedure given in section PB 3.1.6. Take these samples from sampling points agreed with the Resident Engineer.

Deliver all samples to the laboratory as soon as possible. Analysis must start within six hours but store the samples in a refrigerator if the delay between taking the sample and the start of analysis is likely to exceed four hours.

Then isolate and leave the main until the results of analysis are available. In the event that the samples fail, flush the main and re-sample after a further soak period of at least 20 hours.

Repeat the above process until disinfection criteria have been satisfied.

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The costs of all necessary testing are to be borne by the Contractor.

#### PD 3.1.6 Sampling Points

Sample points should consist of a ferrule connection, with a short length of polythene piping terminating in a ½" BSP gate valve or manual air valve. Protect this sampling outlet by suitable boxing. Attach a sampling standpipe to the gate valve, disinfect the apparatus with hypochlorite solution and then flame the bib tap outlet on the standpipe. Flush out all traces of hypochlorite, check that the residual chlorine level is not greater than the normal level in the incoming mains water.

At scour points and air valves, flush out all trace of hypochlorite, check that the residual chlorine level is not greater than the normal level in the incoming mains water, then take samples.

#### PD 3.1.7 Temporary Cross Connections and Final Connections

Where a temporary cross connection supplies mains water to the new main, before making the final connection complete the disinfection procedure of the new main as set out above.

When the new main has been proved bacteriologically satisfactory the cross connection may be removed and isolated after suitable disinfection.

### PD 4 DOSAGE OF CHLORINATING AGENTS

#### PD 4.1 Sodium Hypochlorite Solution

Bulk supplies of sodium hypochlorite solution (Chlorox for instance), are supplied at 10 to 15% available chlorine. This fraction declines progressively as the hypochlorite decays to chloride, chlorate and oxygen. Assume in practice that there is only 10% available chlorine.

Assuming 10% available chlorine, and using mains water having a zero chlorine demand, then the following values give estimates of the dilutions required.

- 10% hypochlorite solution (1 part hypochlorite solution in 10 parts solution) contains 10,000 mg available chlorine per litre of 10 kg available chlorine per cubic metre.
- 20 mg available chlorine per litre is equivalent to 200 ml of hypochlorite solution per cubic metre of water.
- 0,5 mg available chlorine per litre is equivalent to 5 ml of hypochlorite solution per cubic metre of water.

#### PD 4.2 Chlorine Gas

Chlorine gas, dosed into water by weight, is likely to be about 98% available chlorine. Therefore a direct measurement gives a reasonable estimate.

- Disinfection of replacement parts with chlorine gas is not a practicable possibility.
- 20 mg Chlorine gas (by weight) per litre for disinfection of complete installation is equivalent to 20 grams per cubic metre.
- 0,5 mg Chlorine gas (by weight) per litre of water is equivalent to 0,5 grams per cubic metre.

#### PD 4.3 Bleaching powder, granules and tablets

Bleaching powders, granules or tablets based on Calcium hypochlorite contains 50% to 70% of available chlorine by weight. These materials must be stored under dry conditions. During storage

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some available chlorine is lost. Follow the manufacturers instructions particularly concerning the shelf life of the material and dose rate of the tablets.

For calculation purposes presume a maximum value of 50% available chlorine i.e. 1 gm of powder, granules etc in 1 litre of water provides 500 mg per litre available chlorine.

**PD 4.4 Dose rates**

Tables 1 and 2 provide estimates of the minimum dose rates of sodium hypochlorite solution, chlorine gas or bleaching powder, tablets or granules to achieve available chlorine levels of 20 mg per litre when dilute with mains water which has a zero chlorine demand.

**Table 1 - dosage for 1,000 m of pipeline to give 20 mg available chlorine per litre**

Pipe Diameter	Volume of 1000 m of pipeline	Weight of bleaching powder granules or tablets to give 20 mg/l	Weight of chlorine to give 20 mg/l	Volume of hypochlorite solution to give 20 mg/l
mm	m <sup>3</sup>	gm	gm	litres
50	1,9	80	40	0,4
75	4,4	180	90	0,8
100	7,9	320	160	1,5
150	17,7	700	350	3,5
200	31,4	1,260	630	6,2
250	49,1	2,000	980	9,7
300	70,7	2,800	1400	14,0
350	96,2	3,800	1900	19,0
400	125,6	5,000	2500	24,6
500	196,3	7,800	3900	38,4
600	282,6	11,200	5600	55,4

**Table 2 - dose rates for 20 mg available chlorine per litre**

Flow rate in pipeline*		Hypochlorite solution injection rate for 20 mg/l		Chlorine injection rate for 20 mg/l
litres/sec	m <sup>3</sup> /hr	litres/hr	m <sup>l</sup> /sec	gm/hour
1	3,6	0,7	0,2	72
2	7,2	1,4	0,4	144
3	10,8	2,2	0,6	216
4	14,4	2,9	0,8	288
5	18,0	3,6	1,0	360
6	21,6	4,3	1,2	430
7	25,2	5,0	1,4	500
8	28,8	5,8	1,6	576
9	32,4	6,5	1,8	650

\* For flows greater than 9 litres/sec the dose rates can be calculated by multiplying by an appropriate factor of 10 e.g.

186 litres/sec = 100 + n 80+ 6 litres/sec  
 hypochlorite solution = 70+ 58 + 4.3 = 132,3 litres/hr

**PD 5 DISPOSAL OF CHLORINATED WATER**

**PD 5.1 Introduction**

When the pipeline has passed all disinfection criteria it must be drained without causing hazard.

**PD 5.2 Methods of Disposal**

**PD 5.2.1 Overland**

Explore the possibility of soaking away disinfection water on adjacent land in rural situation.

**PD 5.2.2 Foul sewers**

Where disinfection water is discharged into a combined or foul sewer, no de-chlorination is normally necessary but in the former case take care that the rate of discharge of disinfection or flushing water avoids operation of storm sewage overflows and/or the creation of a hazardous atmosphere within the sewer.

**PD 5.2.3 Watercourses**

In rural areas where disinfection water is discharged to watercourses, either directly or through surface water drains, do not permit a free chlorine concentration in the receiving stream in excess of 0,1 mg/l about 50 metres downstream of the point of discharge. If the discharge is into a ditch, which is not a spawning ground or a nursery or a fishing stream, take advantage of that ditch to mop up chlorine provided that in a significant stream the earlier mentioned limit is not exceeded. In these circumstances use flush water to dilute the chlorinated water whenever possible. Avoid discharge of disinfection water to the head of a watercourse because this area is probably a spawning ground.

**PD 5.2.4 Disposal of large volumes**

When disposing of large volumes of disinfection water from very long lengths of new main, or in any cases of doubt, consult through the Resident Engineer, the laboratory staff of the Employer.

**PD 5.3 De-chlorination**

There is no objection to the use of thiosulphate or sulphur dioxide as de-chlorination agents. In some cases, at least partial de-chlorination may be achieved by discharge over land. In all cases consult the Resident Engineer.

**PD 6 QUALITY STANDARDS AND REPORTING PROCEDURES**

**PD 6.1 New Mains**

**PD 6.1.1 Bacteriological Standards**

**No coliform organisms** shall be detected in 100 ml's of the sample.

The increase in the yeast agar plate count when compared with that of the incoming water shall generally be less than 50 and never more than 150 colonies per ml when incubated at 37°C for 24 hours.

**PD 6.1.2 Procedure for Unsatisfactory Samples**

Whenever even one E.Coli, or 5 or more coliforms per 100 ml are detected, re-chlorinate the main or serve reservoir. When E. Coli are not detected but the total coliform count is less than 5 per 100 ml flush and re-sample the main.

**PD 6.1.3 Physical Standard**

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If the sample is unusually coloured, turbid or frothy flush the main until acceptable. If this condition is severe, re-sample the main but do not put into service until the samples have passed the required standards.

**PD 6.2 Reporting Procedure**

Records of disinfection are to be handed to the Resident Engineer.

**PARTICULAR SPECIFICATION PF**

**PF: VALVES**

**PF 1 GATE VALVES**

Gate Valves shall bear the official mark of SABS and be SABS approved. They shall comply with SABS 664 for waterworks pattern valves of the types, classes and sizes listed in the Schedule of Quantities and shall be provided with the following:

	<b>Description</b>	<b>Specification</b>
1	Flanges	Double flanged, to be in accordance with and drilled off-centre to SABS 1123, Table 1600, 2500 or 4000 as scheduled.
2	Spindles	Non rising, bronze or stainless steel with spindle nut either bronze or gunmetal
3	Handwheels	Direction of rotation for opening valves shall be clockwise when viewed from the top and appropriate wording must be embossed at the top indicating direction of "close" and "open" with arrow heads
4	Tests	Valves to be subjected to "closed end" and "open end" pressure tests to one and half times the working pressure. Valve body shall be tested to twice working pressure. Under all the tests, no leakage to occur
5	Paint	As in PF4
6	Other	<ul style="list-style-type: none"><li>• Type B gunmetal trim</li><li>• Valves should permit repacking of the gland whilst valve is under pressure</li><li>• Factory test certificates to be provided with each valve</li><li>• Rates in the schedule of quantities to include requirements to comply with specification</li></ul>

**PF 2 REFLUX VALVES**

Reflux valves shall, except where otherwise specified, be double flanged single door swing type and shall be fitted with gun metal seats and bronze hinge and clack pins. In the case of reflux valves to be mounted horizontally, the design shall be such that the gate rests against the seat in the absence of flow or of differential pressure, without the aid of springs or external counterweights. Reflux valves shall comply with the requirements of SABS 144 for working pressures as required for each application, but not less than 1600 kPa working pressure.

**PF 3 AIR VALVES**

**PF 3.1 General**

The materials and workmanship employed in the manufacture of air valves shall be of a similar standard to that set out in SABS 664 for waterworks pattern gate valves and they shall be provided with individual test certificates for each valve from the manufacturer; all valves are to be inspected, and the hydraulic tests witnessed, by an Inspector to be appointed by the Engineer, and the tendered rates for the valves shall include for making arrangements for independent inspections.

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The Inspectors' fee and recoverable expenses will be for the account of the Employer, fees and expenses arising from abortive or repeat visits due to non-compliance with the specified requirements will be for the Contractor's account and will be deducted from amounts due to the Contractor.

#### PF 3.2 Types of Air Valves

Air Valves shall be standard types (epoxy coated flanges; stainless steel sleeve, bolts, nuts, studs etc), of the double orifice type, and shall be equal or similar to the "Vent-O-Mat" (RBX series: 50 mm dia. valves: 050 RBXc2511; 80 mm valves: 080 RBXc1601) type in which a small orifice, manufactured from Grade 316 stainless steel and having a minimum orifice size of 2,0 mm diameter, shall be capable of releasing accumulations of air at all pressures throughout the specified working pressure range and shall be drop-tight at 0,5 Bar. The large orifice shall be suitable for admitting or expelling large quantities of air during emptying and filling of the pipeline. The opening of the valve (to atmosphere) shall be enclosed by a stainless-steel mesh which has been fixed into the valve body to prevent the entry of small insects or vermin into the valve.

All welding of stainless steel shall be carried out in workshops dedicated to the fabrication of stainless-steel products. Care shall be taken that the correct welding rods and approved welding procedures have been used for each application, and the Engineer shall have the right to request a certificate from the manufacturer in which the weld procedures used for the manufacture of valves supplied are stated.

All welds and weld beads, internal and external, shall be smoothed down by grinding and buffing. All stainless steel shall be pickled and passivated before the valve is assembled and tested.

#### PF 3.3 Testing

Each air valve is to be subjected to the following tests at the factory:

- (a) First, fill the valve with water and apply the factory test pressure through the inlet of the valve. Under this condition there shall be no weeping from any part of the valve.
- (b) Second, drain the valve and refill the valve with water and apply the maximum working pressure through the inlet of the valve and maintain for at least five minutes. Under this condition there shall be no loss of water from the valve.
- (c) Third, gradually reduce the pressure applied under (b) above to atmospheric pressure, empty the valve and refill slowly expelling the air through the valve until it is full of water. Raise the pressure to the minimum working pressure, maintain that pressure for at least five minutes and again there shall be no loss of water from the valve.
- (d) Fourth, maintain the minimum working pressure applied in (c) above, isolate the water inlet and introduce small amounts of compressed air into the valve without lowering the pressure in the valve. The lower float shall drop away from the upper float when sufficient air has accumulated in the valve. As soon as the accumulated air in the valve has discharged through the small orifice, the valve shall again close to a watertight condition. This process shall be repeated for at least five different pressures which are equally spaced between the specified minimum and maximum operating pressures, and the valve shall close automatically when all the air has escaped without any dribbling and shall have a drop-tight shut-off.

**PF 3.4 Table of Particular Requirements for Air Valves**

Scheduled Items			
Nominal diameter (mm)	80	80	25/50
Class	40	25	16
Flange Size and Rating	SABS 1123 Table 4000	SABS 1123 Table 2500	SABS 1123 Table 1600
Flange Drilling	SABS 1123 Table 4000	SABS 1123 Table 2500	SABS 1123 Table 1600
Factory Test Pressure (metres head of water)	800	500	320
Field Test Pressure (metres head of water)	as for pipeline	as for pipeline	as for pipeline
Working Pressure (metres head of water) :			
(a) Maximum	400	250	160
(b) Minimum	10	10	10

**PF 4 PAINTING OF VALVES**

PF 4.1 The cleaning and painting of valves as specified hereunder is to be carried out at the factory prior to despatch to site.

PF 4.2 All cast iron surfaces of every valve shall be prepared for painting to a thoroughly clean condition free of all grease and deleterious matter. Steel surfaces shall be prepared in accordance with Swedish Standard SIS 05 5900 for a Sa 2.5 finish.

PF 4.3 Internal surfaces shall then be treated with two coats of Copon Hicote 151E or other approved non-toxic epoxy resin paint to give a total minimum dry film thickness of 160 micrometres; both coats being applied within 48 hours of commencement of painting.

PF 4.4 External surfaces shall, immediately after cleaning, be treated with one of the following alternative paint systems:

- (a) System 1 - for valves situated in underground chambers or exposed conditions.

Apply three coats of an approved epoxy coal tar paint to give a minimum total dry film thickness of 240 micrometres; all three coats being applied within 72 hours of commencing the first coat.

- (b) System 2 - for valves situated in pump stations etc.

Apply one coat of zinc chromate primer followed by one coat of undercoat tinted where necessary, and a final coat of best quality gloss enamel. The total dry film thickness of the system shall be not less than 200 micrometres.

PF 4.5 Non-ferrous metal or stainless-steel surfaces shall not be painted.

PF 4.6 After erection on site all valves shall be cleaned and the paint work refurbished where necessary to restore the condition to that at the time of leaving the factory.

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**PF 5 PAYMENT**

The prices quoted for all valves are to include for independent factory testing of valves, which test will be witnessed by Inspectors appointed by the Engineer.



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**PARTICULAR SPECIFICATION**

**PZ: ENVIRONMENTAL SPECIFICATION**

**EMPLOYER'S ENVIRONMENTAL MANAGEMENT SPECIFICATION FOR ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION PROJECTS**

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**PZ EMPLOYER'S ENVIRONMENTAL MANAGEMENT SPECIFICATION FOR ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION PROJECTS**

**PZ1 INTRODUCTION**

**PZ1.1 SCOPE**

This specification is additional to the South African Bureau of Standards Standardised Specification for Civil Engineering Contracts and must be read in conjunction with the said specification.

This specification covers the principles, responsibilities and requirements generally applicable to implement effective environmental management during the execution of any construction contract. The aim of this specification is to ensure that construction activities are conducted in an environmentally and socially responsible manner.

**PZ1.2 INTERPRETATIONS**

This specification contains clauses that are generally applicable to the implementation of effective environmental management on construction contracts. Interpretations of, and variations to, this specification are set out in the project specification.

**PZ1.2.1 Supporting specifications:**

Reference is made to the SABS 1200 standards which are to be read in conjunction with this specification. All aspects of these SABS requirements which are relevant to environmental management during construction contracts will apply.

**PZ1.2.2 Principles**

The following principles should be considered at all times during construction phase activities:

- The Environment is considered to be composed of both biophysical and social components.
- Construction is a disruptive activity and all due consideration must be given to the environment, particularly the social environment, during the execution of a project to minimise the impact on affected parties.
- Minimisation of areas disturbed by construction activities will minimise many of the construction related environmental impacts of the project and reduce rehabilitation requirements and costs.
- As minimum requirements, all relevant standards relating to international, national, provincial and local legislation, as applicable, shall be adhered to. This includes requirements relating to waste emissions (e.g. hazardous, airborne, liquid and solid), waste disposal practices, noise regulations, road traffic ordinance etc.
- All effort should be made to minimise, reclaim or recycle 'waste' material.

**PZ1.3 DEFINITIONS**

For the purpose of this specification, the definitions given in SABS 1200 shall apply.

Additional definitions which shall apply to this specification are as follows:

Environmental Control Officer: Either an Employer's staff member or an Environmental Consultant assigned to the project on a part or full-time basis. The Environmental Control Officer will be part of the Project staff and will advise the Engineer on all environmental matters relating to the works, in terms of this specification and the project specification, if applicable.

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Environmental Officer: Either an Employer's employee (e.g. Quality Assurance Inspector) or Consultant designated to monitor the implementation and compliance with the environmental specifications and environmental management plan on a daily basis.

Cleared surface: "surface vegetation" as referred to in SABS 1200 C 2.3 will be deemed to be any woody or herbaceous vegetation but exclude grasses, sedges, rushes and reeds. Clearing and grubbing shall for the purpose of this specification mean the removal of all woody and herbaceous vegetation including stumps, but excluding grass and groundcover vegetation.

Engineer: Is to read Engineer or Supervisor (in the case of the NEC contract), whichever is applicable to the Contract.

Interested and Affected Parties (IAP): All persons who may be affected by the project either directly or indirectly, or who have an interest or stake in the area to be affected by the project. IAPs include landowners, tribal or local authorities, public interest groups etc.

Liquid Waste Stream: Any reagent solutions, fuels, oils, greases, contaminated run-off, sewerage and wash water, etc.

Open Trench: Open trench will, for the purpose of this specification, be deemed to include: clearing and grubbing; stripping of topsoil; trenching; placing of bedding; pipe-laying; placing of selected fill; backfilling to ground level; removing excess material; construction of cross berms to channel water (if required); and replacement of topsoil to final finished level (refer to Figure 1: Appendix A).

Progressive Reinstatement: Reinstatement of disturbed areas to topsoil profile on an ongoing basis, immediately after selected construction activities (e.g. backfilling of a trench) are completed. This allows for passive rehabilitation (i.e. natural recolonisation by vegetation) to commence. See also 'Open Trench' and 'Rehabilitation'.

Project Manager: The person responsible for co-ordinating and integrating activities across multiple, functional lines.

Rehabilitation: Rehabilitation is defined as the return of a disturbed area to a state which approximates the state (where possible) which it was before disruption. Rehabilitation for the purposes of this specification is aimed at post-reinstatement revegetation of a disturbed area and the insurance of a stable land surface. Revegetation should aim to accelerate the natural succession processes so that the plant community develops in the desired way, i.e. promote rapid vegetation establishment.

Riparian vegetation: Vegetation occurring on the banks of a river or stream (i.e. vegetation fringing a water body). In this specification, riparian vegetation in terms of removal, storage and replacement (see PZ3 17.1 and PZ3 17.2), is only applied to sedge, grass, groundcover, reed, bulrush, or herbaceous component of riparian vegetation and excludes the woody component.

Sedges: Grass-like plants growing in wetland/ marshy areas or adjacent to water.

Subsoil: Subsoil is the soil horizons between the topsoil horizon and the underlying parent rock. Subsoil often has more clay-like material than the topsoil. Subsoil is of less value to plants, in terms of nutrient (food) and oxygen supply, than topsoil. When subsoil is exposed it tends to erode fairly easily.

Timeous: At least 5 working days prior to an activity.

Topsoil: This is defined as the A horizon of the soil profile. Topsoil is the upper layer of soil from which plants obtain their nutrients for growth. It is often darker in colour, due to the organic (humic) fraction. Topsoil is deemed for the purposes of this specification as the layer

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of soil from the surface to the specified depth required for excavation (see PZ3 5.3, relevant SABS 1200 clause and project specification). Where topsoil is referred to, it is deemed to be both the soil and grass / ground cover fraction. (see 'Cleared Surface')

Veld: This is defined for the purpose of this specification as unimproved natural vegetation areas (e.g. grasslands).

Water body: Any open body of water including streams, dams, rivers, lakes, and the sea.

Wetland: A seasonally, temporally, or permanently wet area which also may exhibit a specific vegetation community. It is often marshy in character.

Wetland Vegetation: Vegetation which is indicative of a wetland environment - for example, sedges, rushes, reeds, hydrophilic grasses and groundcovers, but for the purposes of this specification excludes woody species.

Xeriscaping: Landscaping with vegetation which has a low water usage. The objective is to conserve as much water as possible, whilst still beautifying an area (i.e. conservation and aesthetics). Concept embraces utilising indigenous as opposed to exotic plants.

#### PZ1.4 ABBREVIATIONS

DWAF	: Department of Water Affairs and Forestry
ECO	: Environmental Control Officer
EMP	: Environmental Management Plan
EMPR	: Environmental Management Programme Report
EO	: Environmental Officer
IAPs	: Interested and Affected Parties
IEM	: Integrated Environmental Management
MSDS	: Material Safety Data Sheet
NEC	: New Engineer Contract or The Engineering and Construction Contract

Ⓜ : Indicates the project specification must be referred to, to clarify the clause.

#### PZ1.5 DRAWINGS

Drawings referred to in this specification are included in C4.4 Drawings of Section C4 Site Information.

#### PZ1.6 FORMS

Forms referred to in this specification are included in Part T2 or attached to this environmental specification.

#### PZ1.7 CONDITIONS OF CONTRACT

##### PZ1.7.1 Duties and Powers of the Project Manager

The Project Manager is ultimately responsible for ensuring compliance with the environmental specification and upholding the Employer's Environmental Policy on a project.

The Project Manager:

- arranges information meetings for or consults with IAPs about the impending construction activities;
- may on the recommendation of the Engineer and /or Environmental Officer order the Contractor to suspend any or all works on site if the Contractor or his Subcontractor/ supplier fails to comply with the said specifications;
- maintains a register of complaints and queries by members of the public at the site office

as per attached pro-forma. This register is forwarded to the Environmental Control Officer on a monthly basis.

**PZ1.7.2 Duties and Powers of the Engineer / Supervisor (NEC)**

The Engineer or Supervisor is responsible for:

- enforcing the environmental specification on site;
- monitoring compliance with the requirements of the specification;
- assessing the Contractor's environmental performance in consultation with the Environmental Officer from which a brief monthly statement of environmental performance is drawn up for record purposes;
- documenting, in conjunction with the Contractor, the state of the site prior to construction activities commencing. This documentation will be in the form of photographs or video record.

**PZ1.7.3 Duties and Powers of the Environmental Control Officer**

The Environmental Control Officer:

- briefs the Contractor about the requirements of the Environmental Specification and/ or Environmental Management Plan, as applicable;
- advises the Project Manager and Engineer/ Supervisor about the interpretation, implementation and enforcement of the Environmental Specification and other related environmental matters;
- attends site meetings, as necessary;
- monitors the Constructor's compliance with this specification and the project environmental specification as applicable;
- undertakes periodic audits of the effectiveness of the environmental specifications on the site;
- communicates environmental policy issues to the Project Manager;
- provides technical advice relating to environmental issues to the Engineer/ Supervisor and Project Manager;
- reports on the performance of the project, in terms of environmental compliance.

**PZ1.7.4 Duties and Powers of the Environmental Officer**

The Environmental Officer:

- attends site meetings;
- monitors the site for compliance with the Environmental Specification and EMP;
- reports on the performance of the project in terms of environmental compliance to the ECO and Project Manager as per the pro-forma attached;
- liaises with the ECO on matters of policy and those requiring clarity and advice.

**PZ1.8 Extent of the Contractor's Obligations**

The Contractor is required to:

- provide information on previous environmental management experience and company environmental policy;
- supply method statements for all activities requiring special attention as specified and/or requested by the Project Manager, Environmental (Control) Officer and/or Engineer during

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the duration of the Contract;

- be conversant with the requirements of this environmental specification and the project specification as applicable;
- brief his staff about the requirements of the environmental specification;
- comply with requirements of the Environmental (Control) Officer in terms of this specification and the project specification, as applicable, within the time period specified;
- ensure any sub-Contractors/ suppliers who are utilised within the context of the contract comply with the environmental requirements of the Employer, in terms of the specifications. The Contractor will be held responsible for non-compliance on their behalf;
- bear the cost of any delays, with no extension of time granted, should he or his Sub-Contractors/ Suppliers contravene the said specifications such that the Engineer orders a suspension of work. The suspension will be enforced until such time as the offending party(ies), procedure, or equipment is corrected;
- bear the costs of any damages/ compensation resulting from non-adherence to the said specifications or written site instructions;
- comply with all applicable legislation in terms of 7.6 below;
- ensure that he informs the engineer timeously of any foreseeable activities which will require input from the Environmental (Control) Officer.

The Contractor will conduct all activities in a manner that minimises disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment.

#### **PZ1.7.6 Compliance with Applicable Laws**

The supreme law of the land is "The Constitution of the Republic of South Africa", which states:

*"Every person shall have the right to an environment which is not detrimental to his or her health or wellbeing"*

Laws applicable to protection of the environment in terms of Environmental Management (and relating to construction activities) include but are not restricted to:

Animals Protection Act, Act No 71 of 1962  
Atmospheric Pollution Prevention Act, No 45 of 1965  
Conservation of Agricultural Resources Act, No 43 of 1983  
Environmental Conservation Act, No 73 of 1989  
Environmental Planning Act, Act No 88 of 1967  
Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, No 36 of 1947  
Forest Act, No 124 of 1984  
Forest and Veld Conservation Act, Act No 13 of 1941  
Hazardous Substances Act, No 15 of 1973  
Lake Areas Development Act No 34 of 1975  
Land Survey Act, No 9 of 1921  
Minerals Act, No 50 of 1991  
Mountain Catchment Act, No 63 of 1970  
National Monuments Act, No 28 of 1969  
National Parks Act, No 57 of 1976  
National Resources Development Act, Act no 51 of 1947  
Occupational Health and Safety Act, No 85 of 1993  
Provincial and Local Government Ordinances and Bylaws  
Soil Conservation Act, Act No 76 of 1969  
Water Act, No 54 of 1956  
Water Services Act No 108 of 1997  
and all regulations framed thereunder and amendments there to.

**PZ1.7.7 Compliance with the Environmental Specification**

The Contractor is deemed not to have complied with the Environmental Specification if:

- within the boundaries of the site, site extensions and haul/ access roads there is evidence of contravention of clauses;
- if environmental damage ensues due to negligence;
- the Contractor fails to comply with corrective or other instructions issued by the Project Manager or Engineer within a specified time,
- the Contractor fails to respond adequately to complaints from the public.

Application of a penalty clause will apply for incidents of non-compliance. The penalty imposed will be per incident. Unless stated otherwise in the project specification, the penalties imposed per incident or violation will be:

Failure to demarcate working servitudes	R1000
Working outside of the demarcated servitude	R2000
Failure to strip topsoil with intact vegetation	R1000
Failure to stockpile topsoil correctly	R500
Failure to stockpile materials in designated areas	R500
Pollution of water bodies (including increased suspended solid loads)	R1000
Failure to control stormwater runoff	R1000
Failure to provide adequate sanitation	R500
Unauthorised removal of woody vegetation	R2000
Failure to erect temporary fences	R500
Failure to provide adequate waste disposal facilities and services	R500
Failure to reinstate disturbed areas within the specified time-frame	R3000
Failure to rehabilitate disturbed areas within the specified time-frame	R3000
Any other contravention of the project specific specification	R400
Any other contravention of the particular (general) environmental specification	R300

**PZ2 SITE ESTABLISHMENT AND HOUSEKEEPING**

**PZ2.1 LAYOUT**

The Contractor will take into account any of the limitations identified in the project specification with regard to establishment of site, in particular the location of access routes, and establishment layout.

Notwithstanding the provision of a project specification, the Contractor will provide the Project Manager and Environmental Control Officer with a layout design of the site indicating the position of all of the following, as applicable: offices, ablution facilities, storage areas, workshops, laboratories, batching plant, particulate matter stockpile area (i.e. soil/ granular chemicals/ cement fines etc), waste disposal facilities, hazardous substances storage area, access routes, etc. This layout plan is to be submitted prior to site establishment for

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acceptance. Any changes to this plan require review by the Project Manager in conjunction with the ECO.

The Contractor will take into account prevailing wind directions when designing the site layout to minimise impacts due to dust, unpleasant odours etc.

The Contractor will take into account the positions of residences when designing the site layout in order to minimise noise impacts on the residents.

Site security lighting is to be positioned such that the direct beam is focused away from residential properties and does not pose a nuisance or danger to road users.

No site establishment will be allowed within 100 m of a water body or drainage channel or on a flood plain unless approved by the Environmental (Control) Officer or specified in the project specification.

#### **PZ2.2 SITE CLEARANCE**

No trees or shrubs may be removed without the prior permission of the Environmental Officer, unless in keeping with the final site reinstatement and rehabilitation plan.

Topsoil is to be stripped from all areas where permanent or temporary structures and access roads are to be constructed. Topsoil conservation is to be in terms of clause PZ3 5.3 of this document.

#### **PZ2.3 SERVICES**

##### **PZ2.3.1 Sanitation**

Portable chemical toilets are to be utilised at site unless a connection to sewer is possible or a proper septic tank system is installed. In the case of the septic tank, the installation will require the relevant approvals from the local authority and will require removal upon completion of the contract, unless otherwise directed.

Sanitation facilities will be located within 100 m from any point of work, but not closer than 50 m to a water body.

##### **PZ2.3.2 Solid Waste Facilities**

Facilities for solid waste collection are to be provided. These are to be at least a 200 l drum and clearly identified as the point for waste disposal.

Waste is to be separated into paper, glass and metal with separate collection points for each. The Contractor will ensure that the appropriate recycling Contractors receive this waste.

The Contractor is to institute a daily litter collection programme. The collected waste is to be disposed of regularly and proportionately to its generation at a site designated for waste disposal.

No burning will be permitted on any site unless by approved incineration methods and in a low risk fire area. In the case of incineration, ash is to be co-disposed with spoil in a designated spoil dump.

No burying of waste will be allowed on any site.

##### **PZ2.3.3 Cooking and Heating Facilities**

No open fires will be allowed anywhere on site.

Contained fires (i.e. in a fire drum) will be allowed for heating and cooking only in designated areas, in other cases cooking is restricted to gas or electrical equipment.



## **PZ2.4 FUELS, HAZARDOUS SUBSTANCES AND OTHER LIQUID POLLUTANTS**

### **PZ2.4.1 Storage and handling**

All potentially hazardous raw and waste materials are to be handled by trained staff and stored on site in accordance with manufacturer's instructions and relevant legal requirements. The product MSDS is to be lodged with the Engineer.

Storage and handling areas for fuels, lubricants, chemicals and other hazardous substances are to be paved with concrete to prevent accidental contamination of the soil. Alternatively, an impermeable liner may be placed beneath above-ground storage tanks. The integrity of the liner is to remain intact for the duration of the contract, until removal.

Open storage vessels, for example shutter lubricant drums, are to be stored under cover to prevent 'splash' contamination.

All storage areas are to be bunded (with at least sandbags) and have a peripheral collection drain, with oil interceptors (if required).

The bunded area is to be sufficiently large to contain a spillage equivalent to the volume of one container of the substances stored.

All products to be dispensed from 200 litre drums will be done so with appropriate equipment, and not dispensed by tipping of the drum.

Daily checks are to be conducted on the dispensing mechanism of above-ground storage tanks to ensure the timeous identification of faults.

Collection containers (e.g. drip trays) are to be placed under all dispensing mechanisms of hydrocarbon or hazardous liquid substances to ensure contamination from leaks and dispensing is contained.

The dispensing mechanism of diesel and petrol storage tanks is to be stored in a container when not in use.

### **PZ2.4.2 Control of pollutants**

A drainage diversion system is to be installed to divert runoff from areas of potential pollution, e.g. batching area, vehicle maintenance area, workshops, chemical and fuel stores, etc if applicable.

Contaminated runoff and wastewater is to be directed into a collection system (e.g. sump, attenuation dam, PVC porta-ponds etc.) for treatment or collection and disposal. The final collection point (e.g. sump) is to be PVC lined.

Collected contaminated runoff/ wastewater is to be pumped out of the final collection point and disposed of at an appropriate landfill site. Sump liners are to be treated in the same manner.

The treated wastewater, effluent and contaminated runoff may require analysis prior to discharge as detailed in the project specification or instructed by the Environmental Officer. Details regarding proposed methods for treatment of pollutants are to be submitted to the Environmental (Control) Officer for acceptance upon award of the Contract.

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Any spillages, irrespective of their size, are to be contained and cleaned up immediately. The Pollution Control section may provide technical assistance for clean-up, if required. No spills may be hosed down into a stormwater drain or sewer.

Use of specialised clean-up techniques and/ or products may be required depending on the spill. This will be instructed by the Environmental Control Officer. These will be to the Contractor's cost.

#### **PZ2.5 GENERAL**

Site staff are not permitted to use any open water body or other natural water source (e.g. springs) for purposes of bathing, or the washing of clothes, machinery or vehicles. Nor draw water from a spring without the permission of the community utilising that spring.

#### **PZ2.6 MEASUREMENT AND PAYMENT**

Measurement and payment for compliance with clauses PZ2.1 to 5 of the specification are deemed to be fully included in the Contractor's rates for fixed and time related Preliminary and General Items scheduled under SABS 1200 A or AA.

#### **PZ3 CONSTRUCTION**

##### **PZ3.1 CONSTRUCTION METHODS AND PROGRAMME**

###### **PZ3.1.1 Construction Method**

The Contractor will provide method statements for construction activities (14 working days prior to the activity commencing) relating to the following environments and those listed in the project environmental specification, unless methods have been prescribed in this or the project environmental specification:

- rivers, streams, or any other open water body;
- wetlands;
- access roads (see PZ3.13 below);
- steep slopes (i.e. steeper than 1:4) or less if friable material is present;
- indigenous bush/ forest;
- close proximity (i.e. 50 m or less) to a residential dwelling;
- drilling and/or blasting of rock.

If a construction method employed by the Contractor is not environmentally acceptable to the Employer, the Contractor may be instructed to cease the utilisation of that method in favour of a more environmentally acceptable one, proposed either by himself or the Employer.

###### **PZ3.1.2 Construction Programme**

The Contractor will programme construction so as to minimise the impact on the environment and provide this programme to the Environmental Control Officer for perusal and acceptance at the onset of the contract period. The Environmental Control Officer is to be made aware of any amendments to the construction programme or alterations to the scope of work in order that their impacts on the environment can be assessed.

The Contractor (through the Project Manager) will ensure that all affected landowners/ authorities are advised of the proposed programme at the beginning of the contract period.

##### **PZ3.2 AREAS OCCUPIED / DEMARCATION OF SITE**

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Routes for temporary access and haul roads are to be located within the approved demarcated areas and vehicle movement is to be confined to these roads. Movement of vehicles outside the designated working areas is not permitted without authorisation from the Engineer.

All construction activities are restricted to working areas designated on the drawings and/or demarcated and approved by the Engineer. Materials including spoil are stockpiled at designated areas.

Any areas disturbed outside of the demarcated areas or without permission of the Environmental (Control) Officer or Engineer will be subject to reinstatement and rehabilitation (as per PZ4 below) to the Contractor's cost.

In terms of pipeline projects, a general maximum working servitude width of 15 m will apply for machine excavation unless otherwise indicated in the project specification. A maximum width of 6 m will apply for manual excavation. These maximum working servitude widths may vary depending on the sensitivity of the environment, as detailed in the project specification.

In sensitive biophysical environments, for example wetlands, indigenous forest / bush, pristine natural grasslands, and sensitive social environments, as defined in the project specification or by the Environmental Control Officer, the working servitude is reduced as indicated in the project specification.

The working servitude shall contain all construction related activities, including, stockpiling of materials, placing of toilets, vehicle movement areas, etc.

Demarcation of linear projects (executed with machine excavation) and features (e.g. pipelines, access roads, etc.) will be by means of wooden stakes. These stakes will be at least 1 m high, painted white and placed at least every 15 m, on either side of the linear feature, in all areas where works are occurring. Progressive movement of stakes is required as linear projects progress.

In the case of a fenced site, the boundary fences will be denoted as the outermost limit of the site, but internal areas may be demarcated with stakes as above. The site boundaries of non-fenced, but 'contained' projects are to be delineated using stakes or temporary fencing, depending on the hazard which that site poses.

#### **PZ3.3 SUPPLY OF WORKS FACILITIES**

No water may be abstracted from water bodies for the purposes of construction, without approval of the Engineer in consultation with the Environmental Control Officer.

#### **PZ3.4 CLEANLINESS**

SABS 1200 AD, clause 5.2.4, second sentence, is to read: "No rubbish or debris shall be deposited below the full supply level (FSL)."

#### **PZ3.5 SITE CLEARANCE**

##### **PZ3.5.1 Clearance**

Spoil sites will require clearing and grubbing in addition to those areas in terms of SABS 1200 C 5.1.

The site shall only be cleared immediately prior to construction activities commencing i.e. at the last practicable stage.

No trees or indigenous shrubs may be removed without the prior permission of the Environmental (Control) Officer, unless in keeping with the final site reinstatement and rehabilitation plan.

**PZ3.5.2 Disposal of materials**

Material obtained from clearing and grubbing operations shall be disposed of at appropriate municipal disposal facilities. They are not to be disposed of as per Paragraph 1 of Sub-clause 3.1 of SABS 1200 C.

Wood obtained from clearing and grubbing operation remains the property of the landowner/ community and must be stacked at sites designated by relevant person. The Contractor will be required to remove and dispose of any wood from site at a designated site for vegetation disposal, should the landowner/ community not require it.

All tree trunks and branches of diameter greater than 50mm are to be cut into lengths not exceeding 2400mm.

Brush wood (i.e. < 50mm diameter) is to be disposed of or utilised as specified in the project specification or upon instruction of the Engineer.

**PZ3.5.3 Conservation of topsoil**

The Contractor is required to strip topsoil (as defined in this specification) together with grass, groundcover and sedges from all areas where permanent or temporary structures are located, construction related activities occur, and access roads are to be constructed, etc. The depth to which topsoil will be stripped shall be 200mm unless stated otherwise in the project specification.

Topsoil is to be handled twice only - once to strip and stockpile, and secondly to replace, level, shape and scarify.

Topsoil is to be replaced along the contour.

Topsoil is to be replaced by direct return (i.e. replaced immediately on the area where construction is complete), rather than stockpiling it for extended periods. This is feasible for progressive construction (e.g. pipelines), but not necessarily so for reservoirs, site establishments, dams, etc.

Topsoil stockpiles are not to exceed 2 m in height.

Topsoil stockpiles are to be maintained in a weed free condition (i.e. no 'broad-leafed' plants regarded as weeds in terms of the Conservation of Agricultural Resources Act No 43 of 1989, or those plants regarded as a 'general nuisance in the area' are to be growing on the stockpiles). The Environmental Control Officer will provide guidance as to which plants are weeds and require removal.

The stockpiles are not to be contaminated with sub-soil, or any other waste material.

Topsoil may not be compacted in any way, nor may any object be placed or stockpiled on it.

Topsoil may not be compacted in any way, nor may any object be placed or stockpiled on it.

Topsoil which is to be stockpiled for periods exceeding 4 months is to be vegetated. In summer a mixture of *Eragrostis tef* (Teff) and *Eragrostis curvula* (Weeping Lovegrass) (ratio 1:2) is to be applied at an application rate of 6 kg/ha, unless otherwise instructed in the project specification.

In winter, a mixture of *Lolium multiflorum* (Annual/Italian Rye grass) and *Eragrostis curvula* (Weeping Lovegrass) (ratio 1:1) is to be applied at an application rate of 6kg/ha (see PZ4 5.3 for sowing times), unless otherwise instructed in the project specification. Fertiliser is to be applied as per PZ4 5.2.

**PZ3.5.4 Cutting of trees**

Any tree branches which require removal are to be properly pruned and sealant applied to the cut surface, if required.

The Contractor's attention is drawn to Sub-clause 5.2.3.3 of SABS 1200 C with respect to work in indigenous forests.

Any indigenous trees or bush which require removal in terms of the project, and which have not been identified in the project specification or EMP, are to be timeously indicated to the Environmental Officer prior to work affecting them.

### **PZ3.5.5 Landscape Preservation and Conservation of Flora**

Notwithstanding Clause 5.7 of SABS 1200 C, the Contractor will be required to transplant designated plants to alternative locations as specified in the project specification or identified by the Environmental Control Officer, upon the instruction of the Engineer.

Transplanting shall be undertaken by employing the following method:

#### Removal

- Mark the orientation of the tree/shrub (for example, the north-facing side of the trunk indicated by a small arrow made with indelible ink) trunk. Do not scratch a mark on the surface of the trunk;
- Delineate a circle from the trunk with a radius equivalent to the drip-line of the tree, or as indicated by the Environmental Control Officer on site;
- Excavate the tree with an intact rootball.

#### Replanting

- A hole 500mm larger in diameter than the anticipated rootball must be prepared in advance of the tree removal in order that the tree can be replanted immediately;
- The tree must be positioned as per its original orientation;
- A planting method known as 'puddling' must be employed. This method involves the addition of soil and water simultaneously to expels air from the planting hole. Place the tree in its new hole, making sure the top surface of the rootball is level with the ground level. Place a hose pipe in the hole and leave it running whilst extra soil is added around the rootball;
- 'Compact' the tree in the hole and attach tree stays for stabilisation.

Compensatory planting of species may be required should transplantation not be feasible, as indicated in the project specification or upon instruction of the Engineer.

### **PZ3.6 EARTHWORKS**

#### **PSZ3.6.1 Backfill material**

With reference to SABS 1200 DB sub-clause 3.5, no material stripped or excavated which is classed, in terms of this specification, as topsoil, may be used as backfill in any excavation.

#### **PZ3.6.2 Excavation and backfilling**

During excavation 'conservation of topsoil', as specified in PZ3 5.3 above will apply.

Excavated material is to be stockpiled along a pipeline trench within the working servitude, unless otherwise authorised.

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Surplus excavated soft, intermediate and hard rock material shall not be disposed of along the pipeline trench as indicated in SABS 1200 DB sub-clause 5.6.3 and 5.6.4, but shall be removed to a spoil site (see PZ3.15 below) designated during the project if applicable, or agreed by the Engineer in conjunction with the Environmental Control Officer and Project Manager.

In certain cases, for example to help stabilise the disturbed area or to reinstate the natural aesthetics of an area, excess excavated intermediate and hard material may be disposed of in a designated manner along a pipeline trench, as indicated by the Environmental Control Officer and Project Manager, or in the project specification. In this case, rock material shall not exceed 250mm in maximum dimension (see PZ4 2.1).

In terms of SABS 1200 DB 5.6.5 and SABS 1200 LB 3.4.2, deficiency of backfill material shall not be made up by excavation within the free haul distance of 0.5km of site, without the prior approval of the Engineer of the source of the material. Where backfill material is deficient, it should ideally be made up by importation from an approved borrow pit (i.e. one which operates within the ambient of an EMPR.) (See also PZ3 14 below).

The Contractor will backfill in accordance with the requirements of progressive reinstatement.

The maximum length of open trench shall be specified in the project specification.

#### **PZ3.7**

##### **SAFETY**

All works which may pose a hazard to humans and animals are to be adequately protected and appropriate warning signs erected. The Contractor's attention is drawn to SABS 1200 D section 5.1 in this regard.

With reference to SABS 1200 D 5.1.1.3, where blasting is required in terms of the project, the Contractor will ensure that all structures in the vicinity that could be affected by the activity will be inspected and their condition photographically recorded (as necessary), prior to blasting.

Notice of intent to blast is to be provided to landowners timeously.

Speed limits, appropriate to the vehicle driven, are to be observed at all times on access roads. Operators and drivers are to ensure that they limit their potential to endanger humans and animals at all times, by observing strict safety precautions.

#### **PZ3.8**

##### **PLANT**

##### **PZ3.8.1**

##### **Silencing of plant**

With reference to SABS 1200 A amend: "built up areas": to read as "all areas within audible distance of residents (albeit urban, peri-urban or rural areas)."

Appropriate directional and intensity settings are to be maintained on all hooters and sirens.

Silencer units on equipment and vehicles are to be maintained in good working order.

Construction activities are to be confined to normal working hours (07h30 - 17h00) Mondays to Saturdays, except for the activities designated to be carried out at night.

##### **PZ3.8.2**

##### **Appropriate use of plant**

The Contractor will at all times use plant which is appropriate to the task in order to minimise the extent of damage to the environment.

#### **PZ3.9**

##### **DEALING WITH WATER ON WORKS**

##### **PZ3.9.1**

##### **Disinfection of Potable Water Infrastructure**

Disinfection water is to be neutralised before release of this water to the environment.

**PZ3.9.2 Discharge of water from site**

Any water which is discharged from site is to comply with the relevant Water Quality Guidelines implemented by DWAF.

Water discharged to the stormwater / sewer system may only be done so with the permission of the relevant local authority.

**PZ3.10 CONTROL OF EROSION**

Surface erosion protection measures will be required to prevent erosion where slopes are steeper than 1:8 on all soil types.

Erosion protection measures required may include all or some of the below, as specified in the project specification or upon instruction of the Engineer in conjunction with the Environmental (Control) Officer:

- use of groundcover or grass
- construction of cut off berms (earth and/or rockpack) - these are to be angled across the contour and normally would approximate an angle of 30° from the bisector of the contour.
- placing of brush wood on bare surface;
- pegging of wattle trunks or branches along the contour;
- hard landscaping, e.g. use of Loffelstein walls, ground anchors, gabions etc.

Scour chambers are to be fitted with energy dissipaters, or the jet of water directed onto a protected (i.e. grouted stone pitching/ rock pack/ reno mattress) area to dissipate water velocity and to control and prevent erosion.

Storm water drainage measures might be required on site to control runoff and prevent erosion.

**PZ3.11 CONTROL OF POLLUTION**

No waste in a solid, liquid or gaseous state shall be emitted from or spilled on the site without the approval of the Engineer.

No mixed concrete shall be deposited directly onto the ground prior to placing. A board or other suitable platform is to be provided onto which the mixed concrete can be deposited whilst it awaits placing.

Excess concrete from mixing shall be deposited in a designated area awaiting removal to an approved landfill site.

The Contractor will contain wash water from cement mixing operations, by directing the water into a sump for collection. The material contained in the sump will be removed to an appropriate landfill site.

No concrete rubble shall be present at the site.

Liquid wastes will not be disposed of to storm water drains. They may be disposed of to sewer only if permitted by (local council) legislation.

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In the event of pollution of a water body (including sediment loading), the Contractor will provide alternative water supply to users of that water body until the quality of the water body is restored to its previous unpolluted state. For the sake of this clause, pollution is deemed to be a state which is substandard to the normal quality of the water body, but is not necessarily in contravention of the South African Water Quality guideline standards for a prescribed activity.

Any ancillary damages resulting from pollution of a water body will be repaired / remediated at the Contractor's cost.

Where, due to construction requirements, pollution of a water body may potentially occur, the Contractor is to ensure adequate measures (e.g. attenuation/ settlement dams / oil absorbent products) are in place to prevent pollution. A method statement is to be provided to this effect (see PZ3 1).

#### **PZ3.12 CONTROL OF FIRE**

The Contractor will ensure he has the necessary fire fighting equipment on site in terms of SABS 1200. This will include at least rubber beaters when working in 'veld' areas, and at least one fire extinguisher of the appropriate type when welding activities are undertaken, irrespective of the site.

#### **PZ3.13 USE AND MAINTENANCE OF ACCESS FACILITIES**

##### **PZ3.13.1 Responsibility**

The Project Manager [not the Contractor (SABS 1200 AD 5.3.1)] will be responsible for obtaining permission for temporary and permanent rights of way over all private property affected by project activities.

The Project Manager will ensure that the Contractor has kept a photographic record of all access facilities and that these are reinstated to a state not worse than upon commencement of the project and to the satisfaction of the landowner (not withstanding that the project's objective is not to upgrade landowners' access roads).

##### **PZ3.13.2 Fencing**

Temporary fencing is to consist of 1.2 m bonnox fencing, or similar, suitably tensioned and supported on 1.8 m fencing standards at 3 m intervals, with all necessary straining posts and stays.

All temporary fencing as indicated by the Engineer is removed on completion of the contract.

##### **PZ3.13.3 New Access Roads**

Any construction roads created for execution of the project are to be designed to incorporate adequate drainage and water attenuation structures.

Any access roads which incorporate 'cut and fill' aspects and/or which are to be surfaced during construction are to be authorised by the Environmental Control Officer and Project Manager. Prior to construction of the road, the Contractor will be required to provide a sketch plan of the road layout (referenced to local topographic, natural and man-made structures). Slope steepness, road width, drainage structures and their frequency will need to be documented and accompany the sketch layout.

Construction access roads may not be wider than that necessary (maximum width 4 m) for movement of vehicles in one direction only. Should two way traffic be required, points people are to control vehicle movement on the 'single lane' road or passing bays are to be used



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where specified in the project specification or as identified by the Engineer in conjunction with the Environmental Control Officer, unless otherwise stated in the project specification. The cut and fill slopes of permanent roads will require grassing, as specified in the project specification or by the Environmental Control Officer, to increase stability and reduce aesthetic impacts. Hard landscaping may be required as per the project specification.

Temporary construction roads will require rehabilitation on completion of construction activities for which they were required. These roads will require rehabilitation as per PZ4 4 or as specified in the project specification. In the case of access 'tracks', only ripping to loosen compaction will be required unless otherwise stated by the Environmental Control Officer or project specification.

Access roads created by the project may only remain unrehabilitated on written request of the landowner, with his acceptance of the state of the road and a clause that the landowner accepts all responsibility for the road and its state.

#### **PZ3.13.4 Maintenance of Existing Access Roads**

The Contractor will record, photographically, the state of existing roads which are to be used for access, prior to plant utilising these roads.

During the contract period, the Contractor will ensure that all existing water attenuation and drainage structures are maintained in a state in which they can optimally perform their function.

Upon completion of the construction period, the Contractor will ensure that the access roads are returned to a state not worse than prior to construction commencing.

#### **PZ3.14 BORROW PITS**

Where the Contractor is required to import material this shall be from commercial sources or borrow areas specified in the project specification.

The Contractor may source material from alternative borrow pits provided: the site location; method of winning material and reinstatement and rehabilitation are environmentally acceptable and approved by the Environmental Control Officer.

In this regard, the Contractor shall give the Environmental Control Officer in writing, 30 days prior to opening up alternative borrow pits the following information for acceptance:

- quantities of borrow material required;
- method statement for excavation of material including depth and extent of excavation;
- anticipated 'active life' of the borrow area;
- proposal for reinstatement and rehabilitation of borrow area, including final profile;
- written approval from the landowner/ relevant authority that material may be removed from their land subject to their stated conditions, requirements, and royalties, and if the proposal is acceptable to the Environmental Control Officer.

Development and rehabilitation of borrow pit areas are likely to include the following activities (but these must not be regarded as exhaustive):

- Stripping and stockpiling of topsoil as per PZ3.5.3 of this specification;
- Removal (to nominal depth of 500mm) and stockpiling of sub-soil;
- Infill of borrow pit with spoil material;

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- Contouring of borrow pit to approximate natural topography and/ or reduce erosion impacts on the site;
- Placement of excavated subsoil over spoil material;
- Placement of stripped topsoil on subsoil;
- Grassing of topsoil in terms of clause PZ4.4 of this specification.

The Contractor is to familiarise himself with the requirements of the Minerals Act No 50 of 1991 in terms of borrow pit development, and the requirements of the EMPR, as applicable.

#### **PZ3.15 SPOIL SITES**

Where the Contractor is required to spoil material, spoil sites must be identified which are environmentally acceptable and approved by the ECO, unless spoil site areas have been identified in the project specification, in which case these will be the designated spoil sites.

If no spoil sites have been previously identified together with reinstatement and rehabilitation criteria, the Contractor is to provide the following information to the ECO at least 30 days prior to requiring sites to spoil material:

- the location, description of and access to alternative sites identified in order that they may be assessed;
- the quantity of material to be spoiled;
- the type of material to be spoiled (i.e. blast rock/ excavated rock/ soft shale/ subsoil etc.);
- the proposed method of spoiling;
- the proposed reinstatement and rehabilitation plan including final profile;
- written approval from the landowner/ relevant authority that material may be spoilt on land subject to their stated conditions and requirements and if the proposal is acceptable to the ECO.

Development and rehabilitation of spoil areas are likely to include the following activities (but these must not be regarded as exhaustive):

- Stripping and stockpiling of topsoil as per PZ3 5.3 of this specification;
- Removal (to nominal depth of 500mm) and stockpiling of sub-soil;
- Placement of spoil material;
- Contouring of spoil site to approximate natural topography and/ or reduce erosion impacts on the site;
- Placement of excavated subsoil over spoil material;
- Placement of stripped topsoil on subsoil;

Grassing of topsoil in terms of clause PZ4 4 of this specification.

#### **PZ3.16 NUISANCE**

##### **PZ3.16.1 Dust**

At all times the Contractor shall control dust on the site, access roads, borrow pits and spoil dumps with water, chemical soil stabilisers or temporary surfacing as specified in the project specification or upon instruction of the Engineer.

Dust control shall be sufficient so as not to have significant impacts in terms of the biophysical and social environments. These impacts include visual pollution, decreased safety due to reduced visibility, health aspects, and ecological impacts due to dust particle accumulation.

On gravel or earth roads, vehicle speeds may not exceed 30km per hour.

#### **PZ3.16.2 Noise**

The operational layout of the construction site is to be designed to control and reduce noise from source (see clause PZ2 1).

Machinery and vehicle silencer units are to be maintained in good working order. Offending machinery and /or vehicles will be banned from use on site until they have been repaired.

Construction activities generating output levels of 85 dB(A) or more (excessively noisy), in residential areas, are to be confined to working hours (08h00 - 17h00) Mondays to Fridays only.

'Normal' or 'noisy' working hours may only be extended with the prior written approval of the Project Manager, who has been notified, at least 7 days in advance, of the impending work requiring extension.

The Project Manager will ensure that the neighbours are timeously forewarned of imminent noisy activities.

Should community complaints be received with regard to noise generation, the Contractor will, at the discretion of the Project Manager and Environmental Control Officer, provide an independent and registered noise monitor to undertake a survey of noise output levels from site, and implement measures to reduce noise to legislated levels.

#### **PZ3.16.3 Visual**

All site establishment components, as well as equipment, will be positioned to limit visual intrusion to neighbours (see clause PZ2 1 above).

The type and colour of roofing and cladding materials are to be selected to reduce reflection.

Security lighting (both temporary and permanent) and lighting required for specific works activities must be placed such that it is not a nuisance to residents and the general public.

#### **PZ3.16.4 Interference with neighbours and public**

No construction staff may approach site neighbours, for whatever reason, without the knowledge and permission of the Project Manager.

Complaints from neighbours and public with regard to interference from contract staff will be regarded in a serious light, and the offender(s) may be subject to disciplinary action.

**PZ3.16.5 Disruption of Services**

Disruption of services, e.g. road access, water and electricity, must be kept to a minimum at all times.

Where service disruption is unavoidable, the Contractor is to advise the Project Manager (at least 7 days in advance), who in turn will timeously warn the affected parties.

**PZ3.17 SPECIAL ENVIRONMENTS**

**PZ3.17.1 Wetlands**

Pipeline trenches which traverse wetlands shall be constructed as specified in the project specification. The Contractor will submit a method statement for work in wetland areas as per PZ3 1.1

Construction may not permanently alter the surface or subsurface flow of water through the wetland.

The Contractor shall submit a method statement for review at least 14 days prior to commencing construction in a wetland.

The Contractor will remove all wetland vegetation with their root ball intact. This vegetation is to be kept moist at all times. It is to be placed in the shade and covered with moistened hessian cloth until replanting, which is to be undertaken immediately surface reinstatement is complete.

No construction materials may be stockpiled in any wetland areas.

The pre-construction profile of the wetland shall be returned to one similar as before construction, with no created "ridge or channel" features present.

**PZ3.17.2 River/ stream courses**

The Contractor shall submit a method statement for review 14 days prior to commencing construction. The method statement should highlight (but not be confined to) the following issues:

- detailed plan of crossing including pipe protection works;
- how water flow will be diverted during construction (if applicable);
- containment of contaminated runoff and wastewater;
- width of working servitude (if not already detailed in project specification);
- final expected profile of river/ stream banks;
- reinstatement and rehabilitation of river/ stream banks.

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The Contractor will remove herbaceous riparian vegetation as indicated in the project specification or by the Environmental Control Officer, with their root ball intact. This vegetation is to be kept moist by means of placing it in the shade, covered with moistened hessian cloth until it is replanted.

The Contractor shall not modify the banks or bed of a water course unless as specified in the project specification.

Rocks for use in gabion baskets/reno mattresses may not be obtained from a water course.

The Contractor will not pollute any water body as a result of construction activities (see also PZ3 11).

The Contractor shall not cause any physical damage to any aspects of a water course, other than those necessary to complete the works as specified and in accordance with the accepted method statement

Where a stream or river-crossing requires the diversion of water, a method statement is to be provided to the Environmental Control Officer in this regard for review.

#### **PZ4 REINSTATEMENT AND REHABILITATION**

Scope: The intention of this section is to ensure that the condition of the areas disturbed by the project are returned to a state that approximates what they were before the project or better, within reason. The concept of progressive reinstatement is fundamental to cost effective (both financial and environmental) rehabilitation of a site. This concept must be followed at all times. Where landscaping is utilised, the concept is to utilise and restore indigenous plants to the site, in terms of the concept of xeriscaping.

Reinstatement will be required for all areas disturbed by the project. For pipeline projects, this will include the full working servitude, not just the top of actual excavation as per SABS 1200 DB (subclause 5.9.1.1)

Reinstatement and rehabilitation will ensure that all areas disturbed by the project are returned, within reason, to a state not worse than before the project commenced.

The Contractor will reinstate and rehabilitate all disturbed areas outside of the demarcated working area (as defined in terms of clause PZ3 2 or the project specification) at his own cost and to the satisfaction of the Environmental Control Officer and Project Manager.

#### **PZ4.1 HOUSEKEEPING**

All areas are to be cleared of rubble associated with construction. This includes the removal of surplus materials, excavation and disposal of consolidated waste concrete and concrete wash water, litter, etc.

All soil contaminated by hydrocarbons, for example from leaking machines, refuelling spills etc., is to be excavated to the depth of contaminant penetration, placed in 200 litre drums and removed to an appropriate landfill site.

#### **PZ4.2 FINISHING**

##### **PZ4.2.1 Final Grading**

Final levels of all disturbed areas are, where feasible in terms of the project requirement, to be consistent with the natural topography of the area.

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In certain instances, it will be acceptable to reinstate rock onto a works area (e.g. pipeline servitude), provided that that rock does not exceed 250mm in maximum dimension and is placed in a manner consistent with the natural surrounds as indicated by the Environmental Control Officer and Project Manager.

All drainage lines affected by construction are to be reinstated to approximate their original profile. Where this is not feasible due to technical constraints, the profile is to be agreed upon by the Environmental Control Officer and Project Manager.

All compacted (disturbed) areas (including stockpile areas) are to be ripped (along contour) to a depth of 150mm prior to the replacement of topsoil.

#### **PZ4.2.2 Top soiling**

Topsoil is to be replaced to a minimum depth of 100mm.

Topsoil is not to be compacted, but once replaced is to be scarified (to a depth of 50mm) consistent with the natural contour.

If insufficient topsoil is available, subsoil or similar material may be used that may be a suitable substrate after addition of soil improving substances e.g. compost, pH rectifiers (lime or gypsum) etc. Soil testing may be required at an approved facility.

**PZ4.3 REINSTATEMENT OF WATER COURSES AND WETLAND AREAS**

The Contractor will ensure that water course banks are returned to their original profile unless the project specification states otherwise.

The surface reinstatement of wetland areas is to ensure that no depressions remain which could act as channels for preferential water flow thereby affecting the hydrological regime of the wetland.

The Contractor will preserve all riparian and wetland vegetation for use in rehabilitation of those environments. This vegetation is to be kept moist at all times. It is to be placed in the shade and covered with moistened hessian cloth until replanting, which is to be undertaken immediately surface reinstatement is complete.

Plants are to be, as nearly as possible, replanted in areas from which they were removed.

**PZ4.4 VEGETATION RE-ESTABLISHMENT**

The Contractor will ensure that all areas disturbed by contract activities are revegetated to the specified standard.

This standard is deemed to be an 85 % cover with no areas in excess of 0.04 m<sup>2</sup> / m<sup>2</sup> remaining unvegetated.

Revegetation shall match the vegetation type which previously existed (e.g. kikuyu pastures are to be returned to kikuyu pasture; 'veld' grass to 'veld' grass, etc.), unless stated otherwise in the project specification.

Prior to re-grassing, and if required:

- the area is to be scarified or ripped (along contour) to a depth of 50mm to loosen compaction.
- weeds present on site are to be removed.

Re-grassing, where required, will be either by means of seeding, instant turf (sods), sprigs or plugs as specified in the project specification or as specified by the ECO.

Where sprigs or plugs are utilised, they are to be planted at 200mm centres. The fertiliser shall be applied as per PZ4 5.2. During summer, 25mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained. During winter 15mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained. The amount of irrigation to be applied will make up the difference between rainfall recorded on site and minimum requirement.

Where instant turf is utilised, it shall be laid as specified in the project specification. The fertiliser shall be applied as per PZ4 5.2. During summer, 25mm of irrigation shall be applied each week until all the turf is visibly growing. During winter 15mm of irrigation shall be applied each week until all the turf is visibly growing. The amount of irrigation to be applied will make up the difference between rainfall recorded on site and minimum requirement.

Grassing shall be undertaken by a specialist grassing Sub-Contractor, unless permission is granted otherwise by the Engineer upon receipt of a written motivation from the Contractor.

The Contractor shall state in writing when the regrassing operation will commence and its expected duration (dates).

Grassing in 'veld' areas is to be undertaken as per PZ4 5 below. *Cynodon dactylon* species may be excluded or substituted from this mixture at the discretion of the Environmental Control Officer, or as specified in the project specification. The seed bulk may be made up with the *Eragrostis tef*.

**PZ4.5 "VELD GRASS" GRASSING SPECIFICATION**

The area to be grassed should be estimated and converted to hectares, e.g. 100m X 100m = 10 000m<sup>2</sup> = 1ha. All fertilizer and seeding rates used in this specification are with respect to hectares.

**PZ4.5.1 Regional areas**

For re-grassing three distinctive areas exist. These are defined as:

- the Coastal area (a narrow band running from the coast to ≈15km inland of the coast)
- the Coastal hinterland (a broad band (≈50km wide), generally defined as westwards of the coastal belt, and below 800m a.s.l.)
- the area above ≈ 800m a.s.l. (also called Midlands area).

**PZ4.5.2 Fertiliser**

Standard 2:3:2 (N:P:K) fertiliser shall be used on all sites:

The rate of application will be:

- 200 kg/ha in the Coastal Hinterland areas, and
- 300 kg/ha in the Midlands and Coastal areas.

**PZ4.5.3 Planting times**

Summer (includes Spring) is considered to be between the 1 September and 28 (29) February.

Winter (includes Autumn) is considered to be between 1 March and 31 August.

Re-grassing will be undertaken (as far as possible) in summer as germination and establishment of grasses is most effective, assuming reasonable spring rains.

Vegetation re-establishment is likely in many cases to be held off until this suitable growing season.

Hydroseeding with a winter mix will only be specified where regrassing is urgently required and cannot wait until the summer season. In this case irrigation will be required as per PZ4 5.4 below.

**PZ4.5.4 Establishment and maintenance**

During summer, 25mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained.

During winter (where annual rye grass is specified) 15mm of irrigation shall be applied each week until reasonable (60%) ground cover has been obtained.

If rapid establishment is required, additional watering may be necessary as specified in the project specification

The amount of irrigation to be applied will make up the difference between rainfall recorded on site and the minimum requirement.



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**PZ4.5.5 Grass Seed Selection and Application Rates**

The specific seed selection and application rates for each of the defined areas are covered separately, as follows.

*PZ4.5.5.1 Coastal area*

**Summer mix (1 September - 28 February)**

Grass species	Common name	General application rate (kg/ha)
Eragrostis tef	Teff	5
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	10
Digitaria eriantha	Smuts' fingergrass	5
Total		30

**Winter mix (1 March - 31 August)**

Grass species	Common name	General application rate (kg/ha)
Lolium multiflorum cultivar - Midmar	Annual/Italian rye grass	10
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	5
Total		25

*PZ4.5.5.2 Coastal hinterland.*

**Summer mix (1 September - 28 February)**

Grass species	Common name	General application rate (kg/ha)
Eragrostis tef	Teff	5
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	10
Cenchrus ciliaris	Blue buffalo grass	2
Cynodon dactylon	Couch/KWeek/Star grass	10
Total		37

**Winter mix (1 March - 31 August)**

Grass species	Common name	General application rate (kg/ha)
Lolium multiflorum cultivar - Midmar	Annual/Italian rye grass	10
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	5
Cenchrus ciliaris	Blue buffalo grass	2
Cynodon dactylon	Couch/KWeek/Star grass	3
Total		30

*PZ4.5.5.3 Midlands area*

**Summer mix (1 September - 28 February)**

Grass species	Common name	General application rate (kg/ha)
Eragrostis tef	Teff	4
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	10
Digitaria eriantha	Smuts' fingergrass	2
Cynodon dactylon	Couch/KWeek/Star grass	2
Paspalum notatum	Lawn paspalum	2
Total		30

**Winter mix (1 March - 31 August)**

Grass species	Common name	General application rate (kg/ha)
Lolium multiflorum cultivar - Midmar	Annual/Italian rye grass	10
Eragrostis curvula	Weeping lovegrass	10
Chloris gayana	Rhodes grass	5
Paspalum notatum	Lawn paspalum	2.5
Total		28

**PZ4.5.6 Seeding methods**

Two methods are recommended, namely hydroseeding and hand-broadcasting. The required method shall be as specified in the project specification.

All seed supplied should be labelled in accordance with the Government Seed Act No. 20 of 1961 and the Contractor shall be required to produce such certification, if requested by the Engineer.

**PZ4.5.6.1 Hydroseeding**

The Grassing Contractor shall be conversant with this method.

Cellulose pulp (consisting of either wood shavings, shredded straw, shredded paper or cotton waste) shall be added to the mix to be applied at a rate of 250 kg/ha. In addition to the cellulose pulp, compost (consisting of either chicken litter, kraal manure, sugar cane filter cake or mushroom compost) shall be incorporated at a rate of 5m<sup>3</sup>/ha (≈100 X 50kg fertiliser bags/ha).

**PZ4.5.6.2 Hand-broadcasting**

Fertiliser, at the appropriate rate, is to be distributed by hand in a manner to ensure that there is an even spread of fertiliser over the site. This is to be done prior to seeding.

The seed mix is to be weighed and made up in an appropriately large container which shall be stirred to ensure no settling out of the grass seed, and a uniform distribution of the different types of seed.

The seed is to be distributed by hand in a regular grid broadcasting manner to ensure that there is an even spread of grass over the entire site.

The area seeded is to be raked over once the seed and fertiliser have been applied to incorporate these elements into the topsoil.

**PZ4.5.7 General**

Where there is a possibility of neighbourhood livestock grazing a rehabilitated site these should, as far as is practicable, be excluded for the first 3 months of re-grassing.

#### **PZ4.6 LANDSCAPING**

Landscaping of the site may be required as indicated in the project specification.

Compensatory planting of trees or shrubs may be required should the transplantation of such not be successful in terms of PZ3 5.5 or due to plants removed in terms of PZ3 5.4

Planting of trees will be in accordance with the following method:

- All tree holes shall be square in plan;
- Tree holes shall be a minimum of 600mm by 600mm square by 700mm deep;
- Holes are to be backfilled with excavated soil in a ratio of 3:1 with compost. The compost is to be weed free and have been composted at temperatures in the order of 65°C. Where possible, any available topsoil should be placed in the hole at the level where the tree rootball will rest. A handful (half-a-cup) of each Superphosphate and 2.3.2 should be mixed into the soil-compost mix;
- The tree holes are to be backfilled to the point where the tree and its rootball are in the desired position. The tree is to be removed temporarily and the hole filled with water and allowed to drain away. This operation of watering and draining should be repeated at least four times in order that the surrounding ground and hole are thoroughly moist. The tree is then to be replaced and the remaining soil replaced;
- All trees shall be tied (using a tree tie) to a suitable timber stake planted in the ground to a depth of at least 500mm. The stake shall have a minimum diameter of 35mm and shall be at least 300mm higher than the planted tree;
- Water retaining basins of at least 500mm diameters are to be formed around each tree;
- The Contractor is to apply at least 10 litres of water per tree per fortnight for a period of at least 3 months.

The planting of shrubs will be in accordance with the tree planting method with the exception that the holes are to be a minimum of 400mm by 400mm square by 500mm deep, and that the tree stakes and ties are not required.

#### **PZ4.7 ALIEN PLANT CONTROL**

All sites disturbed by construction activities will be monitored for colonisation by invasive alien plant species.

The Environmental Control Officer will identify those plants which require removal during both the construction and maintenance period, for the Contractor's action.

The Environmental Control Officer will provide advice as to effective methods of removal and control of alien plant species.

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**PUBLIC COMPLAINTS REGISTER**

DATE	COMPLAINANTS NAME	DESIGNATION/ AFFILIATION	REASON FOR COMPLAINT	ACTION TAKEN	ACTION BY	ACTION BY DATE	ACHIEVED BY DATE	DATE REFERRED TO NW environmental control officer

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**MONITORING OF COMPLIANCE WITH ENVIRONMENTAL SPECIFICATIONS**

PROJECT NAME: .....

CONTRACT NUMBER: .....

PROJECT MANAGER: .....

ENGINEER'S REPRESENTATIVE / SUPERVISOR: .....

CONTRACTOR: .....

CONTRACT  
.....  
(including start and completion dates):

PERIOD:

PERIOD COVERED: .....

REPORT PREPARED BY: .....

-----  
Signature

HARRY GWALA DISTRICT MUNICIPALITY

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**ENVIRONMENTAL CONTROL OFFICER REPORT**

**PROJECT NAME:**

**CONTRACT N°**

**DATE OF SITE INSPECTIONS DURING REPORTING PERIOD:**

Specification Breach	Spec. No.	Remedial Action Recommended	Due Date	Authority Responsible	Action Taken

**PUBLIC COMPLAINTS**

Complainant	Designation/ Affiliation	Date of complaint	Reason for Complaint	Action taken and date

**GOOD PERFORMANCE REPORT**

List any aspects of the Contract in which the Contractor is performing well and beyond that which is required in terms of the specification.

**Photographs**

Include photographs which illustrate aspects of non-compliance and good performance.

Photograph 1	Photograph 2
Caption	Caption

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**PE: THE CLIENT'S PRECONSTRUCTION HEALTH AND SAFETY PLAN**

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**PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY  
SPECIFICATION**

**AND**

**BILL OF QUANTITIES FOR CONSTRUCTION WORKS**

**FOR**

**COVID-19 SITE CONDITIONS**

**MANAGED ON BEHALF OF**

**HARRY GWALA DISTRICT MUNICIPALITY  
(THE "EMPLOYER")**

**Prepared By:**



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**HARRY GWALA DISTRICT MUNICIPALITY**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**HGDM 744/HGDM/2021**

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**KEY ROLE PLAYERS**

**EMPLOYER**

Principal Agent:

Civil Engineer

Environmental Control Officer

Health and Safety Agent

**PRINCIPAL CONTRACTOR**

Contracts Manager

Site Agent

H&S Officer

Other:

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**1. LIST OF ABBREVIATIONS**

BRA	Baseline Risk Assessments
BEPs	Built Environment Professionals
BoQ	Bill of Quantities
PSHSS	Project Specific Health and Safety Specifications
COIDA	Compensation of Injuries and Diseases Act
CR	Construction Regulations
DEL	Department of Employment and Labour
H&S	Health and Safety
OHSA	Occupational Health and Safety Act No. 85 of 1993 (as amended)
PPE	Personal Protective Equipment
PC	Principal Contractors
SSHSS	Site Specific H&S Specification

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## 2. DEFINITIONS

**The Employer:** Harry Gwala District Municipality

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

**COVID-19:** Means, the Novel Coronavirus (2019-n Cov2) which is an infectious disease caused by a virus that has previously not been scientifically identified in humans which emerged in 2019 and was declared a global pandemic by WHO in 2020

**WHO:** Means, The World Health Organisation

## 3. KEY REFERENCES

The following key references apply to the specifications:

- Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)
- Government Gazette No. 43257 dated 29 April 2020 titled COVID-19 Occupational Health and Safety Measures in Workplaces COVID-19 (C19 OHS), 2020
- Regulation 10 (8) of the Regulations issued in Terms of Section 27 (2) of The Disaster Management Act, 2002 (ACT No. 57 of 2002).
- The Disaster Management Act, 2002 (Act No. 57 of 2002), as amended

## 4. INTRODUCTION

The recent Regulations promulgated under the National Disaster Management Act, and the lockdown of 26 March 2020 have closed all construction projects except for those involved with essential infrastructure services and emergency facility preparedness. The Covid-19 pandemic has catapulted the role of health and safety (H&S) into the forefront of all activities. Going forward as the lockdown is slowly lifted, the construction industry will be required to focus as never before to protect the vulnerable who are often at the forefront of any project.

Construction projects range in size and complexity, occur in rural communities and cities, where the population is dense, or there is very little activity. Irrespective of the nature of the work, workers remain exposed to the typical risks and hazards that are typical of construction. Working at heights, confined spaces, breaking, cutting and grinding to name a few. High levels of hard physical labour and long hours of work are typical, over and above the risk of contracting Covid-19. As such the Occupational Health and Safety Act No 85 of 1993 and its Regulations require to be complied with. More specifically, the Construction Regulations of 2014 remain applicable and must be adhered to in order to protect the workers.

The Construction Regulations are very specific regarding the roles of stakeholders, namely the employer, designers and contractors. Each of these categories have very specific roles and responsibilities and cover both the built environment professionals (BEPs) and contractors. Each have roles in terms of H&S as per the existing arrangements over and above their contractual and monitoring duties on a project.

This H&S specification is based on Annexure 2 (Guideline for the Construction Sector Relating to Health and Safety and COVID-19) of the Construction Sector Reactivation Protocols prepared by the Construction COVID-19 Rapid Response Task Team and dated 26 April 2020.

The Contract  
Part C3: Scope of Works  
Contract No. HGDM 744/HGDM/2021

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#### 4.1 PURPOSE

The purpose of this specifications is to specifically manage the operations of Construction work projects during the confirmed 2020 Covid-19 Novel Corona Virus to ensure that employees are well informed and equipped to take all possible measures to prevent the spread and contain the virus as far as possible and reasonably practicable when performing their duties on site.

#### 4.2 IMPLEMENTATION OF THE PROJECT SPECIFIC COVID-19 OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

These H&S specifications will form an integral part of the Contract and are in addition to Project Specific Health and Safety Specifications (PSHSS) already in place and included at tender stage. Where there is conflict of interpretation between the specifications, the Covid-19 specifications shall take precedence.

No work may commence without written approval of the revised H&S plan by the H&S Agent, or the responsible person in the MISA. Subsequent to approval, the contractor's activities on site will be monitored through regular H&S audits and Non-conformances will be issued and penalties or work stoppage will be issued where appropriate.

##### 4.2.1 Roles And Responsibilities of Health and Safety Officers

The PC's Health and Safety Officer (HSO) will be required to undertake the following amongst other activities:

- HSO officers will ensure that they carry out the COVID 19 awareness and ensure that all employees receive the message and understand what to do and how to do it. The training awareness will include training of Security officers on what to do when receiving employees to the premises.
- HSO officers must ensure that before letting any employees inside the premises/site camp, they issue them with face masks and sanitise their hands before passing through the gate.
- Screening questionnaire will be completed before employees can be allowed to gain access to the premises.
- The Employer specifications and requirements will be implemented accordingly.
- Ensure hand sanitizer and hand soap is available at all times and issued to all including training on proper usage.
- Undertake employee awareness campaigns on how the virus is spread from one person to another and also train them on how to prevent the spreading of the virus.
- Conduct regular toolbox talks to ensure that employees are always reminded of correct behaviour and handling of PPE provided.
- Ensure that employees who are suspected to have the symptoms are isolated immediately and the Department of Health immediately notified of such. While waiting the HSO officer must ensure that the isolated victim is entirely kept away from other employees, this will help to lessen to spread the virus.

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## **5. BASELINE RISK ASSESSMENT**

### **5.1 SUMMARY OF RISKS IDENTIFIED DURING DESIGN AND IMPLEMENTATION**

The existing Baseline Risk Assessment (BRA) will require to be amended to take into account risks related to the potential spread of the Covid-19 virus. A typical risk assessment schedule is provided in ANNEXURE A for use by the Contractor.

Examples of risk factors include but are not limited to the following:

- Lack of financial resources by Employer;
- Employer not enforcing financial resources for projects;
- Transportation, to, from and on sites;
- Manual labour for physical tasks and tasks that will not allow for social distancing;
- Workers arriving at work with a temperature or other symptoms of Covid-19;
- Management of isolating potentially infected workers, and tracing of family/contacts;
- The lack of clean ablution facilities;
- The lack of clean welfare facilities where workers congregate for lunch break;
- Lack of cleaning and hand washing facilities;
- Confined working areas;
- Too few emergency supplies, first aiders and first aid boxes;
- Sanitization of frequently used environments throughout the working day;
- The need to continually monitor site activities;
- Underlying chronic diseases and age of workers (experienced workers);
- Specialised contractors having older workers, or need to cross borders, and
- Rural projects, or small/private projects ignoring the current legislation.

### **5.2 RE- INTRODUCTION TO THE WORK PLACE AFTER LOCKDOWN**

Employees returning to the first day of work after the lockdown to answer a wellness questionnaire with the HSO at the entrance to the main building or site camp. Upon successful completion of the questionnaire (If satisfactory) the employee will be allowed to proceed to his/ her work area. All employees will attend a mandatory re-induction (Revised induction for COVID-19 awareness including new measures to be taken.

A COVID 19 Risk assessment will be communicated to all employees to highlight activities and areas considered "hot spots"

## **6. SITE SPECIFIC HEALTH AND SAFETY PROCEDURES**

### **6.1 DEMOGRAPHICS**

It will be incumbent upon the PC to establish a suitable and sufficient procedures for the identification of potentially infected employees and workers, the management of exposure to the corona virus on the project, including visitors and suppliers. Including a response plan for persons

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suspected of being infected with or exposed the virus. The procedure is to be applicable to all levels of management and supervision, employees and local labour.

As part of this procedure, the contractor is to maintain a register of all employees and workers on the project, including sub-contractor employees and workers, keeping records of the following information as a minimum (note the NIOH document that is currently available):

#### 6.1.1 Age of Employee

The procedure is to take cognizance of the vulnerability of older workers and make provision for additional or more frequent screening of workers above a specified age. A certificate of fitness should be available to make the worker fit for duty, and should be available on site at all times.

#### 6.1.2 Health status

A detailed record of all current and previous health conditions, specifically those identified as creating a higher risk for contracting Covid-19, to be kept for all workers. The procedure is to make provision for stringent testing procedures and management of exposure to the virus for workers with higher vulnerability due to underlying health conditions. Such records are confidential and will remain with the Occupational Health facility. A certificate of fitness must be available for each worker on site, including management and contractors.

#### 6.1.3 Socio economic status / Unskilled labour

The procedure is to consider the socio-economic status and skill level of workers, taking cognizance of the fact that these may have an impact on the worker's level of exposure to the virus outside of the workplace and the risk of being asymptomatic carriers of the virus to the project/site.

#### 6.1.4 Accommodation

Where accommodation is provided by the contractor/sub-contractor, factors to be considered in the procedure include, *inter alia*:

- Density of occupants to allow for adequate social distancing (minimum 1.5m) in sleeping and dining quarters;
- Restriction on the number of persons using the same sanitary/hygiene facilities;
- Provision of dedicated crockery and cutlery for each occupant, together with a procedure for effective cleaning and safe storage of same and a prohibition on the sharing of utensils;
- Dedicated facilities for safekeeping of personal belongings and abovementioned utensils for each person. Such facilities are to allow for total segregation of belongings and must be easy to sanitize. Provision of such facilities for safekeeping to be accompanied with a procedure for the use and sanitizing of the storage facility to reduce the risk of cross-contamination;
- Facilities for accommodation provided by the contractor to have in place stringent procedures for personal hygiene, ongoing maintenance of sanitizing and social distancing, and
- Additional rules to include a prohibition on the sharing of clothing, towels and other personal belongings, as well as the laundering of clothing for multiple persons at the same time.



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**6.2 ORIGIN OF LABOUR AND TRANSPORTATION**

Where a return to work will necessitate travel between provinces and cities for employees and workers to return to the project, the PC is to have a procedure for, or provide transport for the return of workers to minimize the risk of exposure to the virus while in transit. While this is difficult to control by the PC, induction training needs to include such information so workers can protect themselves. Where on-site transportation is done, a policy needs to be available for how such transportation will be made safe and limit any opportunity for cross infection. If possible the PC could provide their own transportation for their workers.

Parking areas for public and private vehicles need to be considered. Hand cleaning facilities when entering gates, doors, and security entrances.

**6.2.1 Public Transportation across borders/towns/cities**

The contractor to source/recommend a transport service provider that complies with all travel restrictions and requirements as gazetted by the government, *inter alia*:

- Maximum occupancy of vehicles to allow for social distancing;
- Vehicle sanitized before passengers board;
- Passengers provided with hand sanitizer and face masks prior to boarding;
- Vehicle sanitized before boarding, and hand sanitizer provided to passengers prior to boarding, after each stop where passengers leave the vehicle for comfort breaks, and
- Frequent hand sanitizing is recommended during transit.

**6.2.2 Contractor provided transportation across borders/towns/cities**

Where the contractor provides transportation across borders/towns/cities to assist workers to return to work, provision is to be made for an adequate number of vehicles to comply with the maximum occupancy as in (a) above, and all such vehicles provided will be subject to the same requirements as abovementioned.

Since it will not be practicable to separate belongings and luggage in either instance mentioned above, the contractor's procedures must make provision for the sanitizing of personal belongings and luggage on arrival at the final destination.

**6.3 SOCIAL DISTANCING**

Social distancing has been shown to be an effective method to slow down the spread of the corona virus. It will be incumbent on the contractor to ensure that the construction site and facilities are set up in such a way that it will be possible as far as is practicable to maintain the required social distancing of a minimum of 1 metre between persons when at work.

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**6.3.1 Tasks that require more than 1 person to complete**

Where it is not possible to maintain the required distance between workers due to the nature of the work activity, e.g. curb laying, confined working areas, rebar tying, preparing wire cages, the contractor will be required to implement, maintain and enforce a procedure to adequately protect such workers against potential infection with the corona virus. This includes but is not limited to:

- Providing adequate supplies of suitable PPE such as face masks, task specific gloves, safety glasses, disposable/additional coveralls;
- PPE used during multi-person activities to be exchanged immediately after the task is completed;
- Sealed bins to be provided for disposable PPE such as masks, disposable coveralls, disposable gloves, etc.;
- Sealable bags provided to each person for keeping PPE requiring laundering, such as gloves and overalls, and
- Sanitising/washing facilities provided for immediate sanitizing of hard hats, safety glasses, shoes, safety harnesses etc. on completion of multi-person tasks.

All the above to be utilized when breaking for lunch or leaving the site, and before commencing with the next or new work activity.

**6.3.2 Access/Egress of Site, Welfare Facilities, Meeting Areas**

The PC is to ensure there is suitable and adequate provision to minimize the risk of persons who may be infected with Covid-19 entering the site, the spread of the virus between persons who work on or visit the site and the risk of potentially contaminated persons leaving the site and accessing public spaces or going home to their families. To achieve this, the contractor is required to implement, inter alia the following measures:

- Persons accessing the site in groups to maintain social distancing of at least 1 metre while waiting to access the site;
- Persons waiting to access the site to be segregated from the public where required by the provision of dedicated, prominently identified public pedestrian walkways situated in such a way that social distancing is maintained between site personnel and the public;
- Screening of each person who enters the site with a no-touch infrared thermometer;
- Means of (fully) sanitizing each person and their belongings, who access and leave the site;
- Dedicated facilities for safekeeping of personal for each person. Such facilities are to allow for total segregation of belongings and must be easy to sanitize. Provision of such facilities for safekeeping to be accompanied with a procedure for the use and sanitizing of the storage facility to reduce the risk of cross-contamination;

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- Toolbox talks to be conducted outdoors when possible in order for persons to maintain social distancing. Where inclement weather does not allow for this, toolbox talks to be conducted with smaller groupings of workers in a sheltered area large enough to maintain social distancing, and
- Eating areas to be set up in such a way that the maximum number of persons who will use the area at any one time are able to maintain the required social distancing of 1 metre. Should this not be practicable, meal times are to be staggered on a rotational basis to avoid contact between persons.

***\*This guideline is not an exhaustive list and the contractor is encouraged to develop rigorous control measures and procedures to safeguard all persons accessing or working on the site against the risk of Covid-19.***

Where possible remote means of monitoring such as use of drones or security cameras to monitor site conditions and to do site inspections could be considered.

#### 6.4 ALCOHOL AND DRUG TESTING

Alcohol testing may only be done using single use test units, and must be disposed of in the appropriate contaminated waste. Drug testing will only be done by an occupational health facility either using urine or blood sampling. A protocol will be drawn up by the PC to manage this with the occupational health service being used.

#### 6.5 MEDICAL SURVEILLANCE

The normal requirements of pre-placement, periodic and exit medicals will remain, with the Occupational health service providing a methodology of how they will be including factors relating to Covid-19. No lung functions or peak flows will be done until deemed safe to do so by the South African Thoracic Society.

It is preferable that occupational health service providers use a cloud-based record keeping service to ensure easy tracking and tracing. Free apps such as Square 1 is such an example.

Any person who contracts the virus may need to be reported to the Compensation Commissioner as an occupational disease where their work is to monitor and in contact with others. Such details are provided in the Compensation for Injuries and Diseases Act (COIDA).

Isolation of workers who have a temperature or any symptoms, and removal to the closest facility for testing and treatment, through the numbers provided. The PC is to ensure their policy on this includes such information.

Workers will be required to complete COVID-19 questionnaires prior to returning to site. Any worker with any symptoms is not to return to work, or notify the PC of same.

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#### 6.6 ABLUTION FACILITIES

Ablution facilities are an essential facility that must be available for workers across a site. Facilities are a high risk area and increased cleaning regimes are required to be introduced. A policy on how this will be done is required, that will cover both portable and permanent facilities. The following are considerations, which include, *inter alia*:

- Portable toilets to be provided at a 1:10 ratio
- Cleaners to continually clean and have a formal cleaning regime
- Hand washing facilities (soap and water, paper towel) to be available where possible, and if not, to provide hand sanitizer
- Induction training to educate to ensure all users are hand washing correctly
- Flush toilets preferably 1:15 unless increased cleaning regime present;
- Restrict the number of people using toilet facilities at any one time e.g. use a welfare attendant;
- Wash hands before and after using the facilities;
- Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush;
- Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently;
- Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal that need to be managed as hazardous waste;
- Introduce staggered start and finish times to reduce congestion and contact at all times;
- Consider increasing the number or size of facilities available on site if possible, -and
- Provide suitable and sufficient rubbish bins in these areas with regular removal and disposal.

#### 6.7 SECURITY ACCESS

Public access to site is to be limited at all times, and non-essential visitors are not to be allowed entry. There is required to be staggered access at all times. The following aspects are to be included in a policy document as to how such issues will be managed, *inter alia*:

##### 6.7.1 Staggered access to site;

The PC should consider the following:

- Introduce staggered start and finish times to reduce congestion and contact at all times;

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- Monitor site access points to enable social distancing – consideration for the number of access points, either increase to reduce congestion or decrease to enable monitoring;
- 50-100mm deep trough to be placed at entrances to site. Disinfectant is to be placed in the trough and all shoes coming onto site or leaving site will be disinfected, without wetting shoes themselves;
- Remove or disable entry systems that require skin contact e.g. fingerprint scanners or biometric system;
- Require all workers to wash or clean their hands before entering or leaving the site;
- Ensure social distancing between people waiting to enter site;
- Regularly clean common contact surfaces in reception, office, access control and delivery areas e.g. scanners, turnstiles, screens, telephone handsets, desks, particularly during peak times;
- Reduce the number of people in attendance at site inductions and consider holding them outdoors wherever possible, and
- Drivers should remain in their vehicles if the load will allow it and must wash or clean their hands before unloading goods and materials.

#### 6.8 PROCUREMENT AND STORAGE FOR COVID-19 PPE AND GENERAL SUPPLIES

The following is to be implemented by PC:

- Availability of personal protective equipment PPE is an imperative and should be available at all times. Where this is not so, the work related to the activity will be stopped until adequate supplies are available.
- Storage of PPE is to be tightly controlled, with records of issue. Damaged PPE is to be managed in the usual way, but all to be disposed of as if contaminated.

#### 6.9 WASTE MANAGEMENT FOR COVID-19 WASTE

Waste management arrangements to be updated to include provision for the disposal of additional waste generated due to preventative measures implemented. All waste to be managed as hazardous waste.

##### 6.9.1 Disposal of any gloves, masks

The contractor shall dispose of all used gloves and masks as hazardous waste and provide sealable bags and containers for the safe disposal of this waste.

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**6.9.2 Paper towels**

The contractor shall provide adequate supplies of paper towels on site. At points where these towels are provided lined waste bins to be placed in order to collect all used towels and then to be disposed of in hazardous waste.

**6.9.3 Disinfectant solution**

The contractor to provide adequate supplies of disinfectant on site where the use of water and soap for cleaning is not practical. If disinfectant dispensers are not refilled it should be disposed with other hazardous waste.

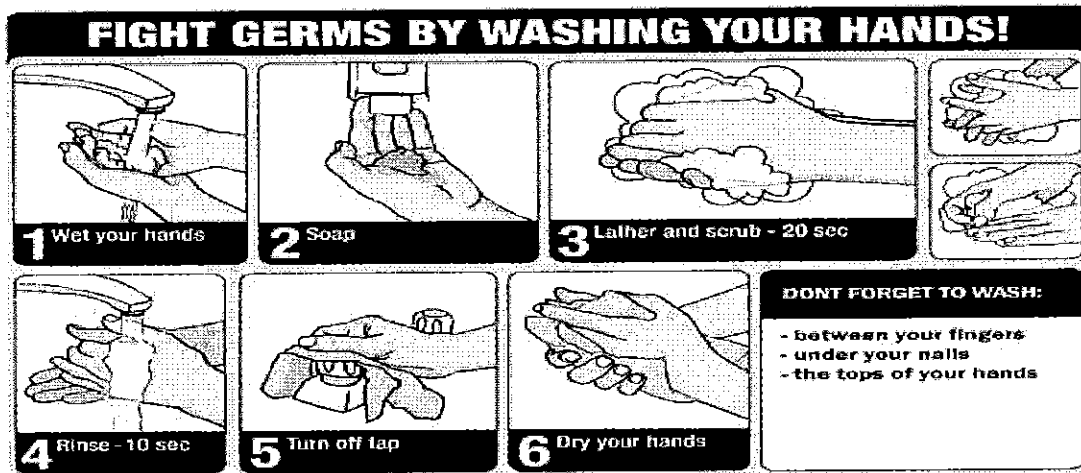
**6.9.4 Wastewater**

Wastewater at washing points, toilets, and bathrooms to be contained in a drainage system that prevent surface spills. If wastewater is contained in waste buckets it must be sealed when removed and disinfected after it is cleaned.

**6.10 SIGNAGE**

The PC is to review all current signs and notices displayed on site. The PC is to avoid conflicting messages/notices that have been in place prior to lockdown and review according. Typical signage that can be displayed on site is shown in Figure 1

Figure 1: Typical Signage



**6.10.1 Access rules**

The contractor shall install additional signage with site rules specific to the prevention of spreading the COVID-19 virus at the access control points of the site.

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**6.10.2 Notices/Posters with protocols**

Notices and posters shall be placed and installed to raise awareness and regarding protocols to be followed on site. These notices and posters shall be placed conspicuously at various points on the site including the following places:

- Entrance
- Site notice board
- Site Office
- Eating areas
- Next to toilets and bathrooms
- Hand washing stations
- Storerooms

**6.11 EMERGENCY PLANNING**

An updated emergency plan is to be completed that is in line with the current Regulations of the National Disaster Management Act.

**6.11.1 First aid**

Extra gloves, and disinfectants are to be available, first aiders are to be issued with at least FFPT2 masks should they be required to respond

**6.11.2 Evacuation plans**

Evacuation plans should consider social distancing.

**6.11.3 Isolation of potentially infected workers**

The emergency plan is to consider how anyone who arrives on site and displays any of the symptoms, or has a raised temperature.

**6.12 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

The hierarchy of control applies with the use of PPE. Specific regard for the type and usage, training and control is to be outlined in the policies and procedures.

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#### 6.12.1 Masks

Masks are compulsory for all employees; personnel and professional team members, reducing the potential of inhaled COVID-19 droplets. For general administration purposes, for essential staff on site only, cloth masks may be worn. N95 masks are only to be worn by first aiders or high risk workers, due to the national shortage thereof.

All employees to have access to N95 or FFPT2 masks when required, only in instances of HIGH RISK OF EXPOSURE

All N95 and FFPT2 masks to be disposed with or after 1 day's use. Induction is to include training on the correct use of face masks.

Cloth face masks to be used on entering and leaving the site. It is advised that each worker is supplied with at least 3 cloth face masks. This would assist ensuring that the masks are hygienic (1 on the face; 1 in the wash and 1 as a backup).

The PC must ensure that sufficient stock is at all-time available on site. This will also have depended on the type of mask being issued.

All disposable masks are biological waste and must be properly disposed of. This must be disposed in container (locked) or in bags to be either removed as medical biological waste by registered service provider.

CLEARLY IDENTIFIABLE BINS INDICATING BIOLOGICAL WASTE TO BE PROVIDED

#### 6.12.2 Face Shields

The principal contractor could also look at options such as full face shields for preventing spreading of virus through eyes. This would assist the employee who is doing hard physical work to breathe more easily but still protecting the mouth, eyes and nose.

Face shields should be cleaned daily before the shift and at the end of the shift. Proper cleaning agents/disinfectant must be used. Face shields should be issued to employees and no sharing is allowed.

#### 6.12.3 Overalls

All employees must be issued with 3 overalls (1 overall wearing; 1 overall in the wash and one as the backup). This will ensure that the employee will be able to wear clean hygienic overalls. This must form part of the COVID-19 training for all employees.

#### 6.12.4 Hand Gloves

It is preferable that surgical gloves are not worn unless indicated and workers trained in the proper use thereof. Gloves must only be used when the activity demand the wearing of specific type of hand gloves. This will be directed by the PC risk assessment.

Site office personnel need to be made aware of the risks in the office environment, this include to handling of documents and plans. These employees could be issued with the appropriate hand gloves or sufficient hand wash / sanitising facilities must be available in the site office.



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## 6.13 CONSEQUENCE MANAGEMENT

### 6.13.1 Change Management

Each Principal contractor / contractors to ensure that regular information pertaining to COVID 19 and or any Health and Safety matters is distributed to ensure that required measures / controls is timeously addressed. There are various information platforms available to the Principal Contractor and or employee that can assist in keeping them informed. These include *inter alia*:

- Local Authority / Legislation
- World Health Organizations
- Health Care Departments / Health Care Professional's / Centre's / Hospitals
- Public Service Announcements – National News

Each contactractor is responsible and required to keep his or her employees informed by means but not limited by conducting the following;

- Awareness campaigns -i.e. posters within work places
- Daily site task Inspections (DSTIs)
- Toolbox talks / Daily briefings
- Meetings
- Company policies / procedures / Employee Wellbeing interaction
- Company newsletters
- Telecommunications – Cell phones Apps / e-mail

### 6.13.2 Succession Planning

Employees who is performing specialize work/activities (including plant operators) must be identified. These positions must have alternative employees that could perform these activities. This could mean additional training for these employees.

Key personnel on site should also have competent alternative employees that could perform these functions when needed. Where possible administrative staff should be working from home to limit any opportunistic exposure.

It is very important to understand that the availability of certain essential products and material may not always be available and thus proper planning must be in place to ensure that the activities on site are not interrupted.

Proactive planning must be in place to ensure that the following are ordered and available:

- PPE (cloth face masks, face shields, overalls)

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- Hand sanitizers with at least 60% alcohol content
- Disinfectants and cleaning materials

#### 6.13.3 Consequences

When non-compliance activities are noted, that activity will be stopped. Should the remedial actions not take place the site will be shut down till the corrective actions have been implemented.

Employees that do not work according to the SSHSS and SSHSP must be disciplined according to the company's disciplinary codes and practices.

Supervisory employees on site must ensure compliance, and when non-conformances are noted disciplinary actions should also be followed.

PCs should note that they could be fined and even according to the Disaster Management Act, arrested.

#### 6.14 WELFARE FACILITIES

The PC shall adapt arrangements regarding the provision of welfare facilities to be in line with Government guidelines and requirements.

##### 6.14.1 Clean, storage for food and personal belongings

The PC to provide lockable storage for all employees on site, which shall be disinfected daily. Training and awareness to address procedures and the importance of good hygiene practice.

##### 6.14.2 No personal belongings to be kept on site

Apart from extra clean personal clothing no other personal belongings allowed on site except if kept in locker provided by the PC.

##### 6.14.3 No communal drinking facilities (shared cups etc.)

The PC to provide adequate supplies of bottled water to all employees on site. Empty bottles to be disposed of as normal waste. Training and awareness to address procedures and the importance of good hygiene practice.

##### 6.14.4 Larger meeting areas/ preferably use technology (Skype, Zoom, Microsoft teams):

The PC is to limit the number of employees at all activities to the minimum required to do the work in a safe manner. Where possible meetings must be held in open areas limited to essential personnel. Technological alternatives to be exploited for meeting attendance if possible. Training and awareness to address procedures and the importance of social distancing.

##### 6.14.5 Eating areas

The PC is to limit the number of employees at all activities to the minimum. Stagger lunchbreaks and resting periods for work teams. Training and awareness to address procedures and the importance of good hygiene practice and social distancing.

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Workers are required to stay on site once they have entered it and not use local shops.

Dedicated eating areas should be identified on site to reduce food waste and contamination.

- Break times should be staggered to reduce congestion and contact at all times.
- Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area;
- Workers should be asked to bring pre-prepared meals and refillable drinking bottles from home;
- Social distancing to be applied whilst eating and avoid all contact;
- Where catering is provided on site, it should provide pre-prepared and wrapped food only;
  - Payments should be taken by contactless card wherever possible;
  - Crockery, eating utensils, cups etc. should be disposable if supplied;
- Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced;
- Tables should be cleaned and disinfected between each use;
- All rubbish should be put straight in the bin and not left for someone else to clear up;
- All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, vending machines and payment devices.

#### 6.15 ADEQUATE RESOURCING OF PROJECTS

The PC will be required to price for the additional H&S related items that have arisen as a result of the Covid-19 pandemic and the regulations promulgated under the Disaster Management Act 2002 (Act No. 57 of 2002), as amended. The Bill of Quantities (BoQ) provided to the PC needs to take into account the requirements that have been identified in the BRA and the SSHSS. Contractors need to be able to price for the requirements and the appropriate BEP to assess the suitability of the items and pricing thereof.

A typical example of a H&S BoQ that would be adapted is included as Annexure B. The BoQ is not exhaustive and is dependent much on the amended BRA as approved by the Employer or his Principal agent. Should risk factors change, amendments will need to be made to the BoQ.

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## **7. CONTRACTUAL CONSIDERATIONS**

### **7.1 GENERAL CONSIDERATIONS**

Before considering the provisions of the common construction contracts in detail, the following general recommendations are made:

1. Should payment certificates not have been issued during the period of lockdown, they should be issued as soon as possible after recommencement of works, but no later than the end of May 2020.
2. The lockdown period will give rise to various typical force majeure claims and contractors will be entitled to submit extension of time claims for the period of the lockdown. These will be evaluated by the Principal Agent in accordance with the situation/conditions on site during the lockdown.
3. The Covid-19 epidemic and the continued lockdown regulations may have a further and continued impact to contractors after site re-opening. Those impacts will have to be assessed by the contractors and further claims for resulting delays to the project programmes may need to be considered.
4. Where time limits are applicable to claims and claim notifications, such time period should only be calculated from, at the earliest, the date on which the relevant construction site re-opens.
5. It is recommended that all claims arising from the lockdown be submitted and resolved as soon as possible after recommencement and well before any applicable time limits.
6. Any disputes emerging in regard to claims should be resolved expeditiously in accordance with the provisions in the contract.

### **7.2 APPLICABLE GENERAL CONDITIONS OF CONTRACT**

The following clauses in the General condition of contract are noted which are considered applicable to the Covid-19 Lockdown:

#### **7.2.1 GCC 2015**

1. Clause 5.12.1 provides that the contractor is entitled to an extension of time for the completion of the works if "circumstances of any kind whatsoever" will delay the achievement of practical completion of the works.
2. Clause 5.12.2.4 specifically lists "any disruption which is entirely beyond the contractor's control" as a circumstance entitling the contractor to an extension of time. A contractor will accordingly be entitled to an extension of time for delays caused by the lockdown and other circumstances resulting from Covid-19.
3. In terms of clause 5.12.3, if an extension of time is granted the contractor shall be paid such additional time-related general items as are appropriate.
4. Clause 5.12.4 provides that instead of granting an extension of time, if feasible, the contractor may be requested to accelerate the rate of progress to achieve practical completion and will be paid for the costs of such acceleration.
5. A contractor may also be entitled to a claim for extension of time with adjusted value in terms of clause 5.4.3 if an instruction to commence work was issued to the contractor but

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- the employer was unable to fulfil its obligation to give the contractor access and possession of site due to the limitations imposed during lockdown.
6. However, once the contractor has been given possession of the site, a claim under clause 5.4.3 would not be applicable.
  7. Covid-19 may also fall within the definition of "excepted risk" and in particular the reference to "epidemic plague" set out in clause 8.3.1.7.
  8. In terms of clause 8.3.2, the contractor is entitled to an extension of time and can recover additional costs where the contractor suffers a delay or loss directly or indirectly caused by an "excepted risk".
  9. Clause 9.1.2 read with clause 9.1.4 provides that the contractor is entitled to claim additional costs, which are not covered by the additional time-related general items, caused by "a state of emergency, riot, commotion politically motivated sabotaged acts of terrorism or disorder" and "any such event beyond the control of the contractor" that materially affects the execution of the works.
  10. Clause 9.1.4 requires the contractor to notify the engineer within 14 days of becoming aware of such increase in cost.
  11. In terms of clause 6.8.4 the contractor is entitled to any additional costs, which are not covered by the additional time-related general items, if at any time within 28 days before the closing of tender or thereafter, any act, ordinance, regulation or by-law is amended and this results in additional cost to the contractor.
  12. In terms of clause 10, the contractor is required to submit its claim for any extension of time or additional payment as follows:
    - (a) the contractor must submit its claim to the engineer in accordance with the specified requirements, within 28 days after the circumstance or event giving rise to such claim; and
    - (b) if the event giving rise to a claim is of an ongoing nature, the contractor is additionally required to deliver updated monthly claims to the engineer and submit its final claim within 28 days after the end of the event or circumstance.
  13. The parties may deliver a written notice of dispute to each other and the engineer of any dispute provided that the dispute arises from a rejected claim and it is delivered within 28 days of the event giving rise to the dispute.
  14. The dispute shall be referred to adjudication unless an amicable settlement is contemplated. The parties may agree to settle any claim or any dispute amicably with the help of an impartial third party. If the other party rejects amicable settlement in writing or does not respond to the invitation within 14 days or if the amicable settlement is unsuccessful the dispute shall be referred to adjudication.
  15. Either party is entitled to disagree with any decision of the Adjudication Board and refer the matter to arbitration or court proceedings, whichever is applicable in terms of the contract provided that a party disputes the adjudicator's decision not before 28 days or after 56 days from receipt of the decision.

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#### 7.2.2 GCC 2010

1. The contract provisions are the same in effect save for clause 8.3.1.7 relating to the excepted risk which is not part of GCC 2010.
2. The contractor may also be entitled to a claim for extension of time with adjusted value and additional costs in terms of clause 5.4.3, 5.10.1 and 5.11.2 as explained above in the GCC 2015 version. These clauses have the identical operation as in the 2015 version.
3. The clause numbering and content of the GCC 2010 dispute resolution process runs parallel to that of the GCC 2015, save that the 2010 version provides that the parties may deliver a written notice of dispute to each other and the engineer of any dispute provided that the dispute arises from an **unresolved claim** (and not a rejected claim as recorded in the 2015 version).

#### 7.2.3 NEC 3

1. Clause 60.1 defines a compensation event as:  
*"An event which stops the contractor completing the services or stops the contractor completing the services by the date shown on the accepted programme and:*
  - o *which neither party could prevent;*
  - o *an experienced consultant would have judged at the contract date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for it; and*
  - o *is not one of the other compensation events stated in this contract;*
2. A contractor must notify the project manager of a compensation event in accordance with clause 61.3 which provides that if the contractor has not given notice of the compensation event within eight weeks of becoming aware of the event, it will not be entitled to a change in the prices, the completion date or a key date (unless the project manager should have notified the event to the contractor but did not).
3. If the project manager does not respond to the contractor's notice timeously, it will be deemed to have accepted the existence of a compensation event.
4. If the employer does not respond to the contractor's abovementioned notice, it will be deemed to have accepted the existence of a compensation event.
5. The employer will then instruct the contractor to submit quotations which could impact the contract price and/or completion date.
6. Where the employer decides that the effects of a compensation event are too uncertain to be forecast reasonably, it must state assumptions about the event in its instruction to the contractor to submit quotations. Assessment of the event will then be based on these assumptions. If any of them is later found to have been incorrect, the employer must give notice of a correction.

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7. In terms of clause 63, a delay to the completion date is assessed as the length of time that, due to the compensation event, planned completion is later than the planned completion shown on the accepted programme.
8. The NEC3 makes provision for a risk register which is "a register of the risks which are listed in the contract Data and the risks which the project manager or the contractor has notified as an early warning matter. It includes a description of the risk and a description of the actions which are to be taken to avoid or reduce the risk."
9. It is recommended that Covid-19 and the Disaster Management Regulations and their impact be included in the Risk Register.
10. In terms of clause 16.1 the contractor and the project manager will give an early warning by notifying the other as soon as either becomes aware of any matter which could:
  - o increase the total of the prices;
  - o delay completion;
  - o delay meeting a key date; or
  - o impair the performance of the works in use.
11. The contractor may give an early warning by notifying the project manager of any other matter which could increase its total cost.
12. The project manager then enters early warning matters in the risk register. Early warning of a matter for which a compensation event has previously been notified is not required.
13. In terms of clause 16.3, the parties will then hold a risk reduction meeting in order to:
  - o make and consider proposals for how the effect of the registered risks can be avoided or reduced;
  - o seek solutions that will bring an advantage to those affected;
  - o decide on the action to be taken in accordance with the contract; and
  - o decide which risks have been avoided or have passed and can be removed from the Risk Register.
14. The NEC3 series of contracts mandate adjudication as a dispute resolution procedure. An adjudicator is appointed by the parties in terms of an NEC Adjudicator's Contract.
15. The adjudication procedure is included either in section 9 of the core clauses or under Option W1 (Dispute Resolution).
16. The contracts provide that a party referring a matter to an adjudicator must do so on notice, and within the time periods specified in the adjudication table. The table refers to four categories of disputes and specifies which party may refer each category to adjudication and the timelines for doing so.

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17. Where the adjudicator's decision includes assessment of additional cost or delay caused to the contractor, he makes his assessment in the same way as a compensation event is assessed.
18. The adjudicator's decision is binding unless and until revised by the tribunal (arbitration or litigation as selected by the parties in the contract data), alternatively it is binding if a party does not notify the other party of his intention to refer the matter to the tribunal within 4 weeks of the adjudicator's decision. The adjudicator's decision will be enforceable as a contractual obligation.
19. The dispute may not be referred to the tribunal if the matter has not first been referred to the adjudicator.



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ANNEXURE A

BASIC RISK ASSESSMENT

BASELINE RISK ASSESSMENT						LOW	MED	HIGH	
Risk Rating multiplier: Low = 1; Medium = 2; High = 3						4	6	8	
<p><b>PREPARED BY:</b></p> <p><b>Note:</b> This is a broad overview of the activities expected and available during the design stage of the project. Key issues will be addressed during the construction stage, and may be updated during this time. Consolidation of activities where overlap or applicable throughout the project (plant, material or other common activities). Compliance with all the applicable legislation is required. Penalties for non-compliances will be applied where issues not addressed as per the H&amp;S Specification (as amended).</p> <p><b>REFERENCES/ABBREVIATIONS:</b> OHS Act Occupational Health and Safety Act (applies overall); GAR = General Administration Regulations; GSR = General Safety Regulations; HBR = Hazardous Biological Regulations; CR = Construction Regulations; HCSR = Hazardous Chemical Substances Regulations; FR = Facilities Regulations; EIR = Electrical Installation Regulations; DMR = Driven Machinery Regulations; PER = Pressure Equipment Regulations; RTA = Road Traffic Safety Act; SANS = 1200 (unless stated) SANS 10085 = Access Scaffolding; SANS 10083 = Audiometry standards; SANS 1300, 10142, 10400 &amp; 2001 = Building &amp; Electrical Standards; SARTSM = South African Roads and Traffic Signs Manual; PC = Principal Contractor;</p>									
LEGAL REF	DESIGN ASPECTS PRESENT	DESCRIBE THE METHODS AND ACTIVITIES USUALLY PROVIDED BY THE PC AND CONTRACTOR	Baseline design: RAW RISK				Baseline Design: Residual risk		
			LIKELY CONSEQUENCES OF AN ACCIDENT	FREQUENCY OF EXPOSURE	PROBABILITY OF HARM	RISK RATING AND RISK CATEGORY	LIKELY CONSEQUENCES OF AN ACCIDENT	FREQUENCY OF EXPOSURE	PROBABILITY OF HARM

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**ANNEXURE B**

**TYPICAL TO COVID-19 RELATED OCCUPATIONAL HEALTH AND SAFETY BILL OF QUANTITIES**

**SECTION A: PRELIMINARY AND GENERAL ITEMS**

ITEM No	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
	<b>SECTION A</b>				
	OHS Act and Construction Regulations (2014)				
A1	Preparation of the Contractor's site specific Health and Safety Plan				
A1.1	Review of OHS Plan for each assignment. Rate to include for risk assessment specific to the COVID-19 Epidemic and other adjustments to ensure compliance for the Regulations	Sum			
A1.2	Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations				
	Signage- COVID-19 Related	Sum			
A1.3	Provision of Personal Protective Equipment (PPE) related to COVID-19 virus				
A1.3.1	Face Mask for COVID-19 (respiratory protection (as required))	No			
A1.3.2	Surgical Gloves ( for security and cleaning team)	No			
A1.3.3	Safety Goggles for Screening Person	No			
A1.4	Cost of medical certificates and medical surveillance				
A1.4.1	Initial (baseline) medical examinations				
	Screenings for Employees with COVID-19 Symptoms	Sum			
A1.4.2	Periodic and exit examinations				
	Screenings for Employees with COVID-19 Symptoms	No			
	Contractor's charges to allow for handling costs and profit in respect of A1.4.1 and A.4.2	%			
A1.5	Induction training				
A1.5.1	Re-induction for Covid-19	Sum			
A1.6	Provision of First Aid Boxes to GSR requirements				

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ITEM No	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
	Non-contact thermometers for Covid-19	No			
<b>SUBTOTAL CARRIED FORWARD</b>					
<b>SUBTOTAL BROUGHT FORWARD</b>					
A2	<u>Fixed Charge Items</u>				
A2.1	Facilities for Contractor including offices, storage sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, water supplies, electric power, communications, setting out of Works, security and dealing with water, traffic and access. Made COVID-19 Safe	Sum			
A2.2	Other fixed-charge obligations for COVID-19				
A2.2.1	Hand Sanitiser - 500ml	No			
A2.2.2	Cleaning and detergents for cleaning everyday	No			
A2.2.3	Daily Logbook for usage of the above accessories	No			
A2.2.4	Extra cleaning staff	No			
A2.2.5	Maintenance of a register for workers contacts including Covid-19 screening status	Sum			
A3	Waste management for COVID-19				
A3.1	Waste Bins	No			
A3.2	Waste disposal considered to hazardous in terms of Covid-19	Sum			
A4	Transportation				
A4.1	Transport to Construction Site Safety for COVID-19	Sum			
A5	<u>Time Related Items</u>				
	Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations				
A5.1	COVID-19 Related	weeks			
A6	Removal of Site establishment on completion				
<b>TOTAL (Excluding VAT)</b>					

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CLIENT:  
PROJECT:













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**ANNEXURE C**

**PPE ISSUE REGISTER**

**LOCATION / SITE NAME:** ..... **COMPANY NAME:** .....

**ISSUED BY:** .....

												ENTER NAME AND SURNAME & SIGN BELOW EACH ITEM RECEIVED
Gloves	Hard Hat	Overhaul	Safety Boots	Reflective Vest	Safety Glasses	Dust Mask	Earplugs	Safety Harness	Welding Gloves	Welding Helmet/ Glasses	Welding Apron	ENTER NAME AND SURNAME

CLIENT:  
PROJECT:

## ANNEXURE D

### COVID-19 QUESTIONNAIRE & DECLARATION

Contractor Name: \_\_\_\_\_

**Important : Please note that this is an individual Questionnaire.**

Site/Work Area: \_\_\_\_\_

Employee Name and Surname: \_\_\_\_\_

Date: \_\_\_\_\_

Line Manager: \_\_\_\_\_

Symptomatic Screening Questionnaire	Yes	No
Have you experienced symptoms of flu or had flu in the past two weeks?		
Have you experienced any coughing or breathing abnormalities lately?		
Do you currently have a fever or have you been experiencing symptoms of a fever? ( Red eyes, burning sensation )		
In the last 14 days, have you come into contact with any person that has displayed symptoms or tested positive for COVID 19?		
Have you travelled outside the borders of South- Africa lately?		
Have you been tested for COVID 19?		

#### Personal Commitment

1. I Will further to the above , declare any immediate changes in my health to my line manager
2. I will Adhere to all the guidelines set out by Thermaire & Ampair in the COVID 19 management plan
3. I will maintain good hygiene practices
4. I will maintain social distance from employees at all times
5. I will utilize ppe and sanitizer provided at all times.
6. I will ensure that shared equipment, as far as reasonably practicable , has been sanitized before handover to other employees.

I, \_\_\_\_\_ Declare that the document is a true statement of my current health and hereby will adhere to all guidelines set out.

Employee Signature \_\_\_\_\_

Temperature reading If available (Refer to health practioner if above 38 degrees Celsius)		
Employee Cleared for entrance ( Circle )	Yes	No

Questionnaire reviewed by :

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

**CONTRACT No: HGDM 744/HGDM/2021**

**CONSTRUCTION OF 4.65KM RISING MAIN 160-90mm DIA. DUCTILE IRON/uPVC PIPELINE AND INSTALLATION OF BOREHOLES AT MPUMULWANE VILLAGE**

**PART C4: SITE INFORMATION**

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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 have not been undertaken on the site.

- LEGEND**
- STORAGE RESERVOIR
  - ⊗ SCOUR VALVE
  - ⊙ AIR VALVE
  - ⊠ ISOLATION VALVE
  - ⊙ BOREHOLE



LINE NO.	START	END	PIPE DIA.	PIPE MAT'L.	PIPE SLOPE	INVERT	TRENCH	DEPTH	VALVE	BOREHOLE	REMARKS
1	0+00	0+05	12"	PVC	0.00%	2.50'	18"	1.50'			
2	0+05	0+10	12"	PVC	0.00%	2.50'	18"	1.50'			
3	0+10	0+15	12"	PVC	0.00%	2.50'	18"	1.50'			
4	0+15	0+20	12"	PVC	0.00%	2.50'	18"	1.50'			
5	0+20	0+25	12"	PVC	0.00%	2.50'	18"	1.50'			
6	0+25	0+30	12"	PVC	0.00%	2.50'	18"	1.50'			
7	0+30	0+35	12"	PVC	0.00%	2.50'	18"	1.50'			
8	0+35	0+40	12"	PVC	0.00%	2.50'	18"	1.50'			
9	0+40	0+45	12"	PVC	0.00%	2.50'	18"	1.50'			
10	0+45	0+50	12"	PVC	0.00%	2.50'	18"	1.50'			
11	0+50	0+55	12"	PVC	0.00%	2.50'	18"	1.50'			
12	0+55	0+60	12"	PVC	0.00%	2.50'	18"	1.50'			
13	0+60	0+65	12"	PVC	0.00%	2.50'	18"	1.50'			
14	0+65	0+70	12"	PVC	0.00%	2.50'	18"	1.50'			
15	0+70	0+75	12"	PVC	0.00%	2.50'	18"	1.50'			
16	0+75	0+80	12"	PVC	0.00%	2.50'	18"	1.50'			
17	0+80	0+85	12"	PVC	0.00%	2.50'	18"	1.50'			
18	0+85	0+90	12"	PVC	0.00%	2.50'	18"	1.50'			
19	0+90	0+95	12"	PVC	0.00%	2.50'	18"	1.50'			
20	0+95	1+00	12"	PVC	0.00%	2.50'	18"	1.50'			

NAD 83  
 GDA 111  
 Horizontal: 1:1000  
 Vertical: 1:200  
 DATUM: MSL

REFERENCE	
DATE	
SCALE	
PROJECT	
DRAWN	
CHECKED	
APPROVED	

DATE	25-07-2020
SCALE	2 OF 13
PROJECT	MPUMULWANE RETICULATION NETWORK - RISING MAIN
CLIENT	HARRY GNALLA DISTRICT MUNICIPALITY
PROJECT	KHUKHULELA WATER SUPPLY SCHEME - MPUMULWANE RETICULATION
CLIENT	MPUMULWANE RETICULATION NETWORK - RISING MAIN

- LEGEND**
- STORAGE RESERVOIR
  - SCOUR VALVE
  - AR VALVE
  - ISOLATION VALVE
  - BOREHOLE



REVISIONS

NO.	DESCRIPTION	DATE

NAME: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

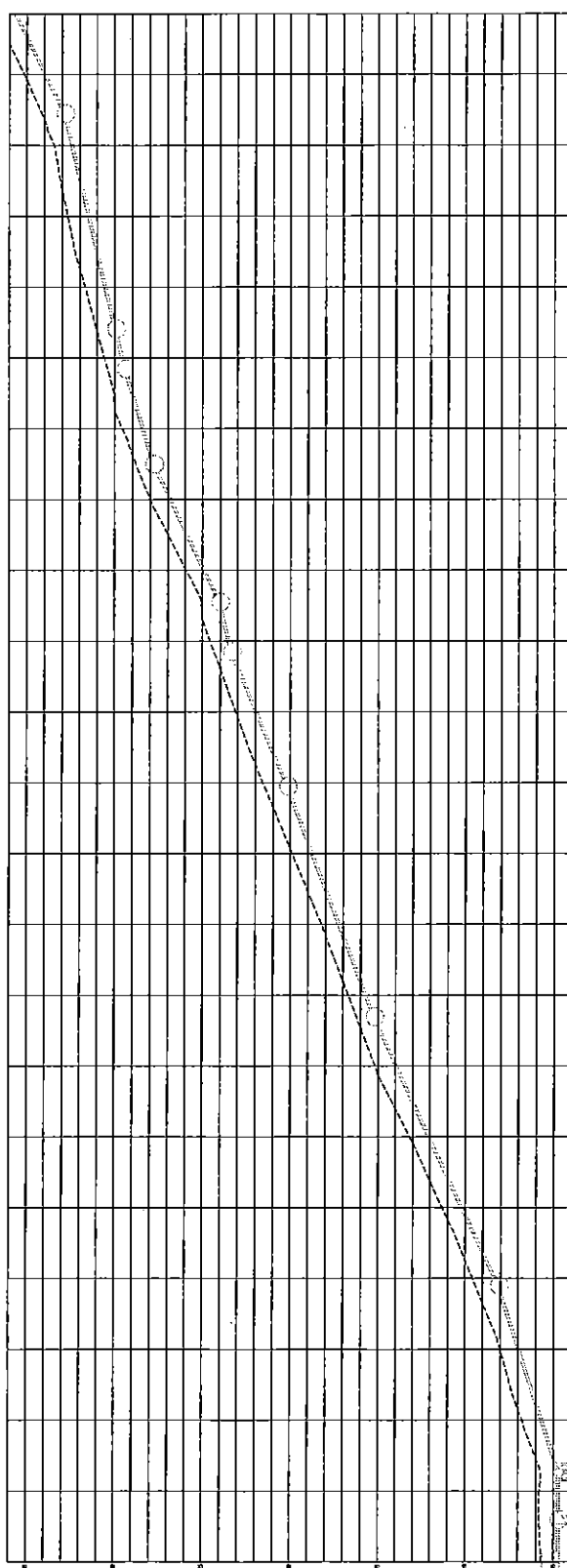
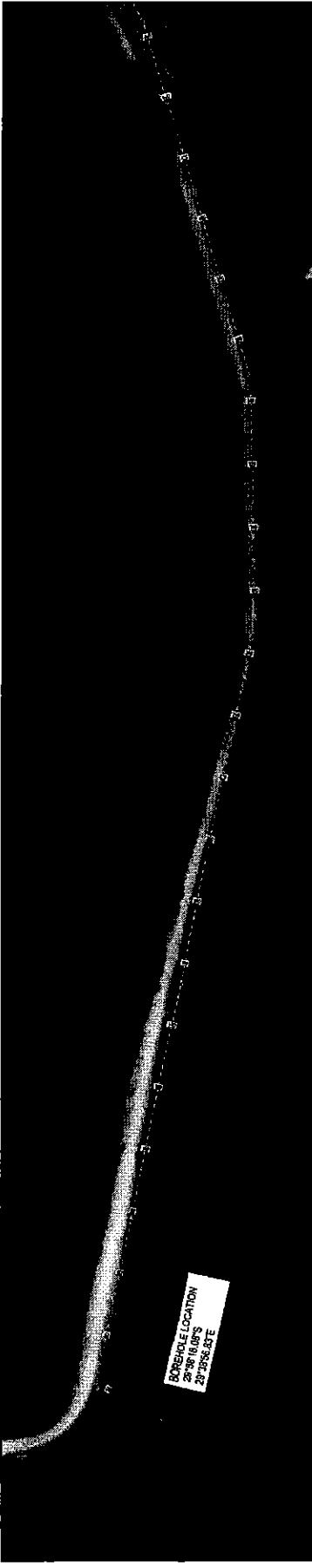


HARRY GWALA DISTRICT MUNICIPALITY

PROJECT: KHUKHULA WATER SUPPLY SCHEME - MPUMALANE RETICULATION

DRAWING TITLE: MPUMALANE RETICULATION NETWORK - RISING MAIN

SCALE: \_\_\_\_\_  
 DATE: 20-10-2024  
 DRAWING NO: KHE-001-24  
 SHEET NO: 01 OF 01



STATION	PIPE INVERT (m)	GROUND LEVEL (m)	TRENCH DEPTH (m)	PIPE INVERT LEVEL (m)	DEPTH TO INVERT (m)	TRENCH LEVEL (m)	DEPTH TO TRENCH (m)	SLOPE (LENGTH)	CHANGE IN DIRECTION	FITTINGS	HYDRANTS
0+00	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+10	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+20	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+30	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+40	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+50	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+60	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+70	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+80	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+90	10.50	12.50	2.00	10.50	0.00	10.50	2.00				
0+100	10.50	12.50	2.00	10.50	0.00	10.50	2.00				

NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 SCALE: 1:500  
 PROJECT: KHUKHULA WATER SUPPLY SCHEME - MPUMALANE RETICULATION

**DATA IN METERS**

PIPE INVERT LEVEL	10.50
DEPTH TO INVERT	0.00
TRENCH LEVEL	10.50
DEPTH TO TRENCH	2.00
SLOPE (LENGTH)	
CHANGE IN DIRECTION	
FITTINGS	
HYDRANTS	



**LEGEND**

■ STORAGE RESERVOIR

⊕ SCOUR VALVE

⊖ AIR VALVE

⊗ ISOLATION VALVE

⊙ BOREHOLE

REVISIONS	DESCRIPTION



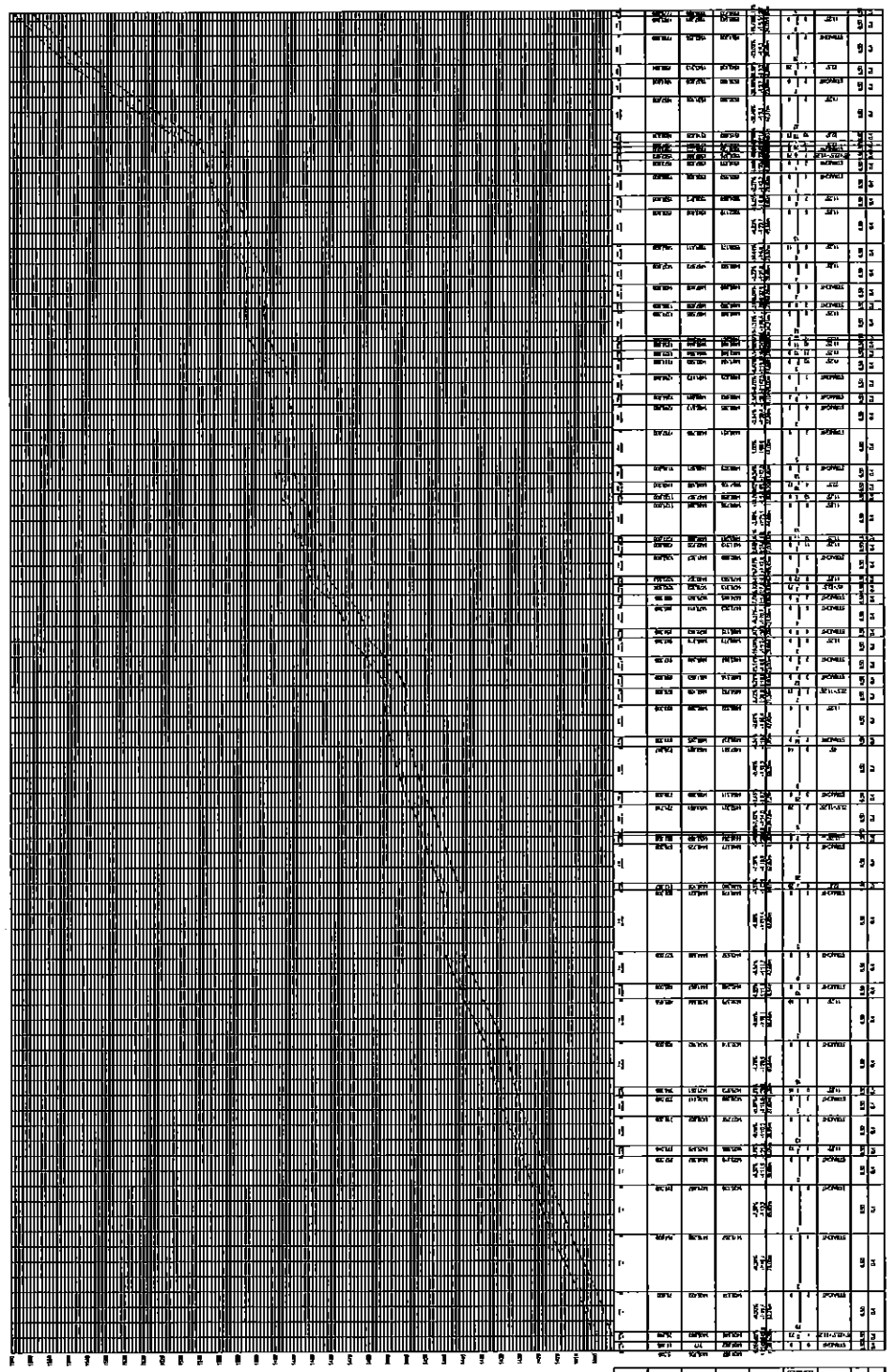
Client: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Drawing No: \_\_\_\_\_  
 Scale: \_\_\_\_\_  
 Project Name: \_\_\_\_\_



**HARRY GWALA DISTRICT MUNICIPALITY**  
**KHUKHULELA WATER SUPPLY SCHEME - MPUMULWANE RETICULATION**

**MPUMULWANE RETICULATION NETWORK - RISING MAIN**

DATE:	25.12.2020
SCALE:	AS SHOWN
DRAWN BY:	
CHECKED BY:	
DATE:	
SCALE:	
DRAWN BY:	
CHECKED BY:	



REFERENCE	DESCRIPTION
REF 1	EXISTING (M)
REF 2	GROUND LEVEL
REF 3	PIPE INVERT LEVEL
REF 4	SURFACE LEVEL
REF 5	CHANNEL DIRECTION
REF 6	FITTINGS
REF 7	HYDRAULICS

M.S.E.  
 SCALE: 1:1000  
 DATUM: DATUM

**LEGEND**

STORAGE RESERVOIR

SCOUR VALVE

AIR VALVE

ISOLATION VALVE

BH BOREHOLE

REVISIONS	REVISION



DEPARTMENT OF WATER AND SANITATION  
FREE STATE

PROJECT NO: \_\_\_\_\_

DATE: \_\_\_\_\_

DESIGNED BY: \_\_\_\_\_

CHECKED BY: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

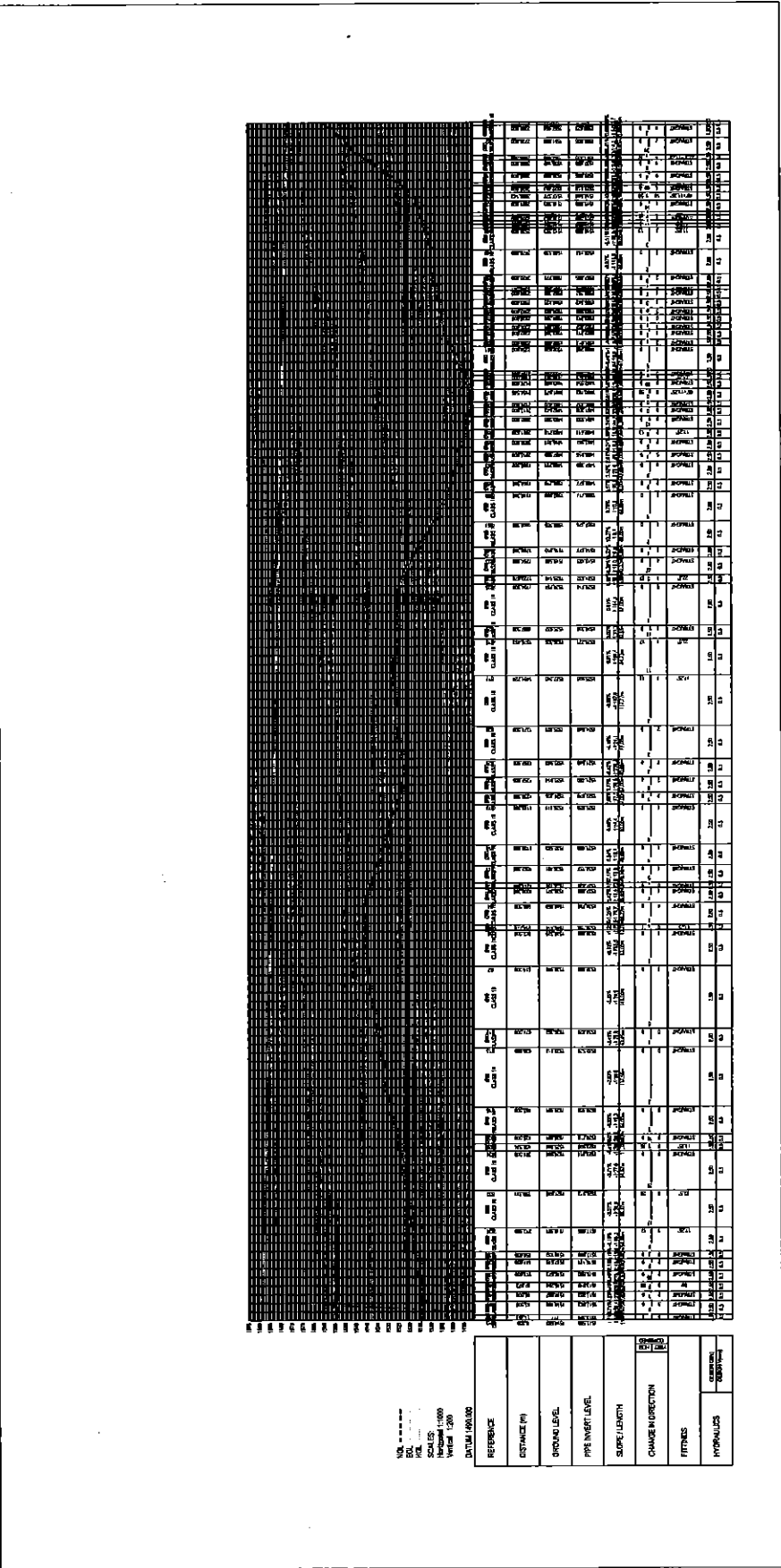


HARRY GWALA  
DISTRICT  
MUNICIPALITY

PROJECT: KHUKHULELA WATER SUPPLY  
SCHEME - MPUMULWANE  
RETICULATION

PROJECT TITLE: MPUMULWANE RETICULATION  
NETWORK - RISING MAIN

SCALE: 1:100	DATE: 23-10-2020	SHEET NO: 14
PROJECT NO: KPL-RET-14	AD: 0	



NSR: \_\_\_\_\_  
 DL: \_\_\_\_\_  
 SCALE: Horizontal 1:100  
 Vertical 1:20  
 DATUM: 1984/85

REFERENCE	
DISTANCE (PI)	
GROUND LEVEL	
PIPE INVERT LEVEL	
SURGE LENGTH	
CHANGE IN DIRECTION	
FITTINGS	
HYDRANTS	

**LEGEND**

- STORAGE RESERVOIR
- SCOUR VALVE
- AIR VALVE
- ISOLATION VALVE
- BOREHOLE

NO.	REVISIONS



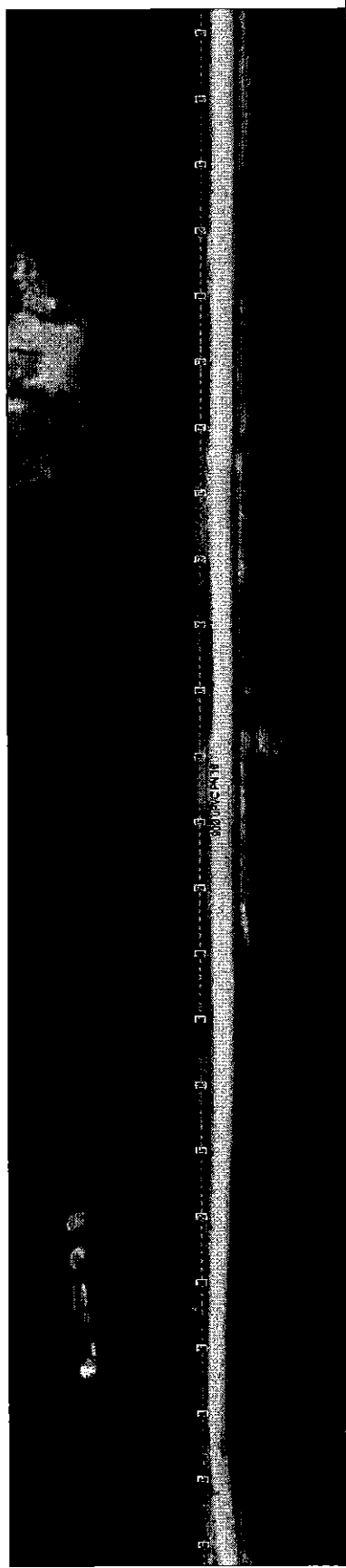
NAME: P. M. M. M.  
 MUNICIPALITY: ...  
 PROJECT: ...



PROJECT: KHUKHULELA WATER SUPPLY SCHEME - MPUMULWANE RETICULATION

MPUMULWANE RETICULATION NETWORK - RISING MAIN

SCALE: 1:500	DATE: 25-10-2010	PROJECT NO: 12
DRAWN BY: ...	CHECKED BY: ...	DATE: ...



STATION	PIPE INVERT (m)	GROUND LEVEL (m)	DEPTH TO INVERT (m)	PIPE DIA (mm)	PIPE MATERIAL	PIPE SLOPE (%)	PIPE LENGTH (m)	PIPE NO.
0+00	1.730	1.730	0.00	150	PVC	0.00	0.00	1
0+10	1.730	1.730	0.00	150	PVC	0.00	10.00	2
0+20	1.730	1.730	0.00	150	PVC	0.00	20.00	3
0+30	1.730	1.730	0.00	150	PVC	0.00	30.00	4
0+40	1.730	1.730	0.00	150	PVC	0.00	40.00	5
0+50	1.730	1.730	0.00	150	PVC	0.00	50.00	6
0+60	1.730	1.730	0.00	150	PVC	0.00	60.00	7
0+70	1.730	1.730	0.00	150	PVC	0.00	70.00	8
0+80	1.730	1.730	0.00	150	PVC	0.00	80.00	9
0+90	1.730	1.730	0.00	150	PVC	0.00	90.00	10
1+00	1.730	1.730	0.00	150	PVC	0.00	100.00	11

STATION	PIPE INVERT (m)	GROUND LEVEL (m)	DEPTH TO INVERT (m)	PIPE DIA (mm)	PIPE MATERIAL	PIPE SLOPE (%)	PIPE LENGTH (m)	PIPE NO.
1+10	1.730	1.730	0.00	150	PVC	0.00	110.00	12
1+20	1.730	1.730	0.00	150	PVC	0.00	120.00	13
1+30	1.730	1.730	0.00	150	PVC	0.00	130.00	14
1+40	1.730	1.730	0.00	150	PVC	0.00	140.00	15
1+50	1.730	1.730	0.00	150	PVC	0.00	150.00	16
1+60	1.730	1.730	0.00	150	PVC	0.00	160.00	17
1+70	1.730	1.730	0.00	150	PVC	0.00	170.00	18
1+80	1.730	1.730	0.00	150	PVC	0.00	180.00	19
1+90	1.730	1.730	0.00	150	PVC	0.00	190.00	20
2+00	1.730	1.730	0.00	150	PVC	0.00	200.00	21

REFERENCE	DATE
DISTANCE (m)	
GROUND LEVEL	
PIPE INVERT LEVEL	
DEPTH TO INVERT	
PIPE DIA	
PIPE MATERIAL	
PIPE SLOPE	
PIPE LENGTH	
CHANGE IN DIRECTION	
FITTINGS	
HYDRAULIC	



**LEGEND**

- STORAGE RESERVOIR
- SCOUR VALVE
- AIR VALVE
- ISOLATION VALVE
- BOREHOLE



**REVISIONS**  
 No. Description  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_

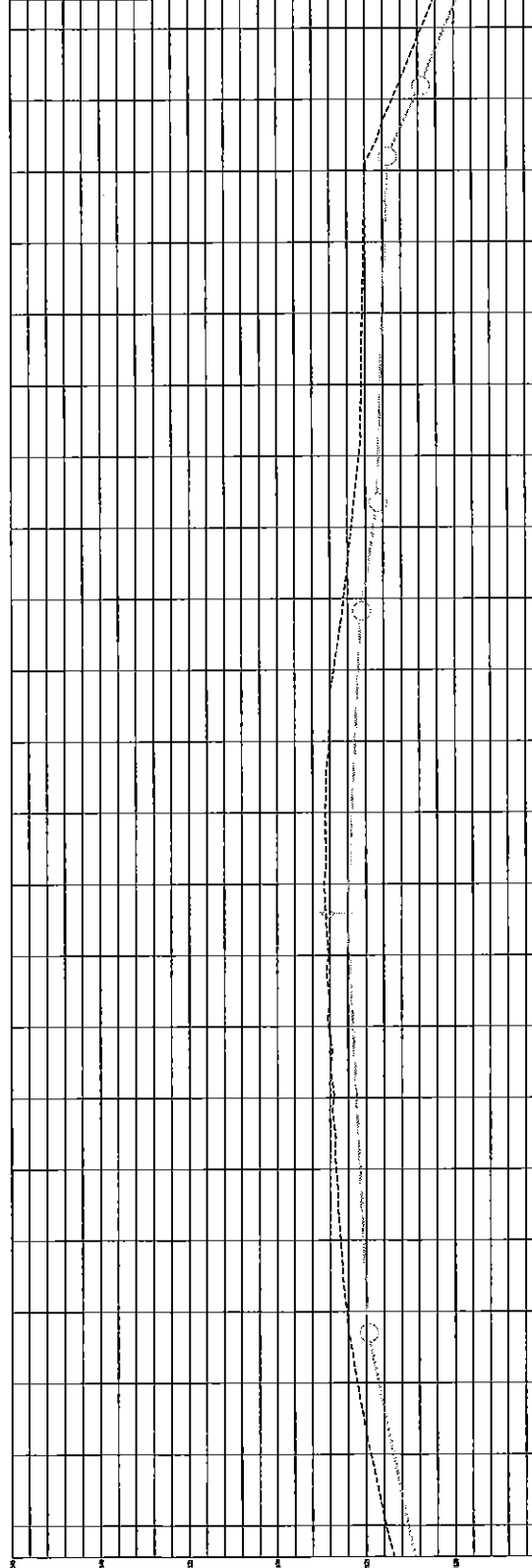
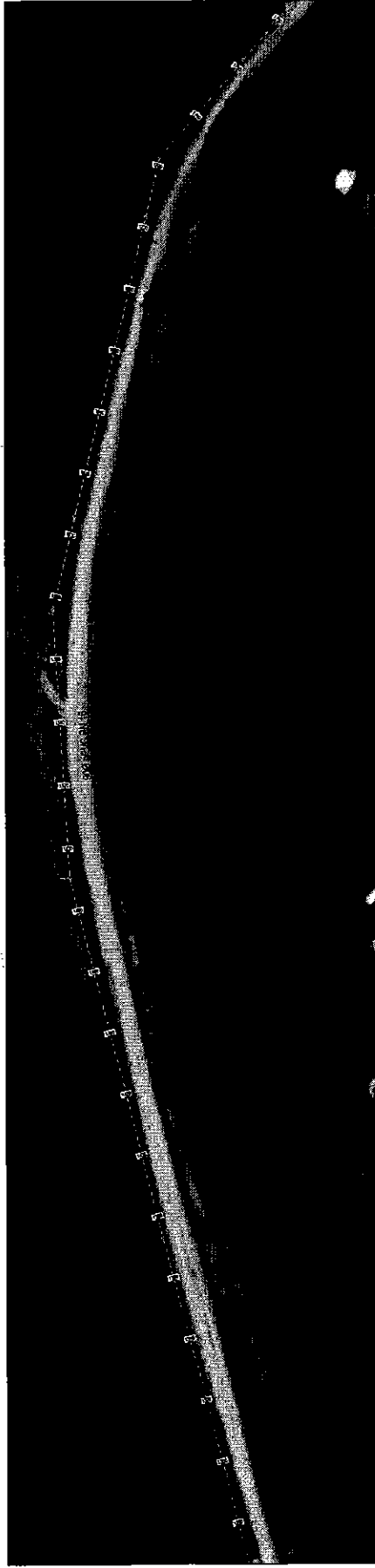
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 P. No.: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Drawing No.: \_\_\_\_\_  
 Scale: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Client: \_\_\_\_\_

**HARRY GWALA DISTRICT MUNICIPALITY**

**KHUKHULELA WATER SUPPLY SCHEME - MPUMULWANE RETICULATION**  
**MPUMULWANE RETICULATION NETWORK - RISING MAIN**

DRAWING TITLE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

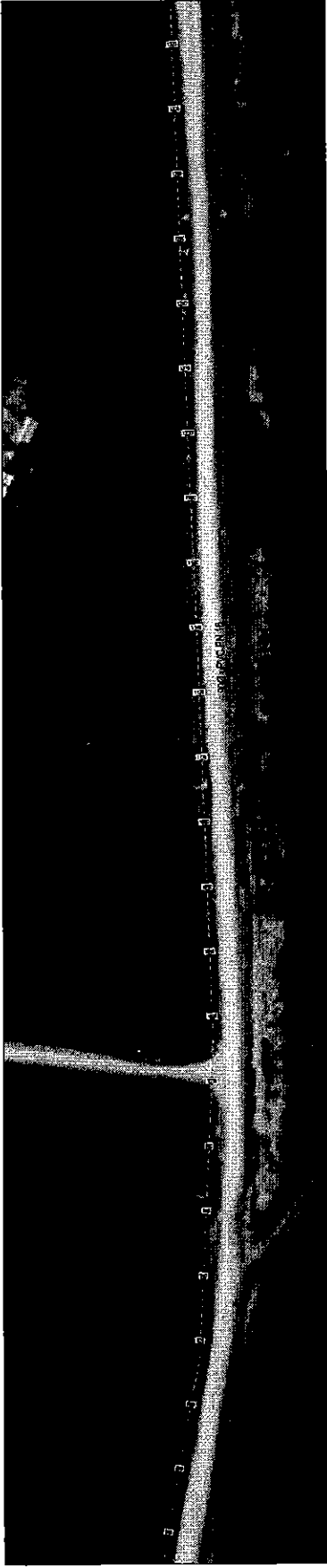
SHEET NO. 1 OF 12  
 PROJECT NO. KHU-RET-009



NO.	SECTION	SECTION 1		SECTION 2		SECTION 3		SECTION 4		SECTION 5		SECTION 6		SECTION 7		SECTION 8		TOTAL
		START	END	START	END	START	END	START	END	START	END	START	END	START	END	START	END	
1	1	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

USE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 SCALE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

REFERENCE	_____
DISTANCE IN	_____
GROUND LEVEL	_____
PIPEWORK LEVEL	_____
DEPTH TO INVERT	_____
TRENCH LEVEL	_____
DEPTH TO TRENCH	_____
SLOPE LENGTH	_____
CHANGE IN DIRECTION	_____
FITTINGS	_____
HYDRAULICS	_____



- LEGEND**
- STORAGE RESERVOIR
  - SCOUR VALVE
  - AIR VALVE
  - ISOLATION VALVE
  - BOREHOLE



**PAVANSHIL SHILVAJE**  
CONSULTANTS (PVT) LTD.

**HAREY GWALA DISTRICT MUNICIPALITY**

**KHUKHULELA WATER SUPPLY SCHEME - AMPHULUWANE RETICULATION**

**AMPHULUWANE RETICULATION NETWORK - RISING MAIN**

DATE: 25-12-2023  
DRAWING NO: 144-RET-003  
SHEET NO: 0

STATION	CHANGING ENGINEER	DATE	REVISION	DESCRIPTION
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NO. 1	REFERENCE	DATE
NO. 2	DISTANCE (M)	
NO. 3	GROUND LEVEL	
NO. 4	PIPE INST. LEVEL	
NO. 5	DEPTH TO INVERT	
NO. 6	TRENCH LEVEL	
NO. 7	DEPTH TO TRENCH	
NO. 8	SLOPE LENGTH	
NO. 9	CHANGE IN DIRECTION	
NO. 10	FITTINGS	
NO. 11	HYDRAULICS	

**LEGEND**

- STORAGE RESERVOIR
- ⊕ SCOUR VALVE
- ⊕ AIR VALVE
- ⊗ ISOLATION VALVE
- ⊕ BOREHOLE

**REVISIONS**

No.	Description	Date



**PANKAJ & SARABJIT**  
CONSULTANTS

**HARRY GWALA DISTRICT MUNICIPALITY**

**KHUKHULELA WATER SUPPLY SCHEME - MPUMALANE RETICULATION**

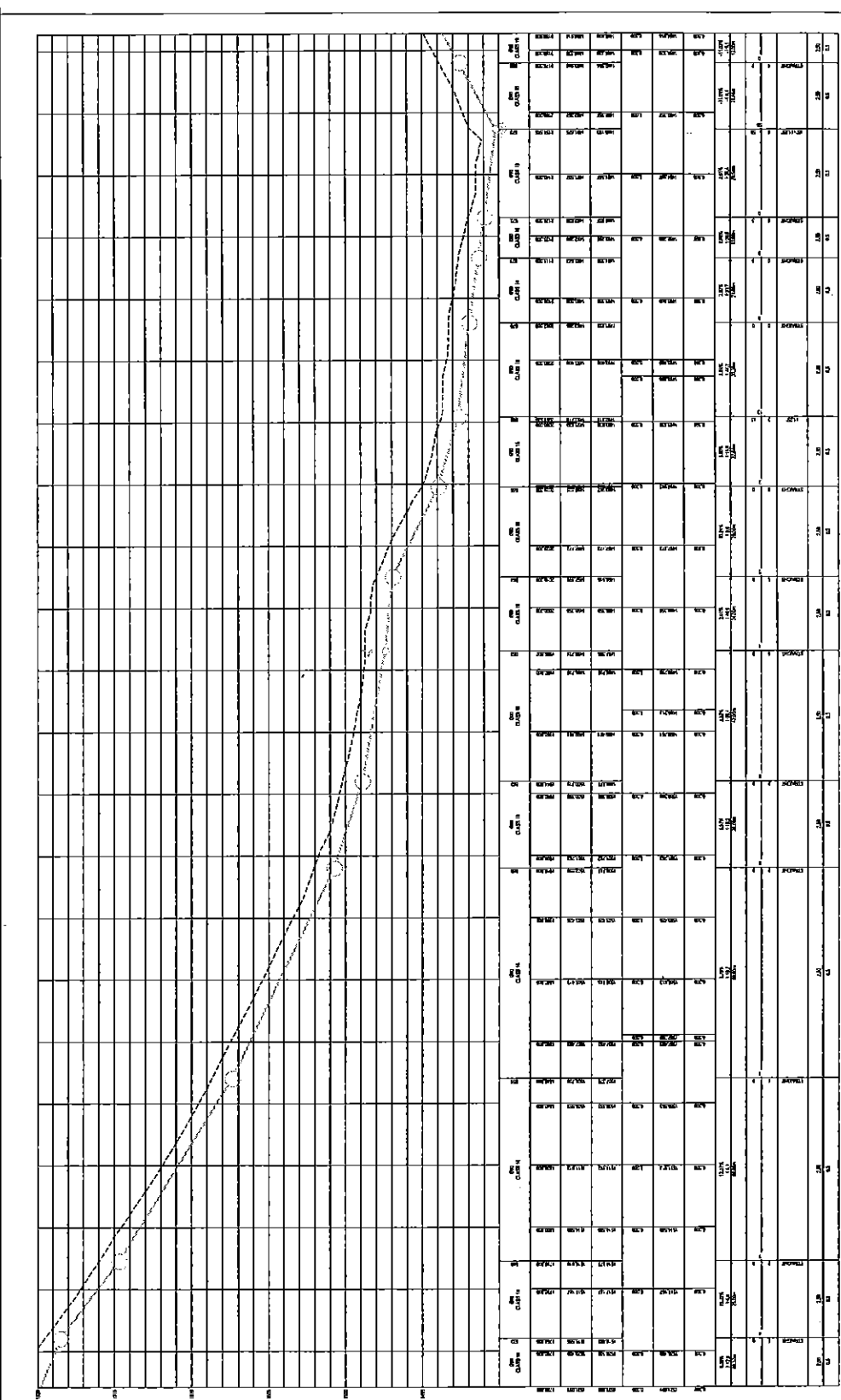
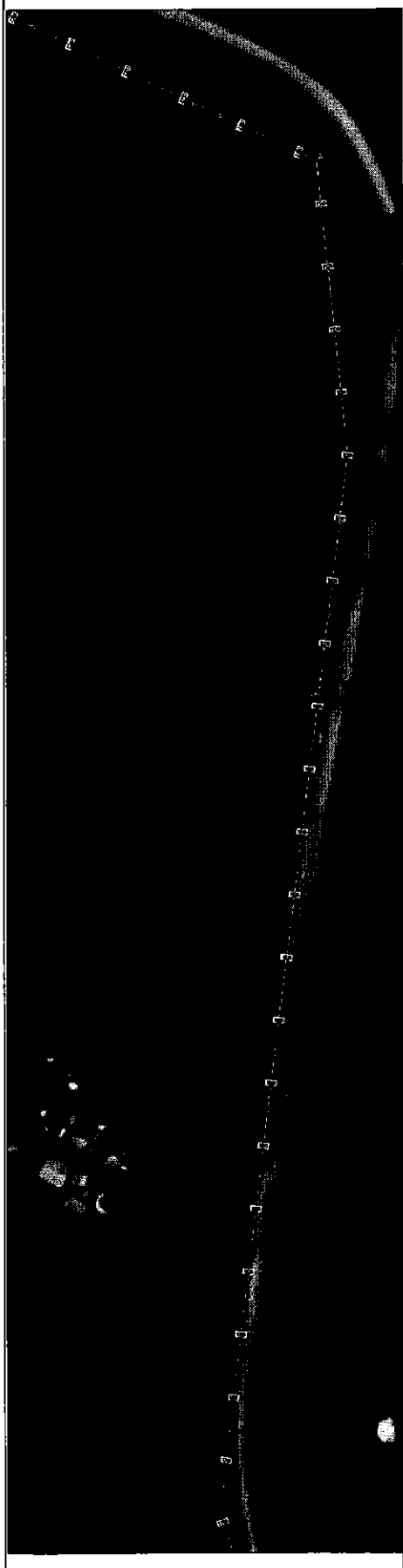
Name: \_\_\_\_\_ Drawing No: \_\_\_\_\_ Date: \_\_\_\_\_

Registration: \_\_\_\_\_ Consulting Engineer: \_\_\_\_\_

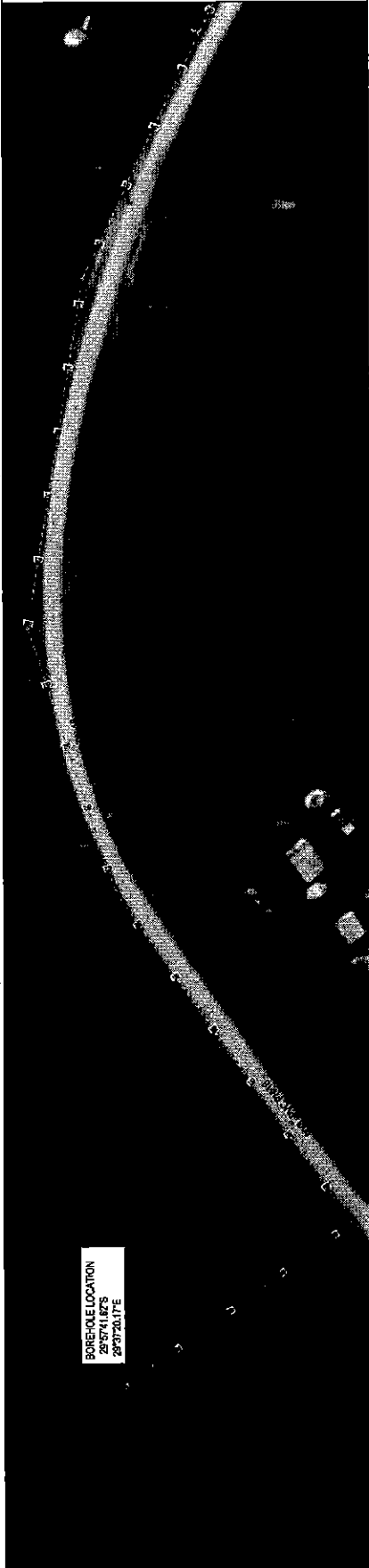
REVISIONS BY: \_\_\_\_\_

CHECKED BY: \_\_\_\_\_

DATE: \_\_\_\_\_



REFERENCE	DEPTH (M)	GROUND LEVEL	PIPE INVERT LEVEL	DEPTH TO INVERT	THROCK LEVEL	DEPTH TO TRENCH	SLOPE LENGTH	CHANGE IN DIRECTION	SPACING (M)	HYDRAULICS
01	0.75	101.20	100.45	0.75	101.20	0.75				
02	0.75	101.10	100.40	0.70	101.10	0.70				
03	0.75	101.00	100.35	0.65	101.00	0.65				
04	0.75	100.90	100.30	0.60	100.90	0.60				
05	0.75	100.80	100.25	0.55	100.80	0.55				
06	0.75	100.70	100.20	0.50	100.70	0.50				
07	0.75	100.60	100.15	0.45	100.60	0.45				
08	0.75	100.50	100.10	0.40	100.50	0.40				
09	0.75	100.40	100.05	0.35	100.40	0.35				
10	0.75	100.30	100.00	0.30	100.30	0.30				
11	0.75	100.20	99.95	0.25	100.20	0.25				
12	0.75	100.10	99.90	0.20	100.10	0.20				
13	0.75	100.00	99.85	0.15	100.00	0.15				
14	0.75	99.90	99.80	0.10	99.90	0.10				
15	0.75	99.80	99.75	0.05	99.80	0.05				
16	0.75	99.70	99.70	0.00	99.70	0.00				
17	0.75	99.60	99.65	0.05	99.60	0.05				
18	0.75	99.50	99.60	0.10	99.50	0.10				
19	0.75	99.40	99.55	0.15	99.40	0.15				
20	0.75	99.30	99.50	0.20	99.30	0.20				
21	0.75	99.20	99.45	0.25	99.20	0.25				
22	0.75	99.10	99.40	0.30	99.10	0.30				
23	0.75	99.00	99.35	0.35	99.00	0.35				
24	0.75	98.90	99.30	0.40	98.90	0.40				
25	0.75	98.80	99.25	0.45	98.80	0.45				
26	0.75	98.70	99.20	0.50	98.70	0.50				
27	0.75	98.60	99.15	0.55	98.60	0.55				
28	0.75	98.50	99.10	0.60	98.50	0.60				
29	0.75	98.40	99.05	0.65	98.40	0.65				
30	0.75	98.30	99.00	0.70	98.30	0.70				
31	0.75	98.20	98.95	0.75	98.20	0.75				
32	0.75	98.10	98.90	0.80	98.10	0.80				
33	0.75	98.00	98.85	0.85	98.00	0.85				
34	0.75	97.90	98.80	0.90	97.90	0.90				
35	0.75	97.80	98.75	0.95	97.80	0.95				
36	0.75	97.70	98.70	1.00	97.70	1.00				
37	0.75	97.60	98.65	1.05	97.60	1.05				
38	0.75	97.50	98.60	1.10	97.50	1.10				
39	0.75	97.40	98.55	1.15	97.40	1.15				
40	0.75	97.30	98.50	1.20	97.30	1.20				
41	0.75	97.20	98.45	1.25	97.20	1.25				
42	0.75	97.10	98.40	1.30	97.10	1.30				
43	0.75	97.00	98.35	1.35	97.00	1.35				
44	0.75	96.90	98.30	1.40	96.90	1.40				
45	0.75	96.80	98.25	1.45	96.80	1.45				
46	0.75	96.70	98.20	1.50	96.70	1.50				
47	0.75	96.60	98.15	1.55	96.60	1.55				
48	0.75	96.50	98.10	1.60	96.50	1.60				
49	0.75	96.40	98.05	1.65	96.40	1.65				
50	0.75	96.30	98.00	1.70	96.30	1.70				



BOREHOLE LOCATION  
26°57'41.82\"/>

**LEGEND**

■ STORAGE RESERVOIR

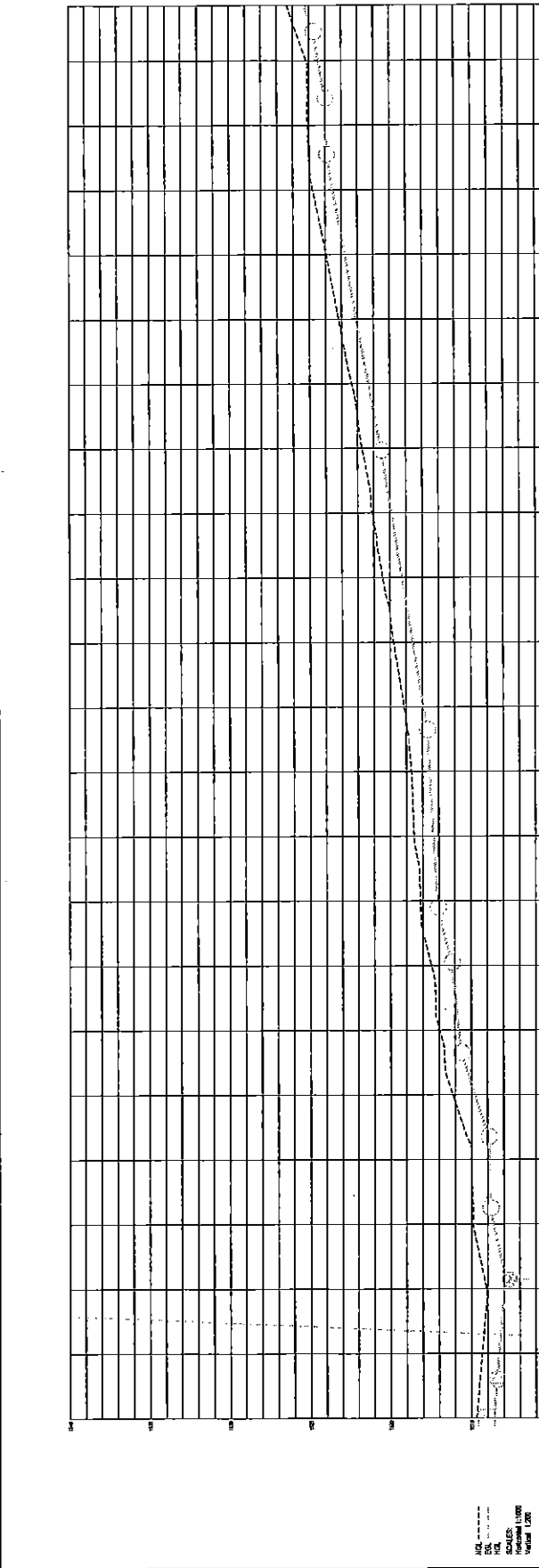
○ SCOUR VALVE

○ AIR VALVE

▣ ISOLATION VALVE

○ BOREHOLE

**BH**



ASCE 11-11  
SCALE: Horizontal 1:1000  
Vertical 1:200

**DIMENSIONS (COORD)**

REPERECE	
ORLANCE (PI)	
GROUND LEVEL	
PPE INERT LEVEL	
DEPTH TO BERT	
TRENCH LEVEL	
DEPTH TO TRANCH	
SLOPE / LENGTH	
CHANGE IN DIRECTION	
FITTINGS	
HYDRAULICS	

LINE NO.	LINE TYPE	START	STOP	PIPE	SIZE	MATERIAL	DEPTH	VERT. CORR.	CHANGES	REMARKS
01	11	0+00	0+05	100	300	PVC	1.20			
02	11	0+05	0+10	100	300	PVC	1.20			
03	11	0+10	0+15	100	300	PVC	1.20			
04	11	0+15	0+20	100	300	PVC	1.20			
05	11	0+20	0+25	100	300	PVC	1.20			
06	11	0+25	0+30	100	300	PVC	1.20			
07	11	0+30	0+35	100	300	PVC	1.20			
08	11	0+35	0+40	100	300	PVC	1.20			
09	11	0+40	0+45	100	300	PVC	1.20			
10	11	0+45	0+50	100	300	PVC	1.20			
11	11	0+50	0+55	100	300	PVC	1.20			
12	11	0+55	0+60	100	300	PVC	1.20			
13	11	0+60	0+65	100	300	PVC	1.20			
14	11	0+65	0+70	100	300	PVC	1.20			
15	11	0+70	0+75	100	300	PVC	1.20			
16	11	0+75	0+80	100	300	PVC	1.20			
17	11	0+80	0+85	100	300	PVC	1.20			
18	11	0+85	0+90	100	300	PVC	1.20			
19	11	0+90	0+95	100	300	PVC	1.20			
20	11	0+95	1+00	100	300	PVC	1.20			

PROPOSED

MPJULULWANE WATER SUPPLY SCHEME - MPJULULWANE RETICULATION

PROJECT TITLE

MPJULULWANE RETICULATION NETWORK - RISING MAIN

DATE: 23-12-2020

PROJECT NO: 0 CF 12

REVISION

NO. DESCRIPTION

1. 1

2. 1

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98. 1

99. 1

100. 1

Pharos Engineering & Planning  
11, KIBITHO ROAD, KILIMANJARO DISTRICT  
TEL: 020 273 1888

REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	23/12/2020
2	ISSUED FOR TENDER	23/12/2020
3	ISSUED FOR CONTRACT	23/12/2020
4	ISSUED FOR AS-BUILT	23/12/2020

PROJECT NO: 0 CF 12

DATE: 23-12-2020

PROJECT TITLE: MPJULULWANE RETICULATION NETWORK - RISING MAIN

PROJECT NO: 0 CF 12

DATE: 23-12-2020



**LEGEND**

- STORAGE RESERVOIR
- ⊕ SCOUR VALVE
- ⊕ AIR VALVE
- ⊗ ISOLATION VALVE
- ⊕ BOREHOLE

NO.	REVISIONS	DESCRIPTION



Checked By: \_\_\_\_\_  
 Prepared By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Drawing No: \_\_\_\_\_  
 Project No: \_\_\_\_\_

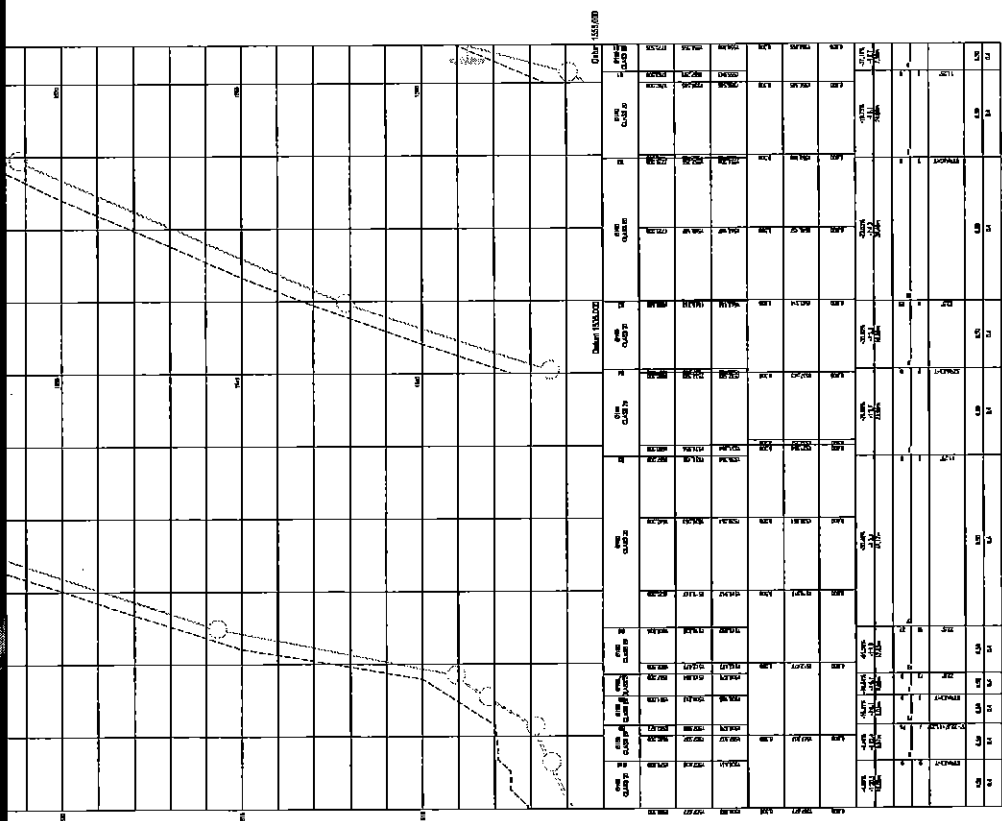
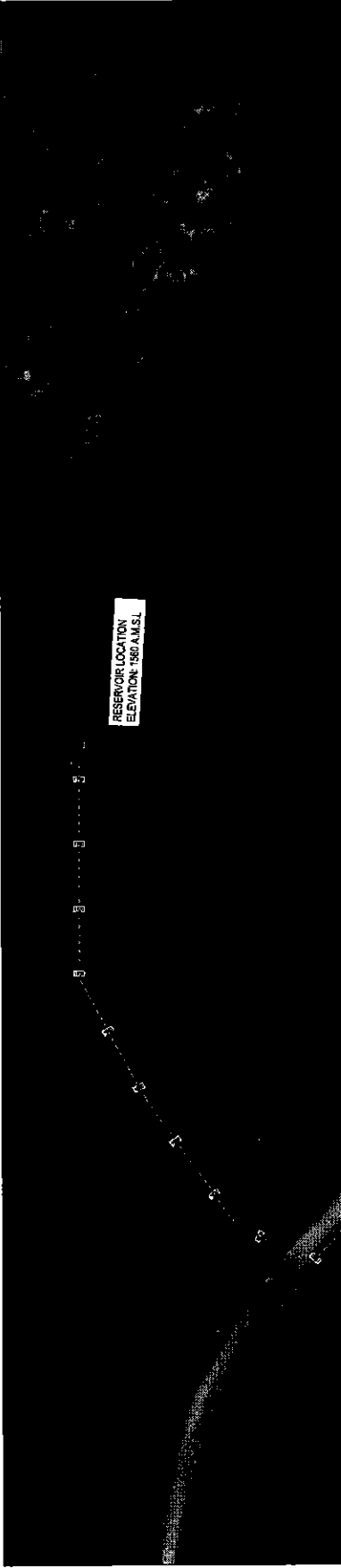


**PROJECT:**  
 KHUKHULELA WATER SUPPLY  
 SCHEME - MPUMALANGA  
 RETICULATION

**DRAWING TITLE:**  
 MPUMALANGA RETICULATION  
 NETWORK - RISING MAIN

DATE:	25-12-2020
SCALE:	1:500
PROJECT NO:	MPUMAL-062
DRAWING NO:	RM
REV:	0

RESERVOIR LOCATION  
 ELEVATION: 1580 AMSL



SCALE: 1:500  
 HORIZONTAL SCALE: 1:500  
 VERTICAL SCALE: 1:100

DATE	25-12-2020
SCALE	1:500
PROJECT NO	MPUMAL-062
DRAWING NO	RM
REV	0

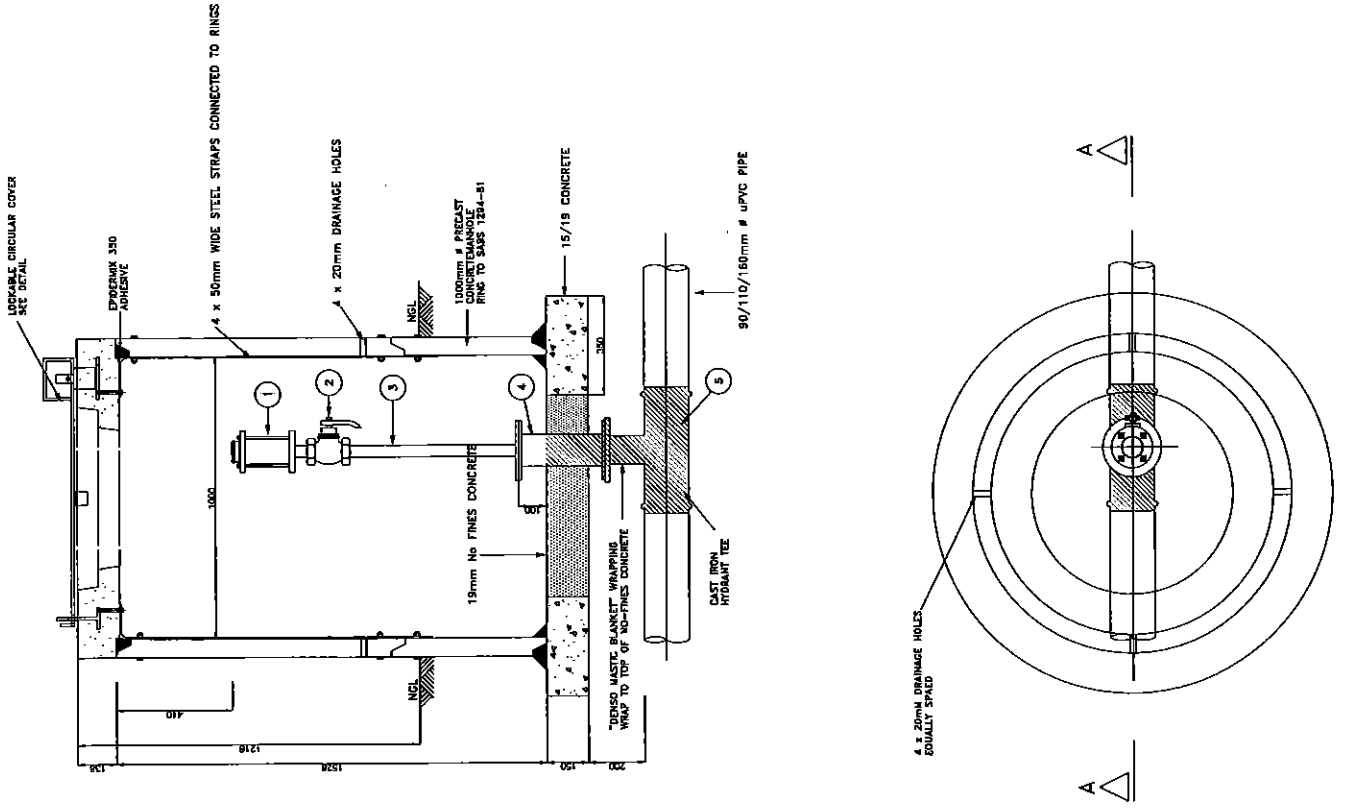
REFERENCE	
DISTANCE (m)	
GROUND LEVEL	
PIPE INSERT LEVEL	
DEPTH TO INSERT	
TRENCH LEVEL	
DEPTH TO TRENCH	
SLOPE / LENGTH	
CHANGE IN DIRECTION	
FITTINGS	
HYDRAULICS	
REVISIONS	



**FITTINGS SCHEDULE FOR PIPES**

ITEM	No. DIA.	DESCRIPTION	No. OFF
①	25 (50)	*VENT-O-MAT AIR VALVE 025-RBX-16-1-1 or 025-RBX-16-1-1	1
②	25 (50)	* GLEN BALL VALVE	1
③	25 (50)	*025 STRAIGHT, THREADED ONE END, FLANGED ONE END 800mm, CONTAIN LENGTH ON SITE	1
④	80	*025 STRAIGHT, FLANGED BOTH ENDS 310mm LONG.	1
⑤	90/110/160	*CAST IRON HYDRANT TEE	1

- \* 1. SIZE AND TYPE OF AIR VALVE IN ACCORDANCE WITH DETAILS SHOWN ON LAYOUT DRAWING
- \* 2. DIAMETER OF CONNECTING PIPE WORK AND FITTINGS TO SUIT SIZE OF AIR VALVE.



1. ALL DIMENSIONS IN MILLIMETRES
2. CONCRETE TO BE CLASS 15/19 UNLESS OTHERWISE SPECIFIED
3. COVER TO BE REINFORCED TO BE 40mm
4. AIR VALVE TO BE POSITIONED ABOVE NGL
5. ALL FLANGES TO BE MINIMUM 100 MM OR TO SUIT PIPE CLASS
6. ALL THROUS TO BE STAINLESS
7. ALL PIPES, FITTINGS AND ACCESSORIES TO BE GALVANIZED TO BS 1581 / 1580
8. ALL STEEL COMPONENTS INCLUDING WELDS TO BE PAINTED TO BS 1581 / 1580
9. ALL WELDS TO BE FULL PENETRATION TO BS 1581 / 1580
10. WALL THICKNESS TO BE WITH A TOLERANCE OF 30mm



DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_

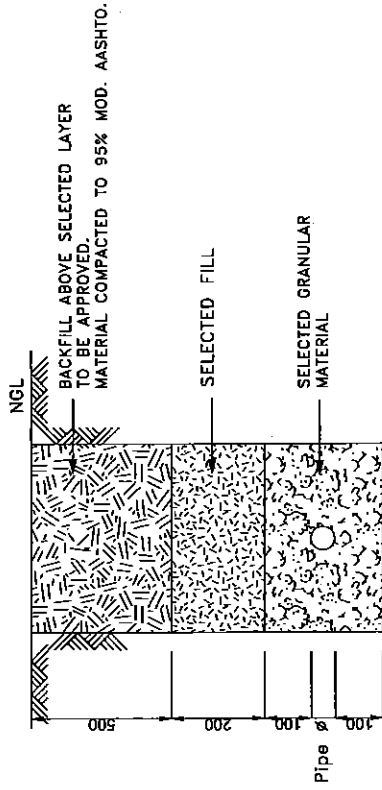


STANDARD DETAILS  
 AIR VALVE DETAILS FOR  
 90/110/160/200

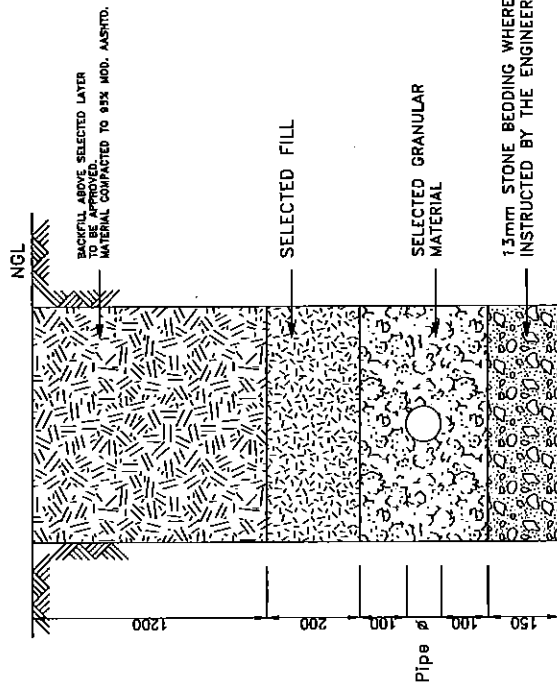
PROJECT No.	DATE	SCALE	STATUS	REVISED	RA

FOR TENDER







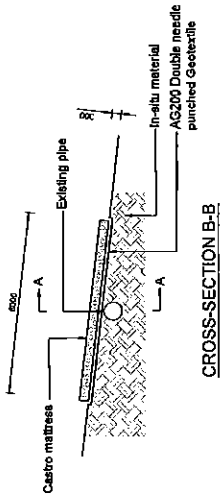
BEDDING DETAIL FOR RETICULATION PIPES UP TO 75mm ø COVER 800mm



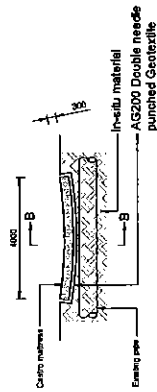
BEDDING DETAIL FOR SECONDARY BULK PIPELINES 50mm ø TO 160mm ø COVER 1500mm

 PAKISTAN STATE ENGINEERS INCORPORATED IN PAKISTAN	
NAME: _____	DATE: _____
DESIGNED BY: _____	CHECKED BY: _____
DRAWN BY: _____	APPROVED BY: _____
PROJECT NO. _____	DATE: _____
HARRY GWALA DISTRICT MUNICIPALITY	
	
STANDARD DETAILS	
TYPICAL BEDDING DETAILS	
SHEET NO. _____ OF _____ TOTAL SHEETS _____	DRAWN BY: _____ DATE: _____
PROJECT: _____	
DRAWING NO.: _____	
FOR TENDER	
STD-008	
RA	



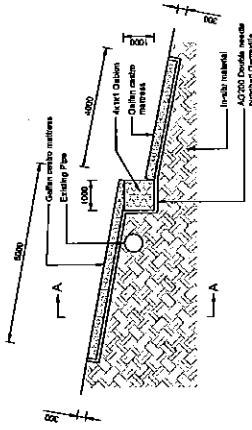


CROSS-SECTION B-B

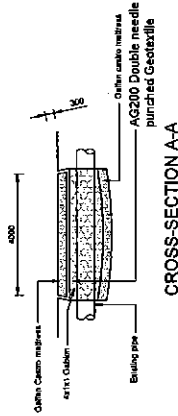


CROSS-SECTION A-A

TYPE 1 - EROSION CONTROL FOR PIPE BELOW GROUND LEVEL

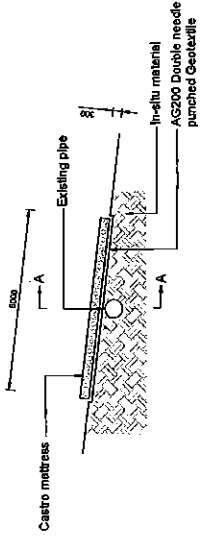


CROSS-SECTION

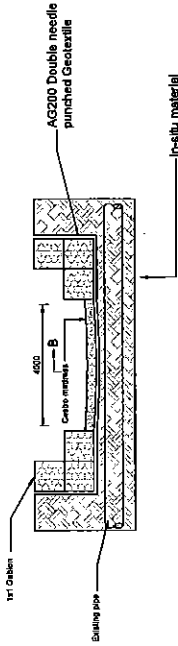


CROSS-SECTION A-A

TYPE 2 - EROSION CONTROL AT HEAD CUTS DOWNHILL FROM PIPE

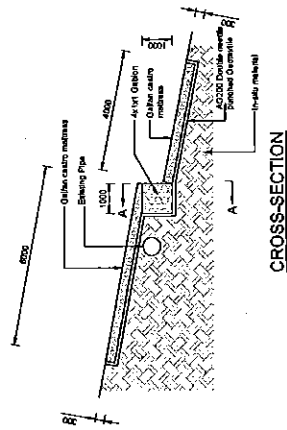


CROSS-SECTION B-B

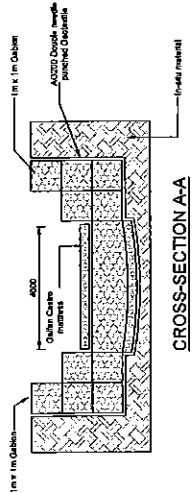


CROSS-SECTION A-A

TYPE 3 - EROSION CONTROL FOR PIPE BELOW GROUND LEVEL

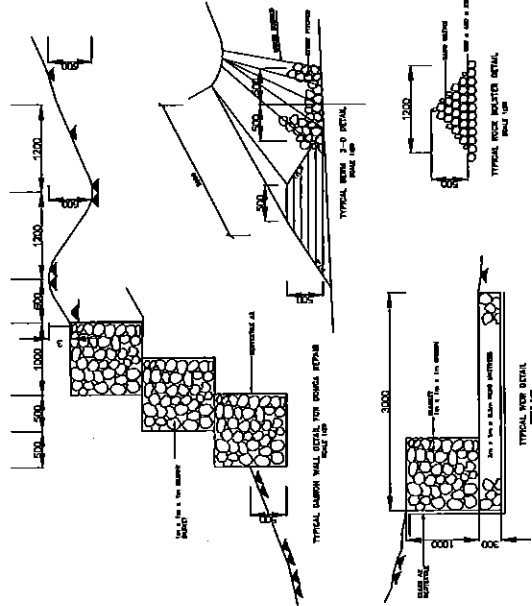


CROSS-SECTION




CROSS-SECTION A-A

TYPE 4 - EROSION CONTROL AT HEAD CUTS DOWNHILL FROM PIPE



TYPICAL PIPE DETAIL

TYPICAL PIPE DETAIL


  
 DEPARTMENT OF WATER AND SANITATION  
 FREE STATE

PROJECT NO.: \_\_\_\_\_  
 DRAWING NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 CONSULTANT: \_\_\_\_\_

HARRY GWALLA  
 DISTRICT MUNICIPALITY

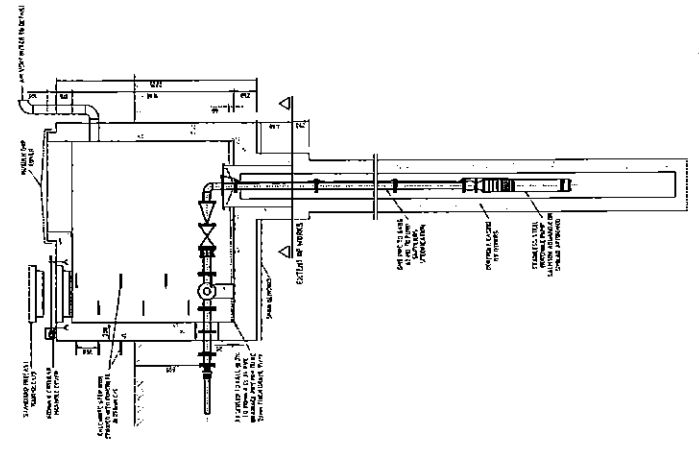
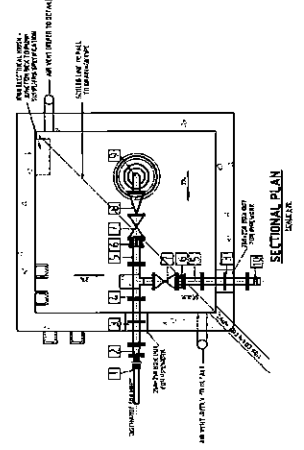
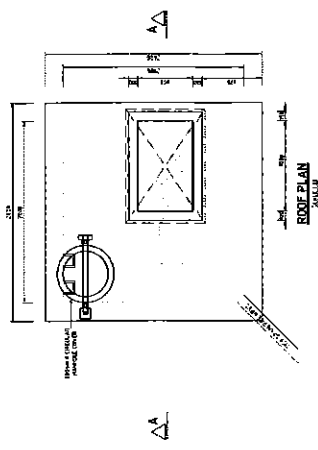
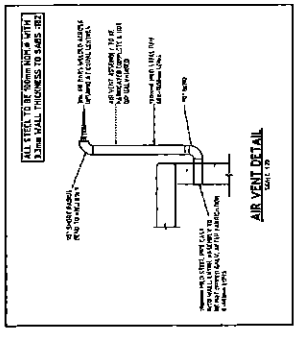
STANDARD DETAILS  
 EROSION PROTECTION DETAILS


SHEET NO. \_\_\_\_\_  
 OF \_\_\_\_\_  
 PROJECT NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 CONSULTANT: \_\_\_\_\_

STAND - 013  
 FOR TENDER

**PIPE SCHEDULE**  
RETURN PUMP STATION

ITEM NO.	QUANTITY	DESCRIPTION	UNIT	QTY.	REMARKS
1	1	CONCRETE	UNIT	1	
2	1	STEEL	UNIT	1	
3	1	PIPE	UNIT	1	
4	1	VALVE	UNIT	1	
5	1	PIPE	UNIT	1	
6	1	VALVE	UNIT	1	
7	1	PIPE	UNIT	1	
8	1	VALVE	UNIT	1	
9	1	PIPE	UNIT	1	
10	1	VALVE	UNIT	1	
11	1	PIPE	UNIT	1	
12	1	VALVE	UNIT	1	
13	1	PIPE	UNIT	1	
14	1	VALVE	UNIT	1	
15	1	PIPE	UNIT	1	

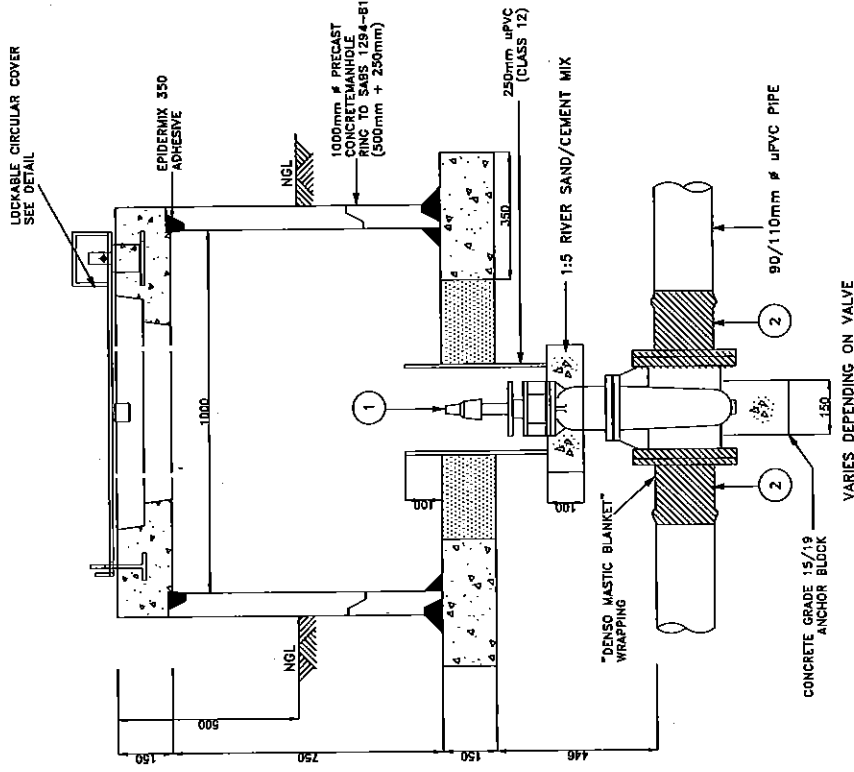


 <p><b>HARRY GWALA DISTRICT MUNICIPALITY</b></p>		SHEET NO. _____ OF _____ DATE _____
PROJECT: _____ LOCATION: _____		DRAWN BY: _____ CHECKED BY: _____ DESIGNED BY: _____ CONSULTANT: _____
STANDARD DETAILS		BOREHOLE PUMP STATION DETAILS
CONTRACT NO. _____		FOR TENDER

FITTINGS SCHEDULE FOR PIPES

ITEM No.	DIA.	DESCRIPTION	No. OFF
①	100	*GATE VALVE CLASS 16	1
②	90/110	* CAST IRON FLANGE ADAPTER	2

- \* 1. SIZE AND TYPE OF ISOLATING VALVE IN ACCORDANCE WITH DETAILS SHOWN ON LAYOUT DRAWING
- \* 2. DIAMETER OF CONNECTING PIPE WORK AND FITTINGS TO SUIT SIZE OF ISOLATING VALVE.



1. ALL DIMENSIONS IN MILLIMETRES
2. CONCRETE TO BE CLASS 15/19 UNLESS OTHERWISE SPECIFIED
3. COVER TO REINFORCEMENT TO BE 40mm
4. ALL FLANGES TO MINIMUM 2500 kPa OR TO SUIT PFC CLASS
5. ALL THREADS TO BSF STANDARDS
6. ALL JUNCTIONS AND UNIONS TO BE WELDED IN "GROUSE MASTIC" BLANKET TAPE
7. ALL STEEL COMPONENTS INCLUDING BOLTS GALVANIZED TO BS 1481 : 2000
8. ENGINEER TO BE CONSULTED IN RESPECT OF APPROPRIATE DESIGN OF PIPE PRESSURE OVER CLASS 16



Contract No. \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Drawing No. \_\_\_\_\_

DESIGNED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_



STANDARD DETAILS

90/140/160/200 DIA  
 ISOLATION VALVE TYPICAL  
 DETAILS

PROJECT No. \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 No. \_\_\_\_\_  
 STND - 004  
 RA


FOR TENDER

1. QUANTITY OF MATERIAL MUST BE ON UNDERSIGNED DRAWING.
2. QUANTITY SHALL BE 10% FOR ALL MATERIALS.
3. 4 = PILES #

NO.	DESCRIPTION	UNIT	QTY.

**PHANOM SAIGON**  
 PHANOM SAIGON ENGINEERING CONSULTANTS  
 10th Floor, Hanoi Hotel, Hanoi, Vietnam  
 Phone: +84 24 3793 8888  
 Fax: +84 24 3793 8888  
 E-mail: phanom@phasai.com.vn  
 Website: www.phanom.com.vn

NO.	DESCRIPTION	UNIT	QTY.



**HARRY OMALA DISTRICT MUNICIPALITY**

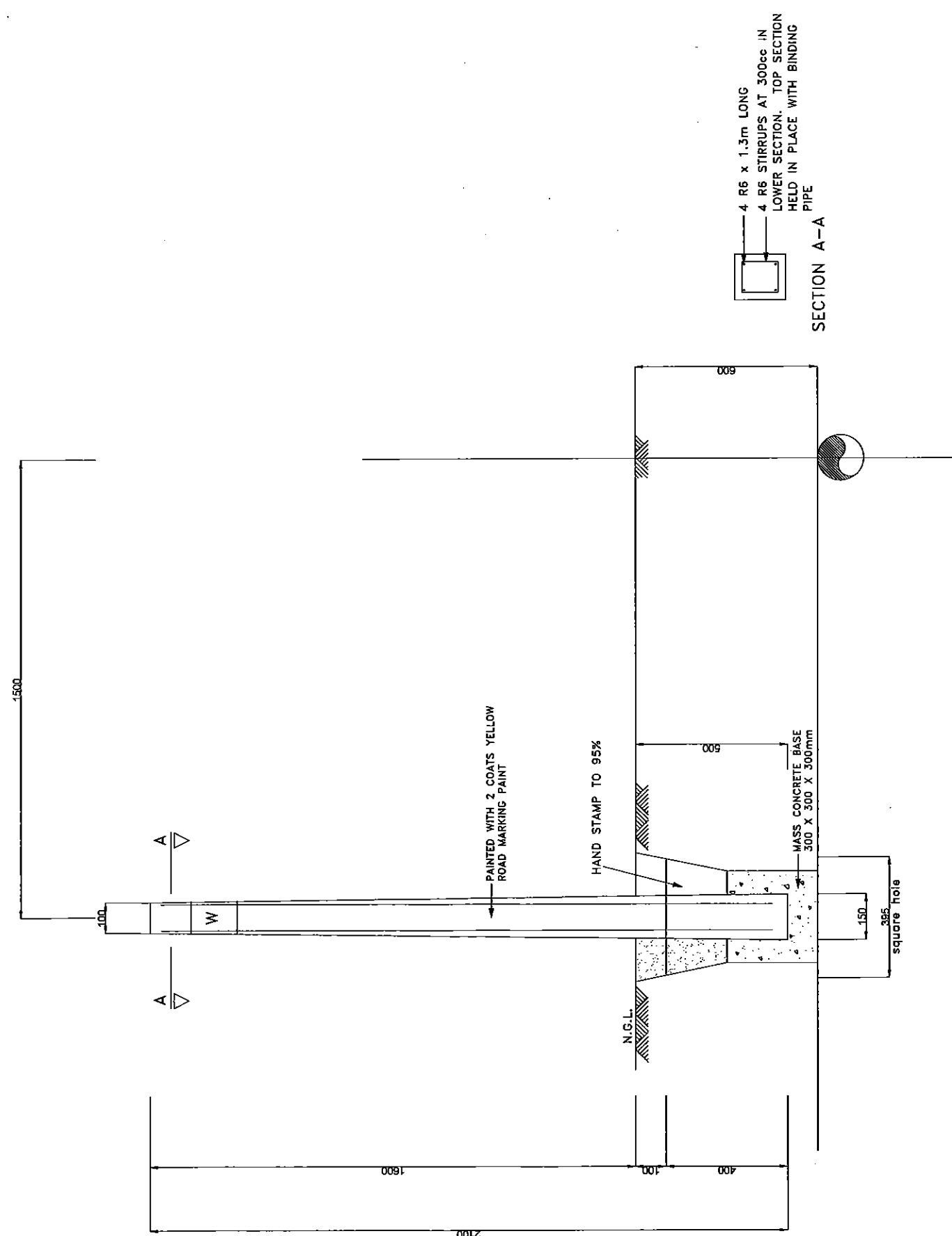
PROJECT NO. \_\_\_\_\_

DATE: \_\_\_\_\_

SCALE: 1:100

STANDARD DETAILS		NO.	REV.
PIPE ROUTE MARKER		01	1

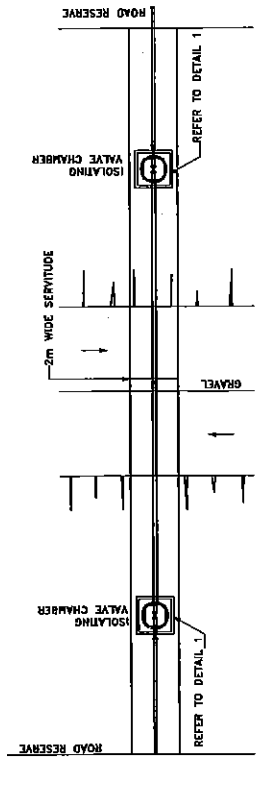
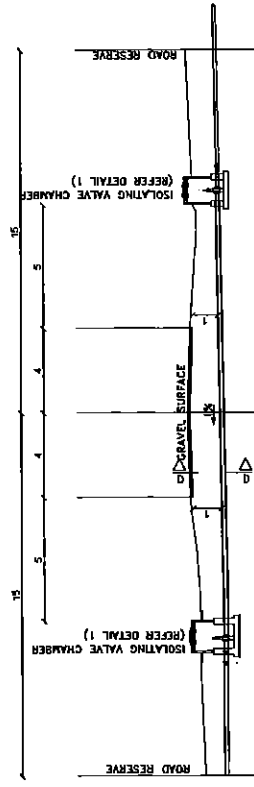
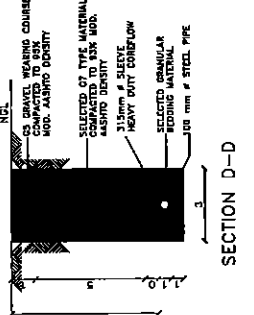
FOR TENDER



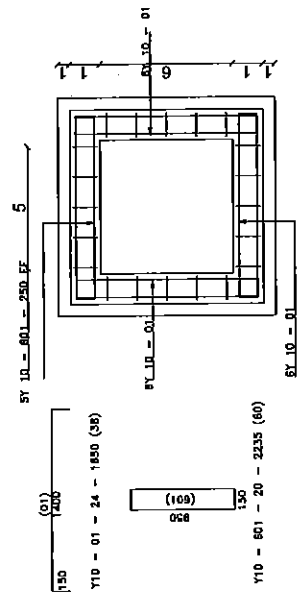
SECTION A-A  
 4 R6 x 1.3m LONG  
 4 R6 STIRRUPS AT 300cc IN  
 LOWER SECTION, TOP SECTION  
 HELD IN PLACE WITH BINDING  
 PIPE

(ALL SPECIALS TO BE SUITABLE FOR 4 MPa WORKING PRESSURE.)

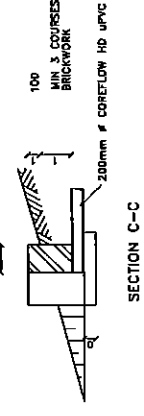
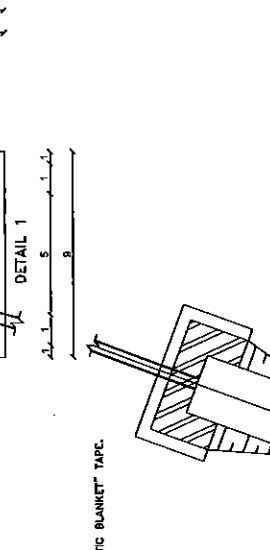
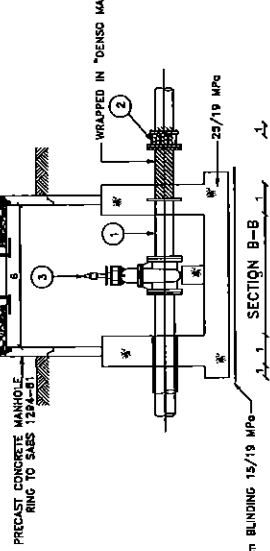
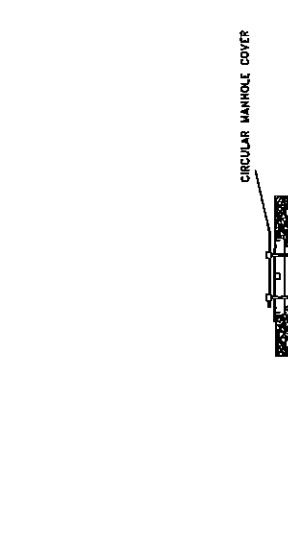
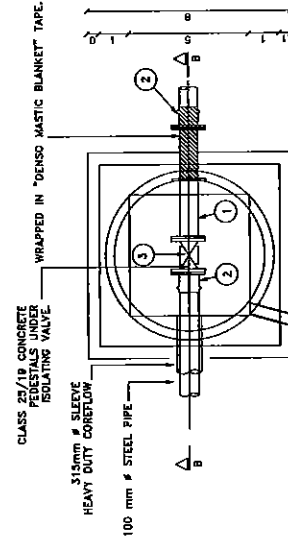
ITEM	Diagn.	DESCRIPTIONS	SKETCH OF FITTINGS	NO. OF FITTINGS
1	100	DN5 PIPE FLANGED ENDS WITH PUDDLE FLANGE		1
2	100	FLANGED TO GROOVED ADAPTOR		2
3	100	RESILIENT SEAL GATE VALVE CLASS 40		1



PLAN OF PIPE SLEEVE CROSSING UNDER ROAD



PLAN OF REINFORCING TO CHAMBER BASE



SECTION C-C

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
2. CONCRETE TO BE CLASS 25/19 UNLESS OTHERWISE STATED.
3. COVERS TO MINIMUM 40mm UNLESS OTHERWISE STATED.
4. ALL FLANGES TO BE 4mm MIN. OR TO SUT PIPE CLASS.
5. ALL THREADS TO BE STANDARD.
6. ALL BORED FITTINGS AND HANGES TO BE WRAPPED IN "DENSOLASTIC BLANKET" TAPE.
7. ALL STEEL COMPONENTS INCLUDING BELTS TO BE GALVANIZED TO ISO 14543 TYPE 1.
8. ALL STEEL COMPONENTS INCLUDING BELTS TO BE WRAPPED IN "DENSOLASTIC BLANKET" TAPE.
9. ALL BELTS TO BE CLASS 40 UNLESS OTHERWISE STATED.
10. ALL BELTS TO BE CLASS 40 UNLESS OTHERWISE STATED.
11. ALL BELTS TO BE CLASS 40 UNLESS OTHERWISE STATED.

PHYSICIAN'S SIGNATURE  
DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_  
DESIGNATION: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

HARRY GWALA DISTRICT MUNICIPALITY

STANDARD DETAILS

ROAD CROSSING DETAILS

STND-014

FOR TENDER

2280

25

1215

500

25

WHITE BACKGROUND

Municipal Infrastructure Grant | **mig**

DARK BLUE ON WHITE BACKGROUND

### HARRY GWALA DISTRICT MUNICIPALITY

PROJECT NAME: KHUKHULELA WATER SUPPLY SCHEME

CONTRACT NUMBER: XXXXXXXXXX

WORK PERMIT NUMBER: XXXXXXXXXX

WHITE BACKGROUND



DARK BLUE ON WHITE BACKGROUND

CONSULTANT:

### PHAKATHI & SHABANE

CONSULTING ENGINEERS CC  
34, PROSPECT RD, UMBILO, DURBAN  
Telephone (031) 2057767

WHITE BACKGROUND

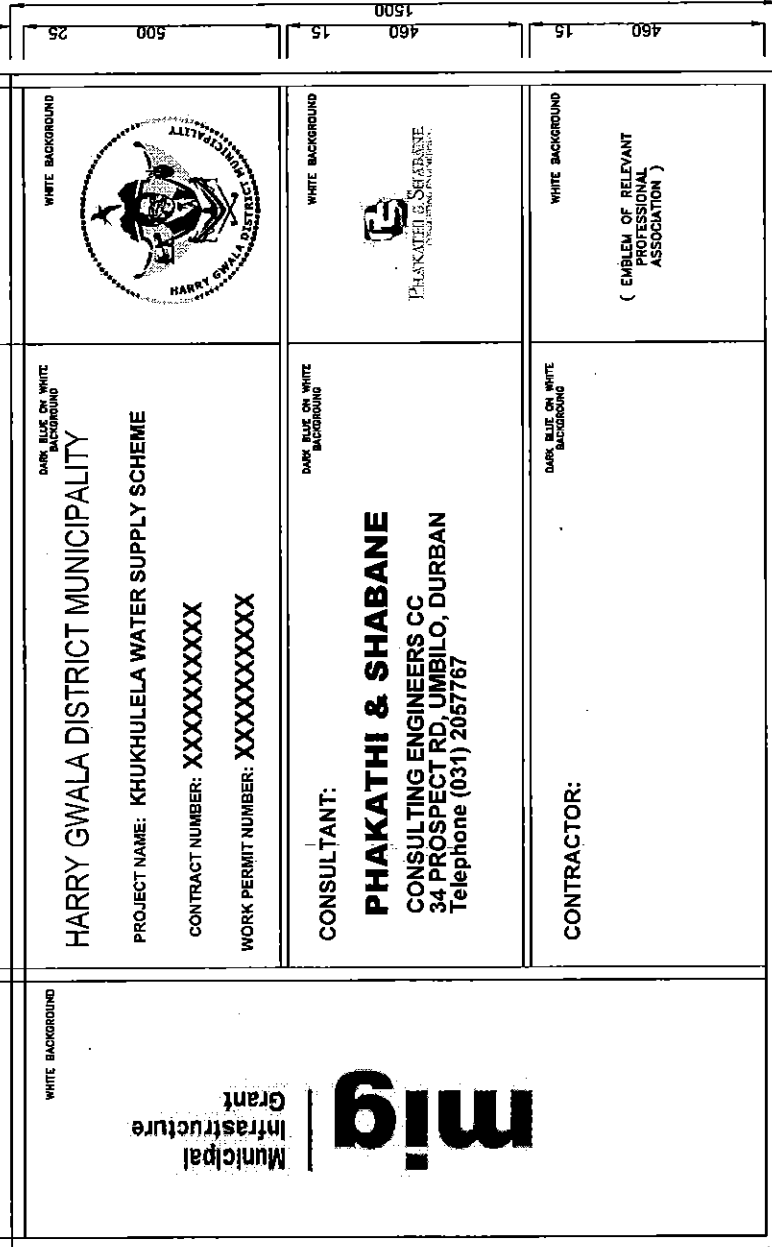


DARK BLUE ON WHITE BACKGROUND

CONTRACTOR:

WHITE BACKGROUND

( EMBLEM OF RELEVANT PROFESSIONAL ASSOCIATION )



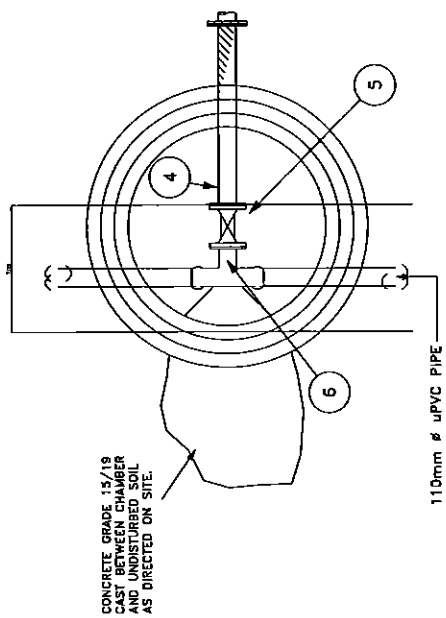
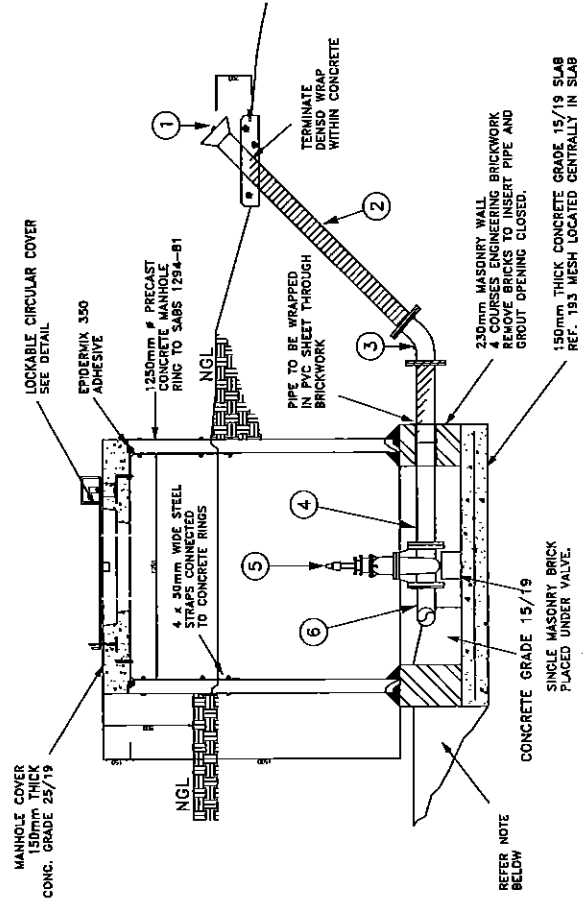
 PHAKATHI & SHABANE CONSULTING ENGINEERS	
Company:	
Address:	
Telephone:	
Project Name:	
Contract No.:	
Project No.:	
Client:	
 HARRY GWALA DISTRICT MUNICIPALITY	
PROJECT:	
STANDARD DETAILS	
SIGN BOARD DETAIL	
SCALE:	
DATE:	
DRAWN BY:	
CHECKED BY:	
DATE:	
PROJECT NO.:	
TOP-1	
STND - 019	
RA	

FOR TENDER



FITTINGS SCHEDULE FOR PIPES

ITEM No.	DIA.	DESCRIPTION	No. OFF
①	80	JET DISPENSER	1
②	80	8MS STRAIGHT, FLANGED ONE END 1500mm, CONFIRM LENGTH ON SITE	1
③	80	45' ELBOW, FLANGED BOTH ENDS	1
④	80	80 # 8MS STRAIGHT, FLANGED BOTH ENDS 1000mm, CONFIRM LENGTH ON SITE	1
⑤	80	80 # FLANGED WATER WORKS GATE VALVE TO SABS 664	1
⑥	110	CAST IRON HYDRANT TEE	1



1. ALL DIMENSIONS IN MILLIMETRES
2. CONCRETE TO BE CLASS 15/19 UNLESS OTHERWISE SPECIFIED
3. COVER TO REINFORCEMENT TO BE 40mm
4. ALL FLANGES TO MINIMUM 1' 800 MPA OR TO SUIT PIPE CLASS
5. ALL THREADS TO BSP STANDARDS
6. ALL WELDED FITTINGS AND JOINTS TO BE WELDED TO 2500S AUSTIC BRACKET TYPE
7. ALL STEEL COMPONENTS INCLUDING BOLTS GALVANISED TO ISO 1481 : 2000
8. ALL WELDS TO BE FULL PENETRATION TO BS 534 AND FILLET WELD TO BE MINIMUM OF 5mm

**ENGINEERING SERVICES**  
CONSULTANTS PRIVATE LIMITED

Project: \_\_\_\_\_  
Drawing No.: \_\_\_\_\_  
Scale: \_\_\_\_\_  
Date: \_\_\_\_\_

DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
CADD: \_\_\_\_\_

**HARRY GWALA**  
DISTRICT  
MUNICIPALITY

STANDARD DETAILS

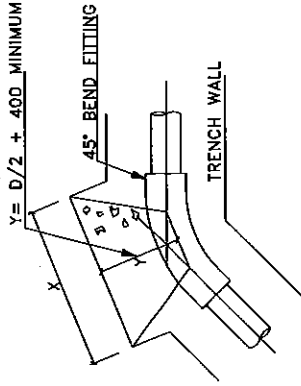
90/140/160 SCOUR VALVE  
TYPICAL DETAILS

PROJECT: \_\_\_\_\_  
SHEET NO. OF \_\_\_\_\_  
SHEET TOTAL \_\_\_\_\_  
DATE: \_\_\_\_\_  
SCALE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
CADD: \_\_\_\_\_

STND - 006

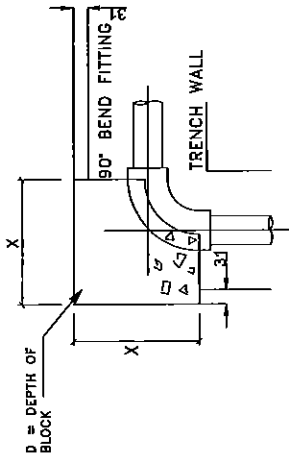
FOR TENDER

1. ALL BLOCKS OF THRUFAST MADE TO BE OK
2. CONCRETE GRADE 15/10 FOR ALL THRUFAST BLOCKS.
3.  $d = \text{PIPE } \phi$



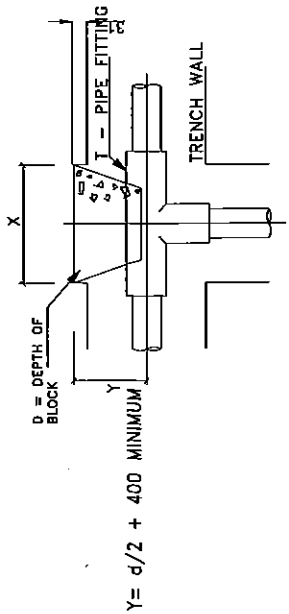
45°/22.5° BEND THRUFAST BLOCK FOR PRESSURE PIPELINE

PIPE X D (mm)(mm)(mm)
50 300 150
75 300 150
90 400 200
110 500 250
160 600 300



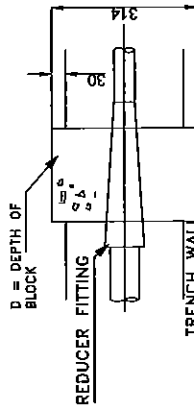
90° BEND THRUFAST BLOCK FOR PRESSURE PIPELINE

PIPE X D (mm)(mm)(mm)
50 560 225
75 560 225
90 650 300
110 730 375
160 825 450



TEE CONNECTION THRUFAST BLOCK FOR PRESSURE PIPELINE

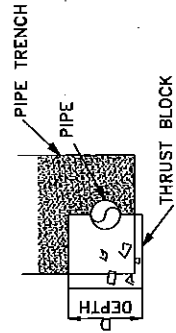
PIPE X D (mm)(mm)(mm)
50 300 150
75 300 150
90 400 200
110 500 250
160 600 300




REDUCER CONNECTION THRUFAST BLOCK FOR PRESSURE PIPELINE

PIPE X D (mm)(mm)(mm)
90 700 300
110 700 300
160 700 300

THRUFAST BLOCKS SUITABLE FOR A MAXIMUM INTERNAL PIPE PRESSURE OF 900 kPa



TYPICAL SECTION


  
 HARYANA STATE WATER ENGINEERING & RESEARCH INSTITUTE

PROJECT NO. \_\_\_\_\_

DRAWING TITLE: \_\_\_\_\_

HARRY GWALA DISTRICT MUNICIPALITY

STANDARD DETAILS

THRUFAST BLOCK DETAILS

DRAWING NO. \_\_\_\_\_

SHEET NO. \_\_\_\_\_

TOTAL SHEETS \_\_\_\_\_

DATE \_\_\_\_\_

FOR TENDER